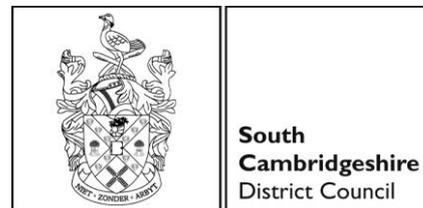


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16 November 2020

To: Chairman – Councillor Dr. Tumi Hawkins
Vice-Chairman – Councillor Katie Thornburrow
All Members of the Joint Local Planning Advisory Group - Councillors
Tim Bick, Martin Smart, Dr. Aidan Van de Weyer, Tim Wotherspoon and
Nick Wright

Dear Sir / Madam

You are invited to attend the next meeting of **JOINT LOCAL PLANNING ADVISORY GROUP**, which will be held in **VIRTUAL MEETING - ONLINE** on **TUESDAY, 24 NOVEMBER 2020** at **5.30 p.m.** This meeting will be held via Microsoft Teams and a web link to enable members of the press and public to listen to the proceedings will be published on the relevant page of the Council website by 5.00pm on the day before the meeting.

Members are respectfully reminded that when substituting on committees, subcommittees, and outside or joint bodies, Democratic Services must be advised of the substitution in advance of the meeting. It is not possible to accept a substitute once the meeting has started. Council Standing Order 4.3 refers.

Yours faithfully
Liz Watts
Chief Executive

Requests for a large print agenda must be received at least 48 hours before the meeting.

	AGENDA	PAGES
1.	Apologies	
2.	Declarations of Interest	
3.	Minutes of the Previous Meeting	1 - 8
4.	Greater Cambridge Local Plan: Strategic Options Assessment and Stakeholder Engagement	9 - 1810

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Agenda Item 3

SOUTH CAMBRIDGESHIRE DISTRICT COUNCIL

Minutes of a meeting of the Joint Local Planning Advisory Group held on
Tuesday, 2 June 2020 at 5.30 p.m.

PRESENT: Councillor Dr. Tumi Hawkins – Chair
Councillor Katie Thornburrow – Vice-Chair

Councillors: Tim Bick Mike Sargeant
Dr. Aidan Van de Weyer Timothy Wotherspoon
Nick Wright

Officers in attendance for all or part of the meeting:

Jonathan Dixon (Principal Planning Policy Officer), Paul Frainer (Assistant Director of Shared Planning Service), Caroline Hunt (Strategy and Economy Manager), Hana Loftus (Special Projects Officer), Matthew Paterson (Planning Officer), Terry De Sousa (Planning Officer), Julian Sykes (Principal Planning (project manager)).

1. ELECTION OF CHAIR AND VICE CHAIR

Councillor Aidan Van de Weyer proposed, and Councillor Katie Thornburrow seconded, the nomination of Councillor Tumi Hawkins as Chair.
It was **agreed** unanimously that Councillor Hawkins be Chair for the ensuing year.

Councillor Tim Bick proposed, and Councillor Tumi Hawkins seconded, the nomination of Councillor Katie Thornburrow as Vice-Chair.
It was **agreed** unanimously that Councillor Thornburrow be Vice-Chair for the ensuing year.

2. APOLOGIES

No apologies were received for this meeting.

It was noted that Councillor Nick Wright had replaced Councillor Tom Bygott as the conservative representative from South Cambridgeshire District Council.

3. DECLARATIONS OF INTEREST

No declarations of interest.

4. MINUTES OF THE PREVIOUS MEETING

The minutes of the meeting held on Tuesday 2 June 2020 were agreed as a correct record, subject to the following amendment:

- In minute 5, page 3, the wording in the second line to read "...resulting from consultation responses suggesting that new settlements were the preferred choice rather than expansion of existing villages".

5. NORTH EAST CAMBRIDGE AREA ACTION PLAN

Members were shown a presentation which highlighted the strategic objectives, key proposals and section of the North East Cambridge Area Action Plan (NECAAP). Officers intended on bringing back a paper to members on the representations received through

the summer NECAAP consultation.

Following the presentation on NECAAP, Chair Tumi Hawkins issued a thank you to everyone who had been involved in drafting the NECAAP & all the supplementary documents. All members of the JLPAG seconded this.

In response to the presentation on the NAACP, Members had the following comments:

- I. The Chair questioned why there wasn't already a plan to implement a secondary school, instead protecting the land in case it was needed.
- II. It was questioned if the NECAAP planning was occurring too early, as it was going to be a 7-year period until the work could commence.
- III. It was commented that the integration of public transport would be fantastic, never had there been a site like this before with such a variety of transport links.
- IV. Enquired if there may be less need for office space in a post COVID-19 world.
- V. It was noted that employers were to be assigned blocks of employee designated housing under the AAP and commented that this would go against the Cambridge Local Plan policy 45.
- VI. That there was some clarification needed on HMOs (homes of multiple occupancy), it was remarked that the AAP discusses HMOs developing over time but simultaneously that the build to rent housing would all be HMOs, which was a contradiction.
- VII. Noted that there was not much information for the public in the report on density, and that there was concern about flexibility on the height of buildings for developers. The report stated 5 to 6 floors, but with a potential for 8, it was questioned how they would stop developers always taking the maximum of 8.
- VIII. The chair questioned how they would build and manage HMOs, as well as querying how they would consider Article 4.

In response, officers from the Greater Cambridge Planning Service said the following:

- I. Advice from officers at the County Council had stated that a secondary school was likely not to be needed.
- II. As the NECAAP requires the re-siting of the waste water works, which would require its own consultation and planning period, preparing now allows the planning service to engage with the wider community and ensure the process is not developer led.
- III. Officers noted that the planning service was communicating on how to provide an integrated public transport system across the whole of Cambridgeshire.
- IV. It was remarked that the policies would be kept under review as the situation may change rapidly. A section would added at the beginning of NECAAP to state that

all policies would be kept under review due to the impact of COVID-19.

- V. It was commented that employers had been assigned blocks of housing due to the desire to drive down car use. It was noted however, that the plan is in its draft stage and comments were invited.
- VI. Officers noted that they would review any apparent contradiction regarding HMOs.
- VII. Officers noted that the plan was for a variation in development height across the site, so developers would not be allowed to consistently have the maximum building height of 8 floors.
- VIII. Noted that Article 4 is retrospective and as such, can only be applied once an issue is determined and that this would only be done if it could be managed through extent policy.

Members made the following further comments on the NECAAP presentation:

- I. Noted that open space is a very important feature and asked for the quantitative data from the Local Plan Issues and Options consultation around this topic.
- II. Asked officers to explain succinctly what the site wide use of water would be and queried if the site wide approach would help them to achieve their target of 80 litres per day, per home, without infringing on national policy.
- III. How would officers ensure that the development would provide for a variety of industry types and not just hi-tech industries?
- IV. Queried why the consultation was still occurring this summer as opposed to delaying it due to COVID-19.
- V. Highlighted the need to address the Fen Road level crossing issue jointly, particularly with regards to creating an integrated transport system. It was also queried why land had not been allocated in the AAP for dealing with this issue.
- VI. It was highlighted that the AAP intends to 'pepper-pot' affordable housing throughout the area, which was in contradiction to policy 45 of the Cambridge Local Plan.
- VII. Noted that Anglian Water would need to start a pre-submission public consultation for relocating the sewage treatment works and queried what the timing of this would be compared to the consultation for NECAAP?

In response, officers from the Greater Cambridge Planning Service said the following:

- I. From the Issues and Options consultation, 6 options had emerged for how to provide open space but that there was no clear favourite.
- II. There would be various strands to the water policy and that these would all be covered in the water cycle study and in an infrastructure delivery plan, which would come at a later stage.

- III. Officers noted that while it was important not to disregard top end office floor space for hi-tech, there was a strong desire to provide jobs for local people who were already in the area and that a detailed strategy of how this would be achieved would be presented in due course.
- IV. The Community forum felt it was important to build on the momentum that had been built and to get the public to answer these questions while it was fresh in their minds.
- V. Officers noted that the Fen Road issue had been highlighted in the first round of consultation and commented that Network Rail would be brought in to take part in the community consultation in this. With regard to land allocation, it was noted that this land was not owned by the two councils.
- VI. It was noted that the AAP can set out variance from local plan, but that it must set out why that is important.
- VII. Officers commented that Anglian Water were working towards 3 rounds of consultation. The first two of which would be 'informal' as they are not deemed necessary for the development control order (DCO) process. It was noted that the first round was due to happen in the summer but that there was no firm date. The second round of consultation was due to occur at the end of the year but that this would be determined by responses to the first round.

Members of the Joint Local Plan Advisory Group **agreed** by affirmation to:

1. Recommend the name of the AAP be formally changes to the North East Cambridge Area Action Plan and the boundary of the Area Action Plan be amended to be as shown on the new Policy map (Appendix A).
2. Review and comment on the draft North East Cambridge Area Action Plan: consultation document (Appendix B);
3. Note the response to comments received to the Issues & Options document as set out in the Statement of Consultation (Appendix C);
4. Note the findings of the updated Joint Equalities Impact Assessment, Draft Sustainability Appraisal, and Draft Habitats Regulation Report (Appendices D, E and F respectively); and
5. Recommend to the respective Councils decision-making processes that they should approve the draft North East Cambridge Area Action Plan, and supporting documents, for a ten-week period of public consultation.

6. **GREATER CAMBRIDGE LOCAL PLAN: ISSUES & OPTIONS FEEDBACK**

Officers displayed a presentation for Members highlighting proposed changes to the programme that would add further stakeholder consultation to take place in Autumn 2020 with preferred options for the next stage of public consultation to take place in summer 2021.

Members made the following comments after a presentation on the Local Plan Issues and Options Feedback:

- I. Queried if there would be any external valuation of the reach of the Local Plan consultation ensure that any mistakes can be learned from for future consultations.
- II. Questioned if having two options for the Local Plan timeline in the LDS (Local Development Scheme) was lawful or if it may be challengeable by a third party.
- III. Asked if officers knew what stage the Cambridgeshire and Peterborough Combined Authority's non-spatial framework had gotten to.
- IV. Asked what the impact would be of the East/West rail and Cam metro projects on the Local Plan and the NECAAP, and if conversations had been had with national rail and the Cambridgeshire and Peterborough Combined Authority with regards to the implications of these plans.
- V. Queried if having two plans for the timelines could cause an excess of homes and jobs if the NECAAP were to come through after the Local Plan.
- VI. Remarked on the need to flesh out the consequences of environmental measures on economic viability in further stages of consultation.
- VII. Queried if proceeding with two timeline options would double the work for officers and remarked that the sooner the joint local plan was submitted and weight given to it, the better, so as to move away from the flaws of previous Local Plans.
- VIII. It was queried if it was possible to include the AAP as part of the local plan, so there would be one document and one timetable.

In response, officers from the Greater Cambridge Planning Service said the following:

- I. There would be no independent evaluation of the consultation process due to resource concerns, but a lot of work was being done internally. It was noted that the public had been asked to voluntarily feedback and that these would be shared with members in due course.
- II. Remarked that it was unusual to have two potential timelines but commented that it wasn't a clear decision to take one option right now and therefore more sensible to leave their options open. A legal view was obtained, that this was a reasonable approach.
- III. Officers had not received any recent updates from the Combined Authority on its Non-Statutory Spatial Framework.
- IV. Officers were engaging with Cambridgeshire and Peterborough Combined Authority on the Cam Metro. It was remarked that although it was early days for the East/West rail project officers were in communication with national rail; and that this would need to be monitored as the plan was developed, to correspond to the weight it could be given in informing the local plan as it develops.
- V. Officers commented that they would have to consider the potential implications in

determining the right approach to the timetables. It was remarked that the decision would be informed as officers work through the strategic options over the next several years and the level of corresponding level of certainty regarding the AAP.

- VI. There would be work around economic growth and which sectors are seen to be likely to grow alongside the work into working towards net zero carbon. It was remarked that there would be stakeholder workshops to create an evidence-based plan as time progresses.
- VII. Every effort would be taken to try to progress the Local Plan as swiftly as possible but that it was also important to get the process right to create the best possible Local Plan.
- VIII. The AAP was a necessary document to support the DCO (Development Control Order) process, which would then later support the Local Plan, as such it was important to keep the AAP separate from the Local Plan for the time being but that this would be kept under review.

Members of the Joint Local Plan Advisory Group **agreed** by affirmation to:

- (a) Recommend to the respective Council's decision-making processes that they should:
 - i. Note the report on Initial Feedback from the First Conversation consultation included at Appendix 1.
 - ii. Agree additional informal member and stakeholder engagement and Preferred Options stages be added to the Local Plan making process.
 - iii. Agree the approach to addressing the Duty to Cooperate included as Appendix 3 to this report, subject to any material changes necessary as a result of consultation with Duty to Cooperate bodies.

7. GREATER CAMBRIDGE LOCAL DEVELOPMENT SCHEME

The discussion for this item was dealt with under the previous substantive item.

Under the previous substantive item, Members of the Joint Local Plan Advisory Group **agreed** by affirmation to:

- a) Recommend to the respective Council's decision-making processes that they should:
 - i. Adopt the updated Local Development Scheme for Greater Cambridge included at Appendix 1 of this report.
 - ii. Grant delegated authority to the Joint Director of Planning and Economic Development, in liaison with the South Cambridgeshire Lead Cabinet member for Planning and the Cambridge City Council Executive Councillor for Planning

Policy and Open Spaces (and also the Chair and Spokes for the Planning Policy and Transport Scrutiny Committee), to make any minor editing changes and corrections identified prior to publication.

Members of the Group noted that the next meeting was likely to take place in October and that more information would be released when it was available.

The Meeting ended at 8.20 p.m.

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Agenda Item 4

Report to:	Joint Local Planning Advisory Group (JLPAG)	24 November 2020
Lead Members:	Lead Cabinet member for Planning (SCDC) Cllr Tumi Hawkins Executive Councillor, Planning and Open Spaces (Cambridge) – Cllr Katie Thornburrow	
Lead Officer:	Stephen Kelly, Joint Director for Planning and Economic Development	

Greater Cambridge Local Plan: Strategic Options Assessment and Stakeholder Engagement

Executive Summary

1. This report seeks to feedback work on the identification and testing of strategic spatial options to inform the preparation of the Greater Cambridge Local Plan (Local Plan), and the planned approach to the winter 2020 stakeholder workshops. The Local Plan being prepared jointly by Cambridge City Council and South Cambridgeshire District Council will cover the period 2020-2041.
2. In June 2020 members agreed to include an additional stage of stakeholder engagement, prior to full public consultation on preferred options for the Local Plan in 2021.
3. Work has been undertaken to consider the options for homes and jobs growth for the Local Plan. Legislation and national planning policy require local plans to assess reasonable options to inform the plan's development strategy. The minimum number of homes is set by the government's standard method. Work has been carried out to understand the level of jobs these homes would support, which together provide a minimum growth scenario. In accordance with national objectives to consider an area's economic growth potential, and responding to the continuing strength of the Greater Cambridge economy, economic forecasting has been carried out. This had a particular focus on the sectors that the area excels in, as well as past trends of economic growth. This resulted in central and higher growth scenarios, translated into medium and maximum growth options, including the housing to support each level of jobs forecast also identified.

4. The possible growth levels have been distributed to different locations in Greater Cambridge to understand how well they perform in relation to the big themes identified for the Local Plan in the First Conversation consultation earlier in 2020. These strategic spatial options focus on broad locations to draw out the differences in impacts. They are not site specific. In reality, the Local Plan could take elements from a number of these spatial options. The spatial options have then been tested against a number of the emerging evidence base studies commissioned to inform the plan. These highlight the pros and cons, issues and opportunities related to the choices available. At this stage the Councils have not reached any view on the preferred approach to the development strategy for the Local Plan.
5. A Summary Report has been produced, alongside the range of evidence studies, which form appendices to this committee report. The documents have also been published on the Greater Cambridge Shared Planning Service website.
6. Workshops are planned in late November and December 2020 to explore issues with key stakeholders. Comments and suggestions are invited from members of the advisory group on issues they would like to see explored in the workshops.

Key Decision

7. No.

Recommendations

8. The Joint Local Planning Advisory Group (JLPAG) is recommended to:
 - a) note initial evidence findings and exploration of options to inform the stakeholder engagement;
 - b) comment on the approach to the stakeholder engagement and issues that should be considered through the workshops.

Reasons for Recommendations

9. Cambridge City Council and South Cambridgeshire District Council are preparing a joint Greater Cambridge Local Plan (Local Plan). In June 2020 members agreed to include this additional informal stage of stakeholder engagement, prior to the preferred options public consultation in 2021.
10. Identification and testing of options is an important part of the plan making process and publication of emerging evidence at this stage is intended to help inform the discussions around these options in workshops and amongst interested parties and communities. Evidence has been prepared exploring the growth and spatial options for the Local Plan and Members are asked to note the initial findings of the studies.

11. The workshops provide an opportunity to seek feedback and views on findings from a range of stakeholders. Members are asked to comment on the approach, and issues that should be considered.

Details

Background: The Greater Cambridge Local Plan

12. Both Councils adopted their current Local Plans in 2018. Both plans include a shared policy commitment to produce a joint Local Plan via an early review of those plans.
13. The engagement process for the Greater Cambridge Local Plan started in 2019 with an independent Lessons Learned and Good Practice Review, engaging with key stakeholders via structured discussions looking back at the previous Cambridge and South Cambridgeshire Local Plans in terms of processes and outcomes. In July and September 2019, Greater Cambridge Shared Planning Service held a series of Local Plan workshops across South Cambridgeshire and Cambridge.
14. In January and February 2020. The 'First Conversation' consultation explored important issues that will influence how the Local Plan is developed, giving people the opportunity to inform and shape its direction before it is drafted. Early findings of the consultation were reported to this advisory group in June 2020. Full results of the consultation have now been published on the Greater Cambridge Shared Planning website, including the results of the call for sites.
15. In June 2020 both Councils agreed an updated Local Development Scheme, which sets out the timetable for the preparation of the Local Plan. Members also agreed that there should be an additional stage of informal engagement in Autumn 2020. This would provide an opportunity to feedback and seek views from Members and stakeholders on key findings of a range of evidence that has been commissioned (e.g. Climate change, green infrastructure, water, transport, jobs and homes), the findings of the Sustainability Appraisal of strategic options, and what these mean for the strategy choices available. This would not be a full public consultation but a targeted stakeholder engagement, similar to the one carried out in summer 2019 that helped inform the subsequent First Conversation consultation. This would reflect the Councils' desire for engagement and transparency throughout the process of developing the preferred strategy for the Local Plan.
16. It was agreed that this additional stage would include:
 - A Joint Local Planning Advisory Group meeting to receive a report publishing key findings from the evidence work and testing of options, and the outcomes of the assessment of a range of growth levels and spatial strategy options.

- Stakeholder engagement workshops in November/December 2020 with a range of stakeholders, including members, parish councils and residents associations, statutory consultees and key interest groups, landowners, developers and planning agents, and businesses. Duty to cooperate meetings would also take place at this time.

Testing Strategic Options for the Local Plan

Introduction

17. This stage of plan making has involved a significant level of information, and a number of individual documents and studies. In order to draw all this information together a Summary Report has been produced, and this forms appendix A to this committee report. This section of the committee report provides a summary of the stage and the outcomes, but further information and detail can be found in the Summary Report itself, and the individual evidence documents.

The Purpose of this stage in the Plan Making Process

18. The purpose of this stage of plan making is to test the high level strategic spatial choices available to the Local Plan, and to enable additional stakeholder engagement. This will help inform the Councils' thinking as they move towards identifying a preferred option for consultation in 2021. It is important to note that at this stage the Councils have not reached any view on the preferred approach to the development strategy for the Local Plan.

Identifying Options for Testing – Growth Level Options

19. Three different growth level options have been identified, drawing on two key evidence studies, in order to test a range of scenarios:

- Greater Cambridge Employment Land Review & Economic Evidence Base Study (GL Hearn, with SQW, Cambridge Econometrics, and Icen Projects) (Reference document 2)
- Greater Cambridge Housing and Employment Relationships Report (GL Hearn with Icen Projects, Justin Gardner and Cambridge Econometrics) (Reference document 3)

20. National policy states that local plans should support the Government's objective of significantly boosting the supply of homes. It provides a Standard Method for calculating the minimum number of homes to plan for. National guidance also indicates that there will be circumstances where it is appropriate to consider whether actual housing need is higher than that derived from the Standard Method. Reference document 3 confirms the minimum number of homes under

the standard method and the jobs that would be supported by that level of growth have been calculated. This provides a Minimum growth level option.

21. The Greater Cambridge Employment Land Review and Economic Evidence Base Study (Reference document 2) has been commissioned in accordance with national objectives to consider an area’s economic growth potential and the continuing strength of the Greater Cambridge economy. The work uses recent and longer-term historic growth rates to forecast the future performance of the Greater Cambridge economy and key sectors within it. The evidence identifies what it considers to be realistic central and higher economic forecasts and also the Housing and Employment Relationships Report (Reference document 3) identifies the housing to support those jobs. These provide ‘medium’ and ‘maximum’ growth level options respectively.

Table 1 - Employment and housing growth level options for each scenario 2020-41 (rounded up to the nearest hundred)

Growth level option	Employment (jobs) - total	Employment (jobs) - per year	Housing (dwellings) - total	Housing (dwellings) - per year
Minimum	45,800	2,181	36,700	1,748
Medium	58,500	2,786	42,000	2,000
Maximum	78,700	3,748	56,500	2,690

Source: Greater Cambridge Local Plan Development Strategy Options – Summary Report: Table 1 (Greater Cambridge Planning Service) November 2020

22. Significant levels of development already have planning permission or are allocated in the adopted 2018 Local Plans, and will come forward during the period of the Greater Cambridge Local Plan. Together with current estimates for windfall development this amounts to 36,400 new homes currently anticipated to be developed between 2020 and 2041 based on currently anticipated build out rates. A further 8,700 homes on these existing sites, at new settlements, are anticipated to be built after 2041 based on currently anticipated build out rates. Delivery from the adopted plans will be reviewed carefully and the supply could change, including as a result of a review of windfalls. Nonetheless, this figure is considered a reasonable assumption for the testing of strategic options. Taking account of these commitments and windfalls, the balance of homes to plan for against each growth level option is set out below.

Table 2 - Residual Housing Growth requirements, 2020-41 (rounded up to the nearest hundred)

Growth level option	Total housing (including 10% buffer)	Development already in the pipeline (including windfalls)	Additional housing to be allocated on sites in the new Local Plan
Minimum	40,300	36,400	3,900
Medium	46,200	36,400	9,800
Maximum	62,700	36,400	26,300

Source: Greater Cambridge Local Plan Development Strategy Options – Summary Report: Table 3 (Greater Cambridge Planning Service) November 2020

23. The Greater Cambridge Employment Land Review and Economic Evidence Base Study (ELR) (reference document 2) identifies that there is already a large amount of committed employment land in Greater Cambridge. It provides commentary on this supply, and makes recommendations for the Local Plan regarding issues related to the quantity and quality of employment land in different locations. The ELR concludes that whilst less space may be needed to accommodate the jobs anticipated from lower growth options, it is important to maintain a flexible employment land supply, that can respond to change and the future needs of firms.

Identifying Options for Testing – Strategic Spatial Options

24. The ‘*Greater Cambridge Local Plan: First Conversation*’ set out six broad spatial choices available in the area for accommodating new development. Further work since then has identified two further options (options 7 and 8 below).

- 1: Focus on Densification of existing urban areas
- 2: Focus on Edge of Cambridge: outside Green Belt
- 3: Focus on Edge of Cambridge: Green Belt
- 4: Focus on New Settlements
- 5: Focus on Dispersal: Villages
- 6: Focus on Public transport corridors
- 7: Focus on Supporting a high-tech corridor by integrating homes and jobs (southern cluster)
- 8: Focus on Expanding a growth area around transport nodes (western cluster)

25. Green Belt is an important policy designation, plays an important role in maintaining the special qualities of Cambridge as an historic city and of the surrounding area. The Green Belt restricts growth on the edge of Cambridge, a location that the evidence indicates has sustainability advantages in terms of access to jobs and services and reducing trips by the private car that could help mitigate our climate impacts. National planning policy requires that local plans consider the impact on sustainable development of channelling growth outside the Green Belt. We have therefore included green belt options in the testing process. At the same time, changes in national policy also mean that alternatives have to be fully explored before land can be removed from the Green Belt. This will be an important issue for the Local Plan to address.

26. For each of the broad spatial choices, growth levels were assigned commensurate with the minimum, medium and maximum growth level options, taking account of existing commitments. This approach to the options testing stage is at a strategic level and is not at this stage considering -specific sites. Instead, the purpose is to highlight the impacts of the different choices, rather than test individual sites. Each strategic spatial option seeks to focus the housing as much as possible on the location described, but in order to meet the numbers, the higher growth level options have required inclusion of other areas in some cases. It is important to stress that the strategy in the preferred option may be a blend of sites from a number of the locations. The strategic spatial options are put together to highlight and test the impacts of different choices, rather than provide a list of mutually exclusive options to pick the preferred option from. Further information on how the options were identified can be found in the strategic spatial options for testing – methodology document (Reference document 1)

Testing the Strategic Options

27. The Local Plan is being informed by a wide range of evidence and studies. The studies commissioned by the Councils cover important topics such as climate change, green infrastructure, water, housing delivery and transport. Whilst many of these studies are still progressing, the consultants were asked to consider and provide interim reports on the opportunities and challenges relating to the identified growth and spatial options. The following interim studies are being reported (grouped around the big themes identified in the First Conversation consultation):

- **Climate change:** Net Zero Carbon Study and Integrated Water Management Study
- **Biodiversity and Green Spaces:** Green Infrastructure Study and Habitats Regulations Assessment
- **Wellbeing and Inequality:** Equalities Impact Assessment
- **Great Places:** Landscape Character Assessment
- **Homes:** Housing Delivery Study
- **Jobs:** Employment Land Review
- **Infrastructure:** Transport Study, Infrastructure Delivery Plan, Viability Study

28. These interim studies are all published as appendices to this report.

29. It must be emphasised that no conclusions have been reached regarding the options at this stage.

Findings regarding the growth level options

30. Whilst the range of studies provide information regarding the opportunities and challenges related to the levels of growth and spatial choices, two studies stand out regarding their conclusions on the scale of growth.

Water

31. The Councils recognise that the water environment is an important issue for local communities. Reflecting this, an Integrated Water Management Study (Reference document 5) has been commissioned to inform the Local Plan, along with an independent expert review of it. The study identifies that the current level of water abstraction from the chalk aquifer is widely believed to be unsustainable for the Greater Cambridge area, with potential to cause environmental damage. Abstraction rates may need to be reduced significantly to safeguard natural river flow.

32. On that basis, the study concludes that there is no environmental capacity to increase groundwater abstraction from the chalk aquifer to supply the additional growth being tested for the new Local Plan. Whilst therefore existing Local Plan commitments can be accommodated, future water demand and supply for additional new sites will need to be balanced by a range of measures in other ways, including greater water efficiency in new developments, along with measures by the water companies such as reducing leakages and shifting to more sustainable water sources, to ensure no additional detrimental environmental impact from future growth. Longer term solutions will include major new regional water supply reservoirs and transfer schemes, already being planned and coordinated by Water Resources East, and anticipated to be operational from the mid-2030s.

33. Through such measures the current planned growth in the existing Local Plans, and the additional minimum growth option being tested for the new Local Plan are capable of being accommodated.

34. Current water supply constraints may not be absolute barriers to achieving medium or highest growth levels being tested for the new Local Plan, but they will not be achieved through 'business as usual'. Significant support from central government, financially and structurally, will most likely be required to develop new strategic supply options and infrastructure at regional scale (such as more rapid construction of new water supply reservoirs and transfer schemes).

35. Unless delivery could be achieved more quickly than normal processes would provide, these major infrastructure schemes will take time to implement, and this could result in the maximum growth level that has been tested not being achievable within the period of the new Plan.

Housing Delivery

36. A Housing Delivery Study Interim Findings report (reference document 11) has been commissioned to consider the deliverability of different strategy options, and to inform how the Local Plan can help to maintain an appropriate housing land supply. Based on the interim findings to date, the maximum growth levels are unlikely to be deliverable in practice based on current market conditions and the UK housing market's traditional routes to delivery. A higher annual housing requirement than the medium option may be achievable, but the report says it is not possible to advise on what level of growth may be deliverable at this stage in advance of more detailed testing and engagement with the development industry.

Findings Regarding the Spatial Choices related to the big themes

Climate change

37. The Greater Cambridge Local Plan strategic spatial options assessment: Implications for carbon emissions report (Reference document 4) is clear that while it is possible to mitigate carbon from new buildings with higher efficiency standards and renewables, the carbon emissions from transport are more significant with regard to the location and distribution of growth. Locations which promote active transport modes and public transport use will generate lower additional carbon.

38. Adapting to climate change will also be important. The Integrated Water Management Study (Reference document 5) highlights the need to respond to flood risk. Some spatial choices allow more flexibility in how to do this, but it does not rule any out at this stage.

Biodiversity and Green Spaces

39. The Greater Cambridge Green Infrastructure Opportunity Mapping Baseline Report (Reference document 6) is being developed to identify specific and deliverable opportunities to enhance and expand the Green Infrastructure network. The Review of Strategic Spatial Options in relation to Green Infrastructure (Reference document 7) considers the strategic spatial options. There are recognised pressures from development on existing green infrastructure in or close to existing settlements; and smaller sites are more likely to have challenges in responding to larger-scale green infrastructure needs. Options involving larger-scale developments are more likely to provide a greater critical mass to respond effectively to green infrastructure needs. The strategic spatial options have also been subject to Habitats Directive Assessment (Reference document 8), which highlights issues that will need to be considered as the preferred option for the Local plan is developed.

Wellbeing and Inequality

40. The Greater Cambridge Local Plan strategic spatial options assessment: Equality Impact Assessment (EqIA) (Reference document 9) highlights issues related to the scale and location of growth, and the importance of access to services and facilities, a variety of employment opportunities, and appropriate housing. The availability of travel choices is identified as an important issue.

Great Places

41. The Landscape and Townscape Considerations study (Reference document 10) highlights that all of the strategic spatial options would result in changes, both negative and positive, in terms of conserving and enhancing the character of Greater Cambridge's landscapes and townscapes. The Fens, Chalk Hills and River Valleys have sensitive landscape characteristics that are likely to be particularly vulnerable/susceptible to urban development. This may present constraints for higher growth scenarios associated with spatial options in these landscapes. The smaller historic villages and their landscape settings have sensitive townscape/landscape characteristics that are likely to be particularly vulnerable to change. This may present constraints for higher growth scenarios associated with spatial options focused on the dispersal of growth to existing villages. The historic townscape character and landscape setting of Cambridge is particularly vulnerable to change. This may present constraints for higher growth scenarios associated with spatial options focused on densification of the city and the edge of Cambridge.

Homes

42. Beyond its conclusions regarding the overall levels of growth (see paragraph 36), the Housing Delivery Study Interim Findings (reference Document 11) looks at the opportunities and challenges of each spatial option. Options that mix short-medium term sources of supply (smaller sites in urban areas and villages) with longer-term sources (new settlements, urban extensions and Green Belt release) are better-able to deliver across the plan period.

43. The preparation of a new local plan that involves a significant uplift in the annual housing figure inevitably results in a delay to delivering at that higher rate while the plan is being prepared and examined, incorporating additional allocations that will enable delivery of the higher figure, inherently creating a shortfall at the time of adoption. The scale of the shortfall created by the significantly higher annual housing requirement results in a challenging five-year housing land supply requirement. The Councils would therefore need to pursue either a stepped annual housing requirement over the plan period or the use of the Liverpool method for calculating their five year supply for the majority of the spatial options to be able to demonstrate a five year housing land supply at plan adoption. A stepped trajectory could also be considered, with higher rates in the later part of the plan period responding to the time it could take to increase rates, or challenges such as the water supply issues.

Jobs

44. The Employment Land Review and Economic Evidence Base study (Reference document 2) considers future employment land supply in Greater Cambridge. Much of the future employment needs of the area are likely to be met from committed sites, but it recommends a range of qualitative and quantitative issues to be addressed by the new local plan. The Greater Cambridge Local Plan Spatial Options Appraisal: Employment (Reference document 12) report considers how the strategic spatial options being tested respond to those issues, identifying a range of opportunities and challenges with regard employment provision and access to jobs.

Infrastructure

45. The Transport Existing Conditions Report (Reference document 13) provides evidence of current transport conditions as a basis for modelling the effects of future growth on transport outcomes, the results of which are set out in a separate Transport Evidence Report (Reference document 14). This provides an initial phase of modelling for each of the strategic spatial options and gives a comparison of the impacts of each spatial option, for measures such as vehicle kilometres and mode share. This has been carried out for the maximum growth level options to understand the greatest potential impacts. The report compares this with a baseline run for 2041 that includes a range of committed transport infrastructure schemes for which completion can be assumed by 2041. A range of sensitivity tests are being carried out, including to consider the impacts of Cambridge Autonomous Metro (CAM) and East West Rail and of the minimum and medium growth level options, but these are not included in this initial version of the report. The report will be updated as the Local Plan progresses. The best performing options in transport terms were, the densification option (option 1), which performed best, along with the focus in the Integrating jobs and homes in a southern cluster option (option 7) on co-locating homes and jobs. At the other end of the spectrum, the dispersed village option (option 5) showed the highest car mode share and vehicle kilometres travelled.
46. The Infrastructure Delivery Plan - Greater Cambridge Local Plan strategic spatial options assessment (Reference document 15) explores the measures that would be needed to support and deliver the options. Higher growth level options would require more significant levels of infrastructure to support them, including transport infrastructure. Developments which would create a sufficient critical mass to fund and deliver significant new or enhanced infrastructure are more likely to be able to achieve delivery than options which include smaller more dispersed developments. The Viability Study (Reference document 16) is at an early stage. Whilst it currently indicates that all spatial options are viable, site-specific development costs, and emerging policy costs, will need to be fed in as the preferred option is developed.

Sustainability Appraisal

47. The identification, testing and comparison of reasonable options through as Sustainability Appraisal (SA) is a key part of plan making. A Sustainability Appraisal (Reference document 17) has been produced which provides a comprehensive assessment of the identified growth and spatial alternatives.
48. The SA process tests each option against a set of sustainability objectives, which respond to environmental, economic and social issues. This results in a large amount of information being captured in tables. In order to make the information more accessible, we have been working with consultants to develop new graphics to display the testing of each option.
49. The findings of the SA highlight the pros and cons of each option. The best performing options are those which densify or locate growth next to existing urban areas. Options involving new settlements perform well when supported by sustainable transport opportunities, and when they grow to a sufficient scale to support access to local services and facilities. Options dispersing significant levels of growth to a large number of villages performed least well.

Uncertainties

50. There are other issues that are likely to have a bearing on the preparation of the Local Plan. These include the potentially prolonged economic uncertainty as a result of the Covid-19 pandemic and the UK's decision to leave the European Union. We will continue to update the evidence base as the plan is developed. National planning reforms, if implemented, would also have significant implications for the preparation and content of local plans.

Stakeholder engagement workshops

51. The evidence in this report has been prepared to inform stakeholder engagement during winter 2020. This will not be a full public consultation, but a targeted engagement, similar to that carried out in summer 2019 which helped inform the First Conversation consultation.

Approach to the workshops

52. The stakeholder engagement workshops will be held in November/December 2020 with a range of participants, including: council members, parish councils and residents associations, statutory consultees and key interest groups, landowners, developers and planning agents, and businesses. Engagement will also involve statutory consultees and Duty to Cooperate bodies. We are also holding a public webinar to enable members of the public to ask questions. Due to Covid-19 restrictions, and unlike in 2019, these events will be hosted on-line.

53. The workshops will provide an opportunity to feedback, and seek views on, the findings of the evidence, and to explore the issues and how they relate to the strategy choices available.
54. At each workshop officers will present findings and assessments to date. In doing so we will make clear that no final conclusions have been reached, and the evidence base for the plan is still being developed.
55. Breakout groups will be used to explore some meaningful questions around the key issues, and challenges facing the plan, for example:
- Density vs land take
 - Relationship of employment growth to housing growth
 - Providing a variety of homes while meeting net zero challenge
 - Paradox of village sustainability – jobs/homes/services vs transport/carbon
 - Green Belt vs beyond the Green Belt.
56. Members of the Joint Local Plan Advisory Group may wish to comment and provide feedback on particular issues they would like to see explored through the workshops.
57. The results and feedback will be documented in the Local Plan Statement of Consultation, which will accompany the preferred options consultation next year.

Next Steps – Preferred Option public consultation

58. The evidence currently being reported represents an interim stage. The studies will continue to be developed as we move towards a Local Plan Preferred Option. A wider range of other issues are being explored to inform the Local Plan. The Housing and Employment Land Availability Assessment is identifying and testing specific site options, including those submitted through the call for sites in 2019 and as part of The First Conversation consultation earlier this year. Work is underway to explore the housing needs of specific groups, including Gypsies and Travellers. Issue-specific topic papers and evidence documents will be supporting other policy areas that need to be addressed by the Local Plan, including taking account of feedback and responses received through the First Conversation consultation.
59. The Local Plan Preferred Options public consultation is scheduled for Summer / Autumn 2021. This will enable public consultation on the emerging preferred approach to be undertaken, and for the responses to be considered before detailed policies are drafted. It would include an explanation of the options tested and how they have been assessed to identify proposed preferred options. It will allow the emerging preferred approach to be tested with the public and wider interests prior to confirming the preferred strategy for the Local Plan and the drafting of detailed policy wording in a full draft Local Plan. It will also address other options that have been considered but not taken forward and the reasons why they are proposed to be rejected.

Options

60. JLPAG members are invited to note the evidence findings, and provide feedback on the approach to the workshops, reflecting the approach agreed by both Councils in June.

Implications

61. In the writing of this report, taking into account financial, legal, staffing, risk, equality and diversity, climate change, and any other key issues, the following implications have been considered:-

Financial

62. Currently anticipated to be within current budgets. This will be kept under review alongside other work priorities

Legal

63. The review of the Local Plan process has been prepared with a view to ensure a legally compliant plan that is capable of being found sound at examination.

Staffing

64. Currently anticipated to be delivered within our existing budgets. This will be kept under review alongside other work priorities.

Risks/Opportunities

65. The Local Plan is a key corporate priority and will be monitored against the timetable to be set out in the Local Development Scheme.

Equality and Diversity

66. Equalities Impact Assessment (EQIA) is one of the evidence bases put together to test the strategic options. This highlights issues relating to the different spatial choices. EQIA will be carried out at each stage of plan making.

Climate Change

67. The Local Plan provides an opportunity to address the aspects of the environment that can be influenced by the planning system. As set out in this report, climate change is being considered by a range of evidence informing the plan. One of the big themes for the plan identified in 'The First Conversation' is climate change.

Consultation responses

68. None.

Background Papers

Documents related to the Greater Cambridge Local Plan are available to view on the Local Plan webpage at:

www.greatercambridgeplanning.org

Appendices

Appendix A: Greater Cambridge Local Plan Development Strategy Options – Summary Report (Greater Cambridge Planning Service) November 2020

Reference Documents referred to in Appendix A:

- o Reference document 1: Greater Cambridge Local Plan: strategic spatial options for testing – methodology document - (Greater Cambridge Planning Service) November 2020
- o Reference document 2: Greater Cambridge Employment Land Review & Economic Evidence Base Study (GL Hearn, with SQW, Cambridge Econometrics, and Icen Projects) November 2020
- o Reference document 3: Greater Cambridge Housing and Employment Relationships Report (GL Hearn with Icen Projects, Justin Gardner and Cambridge Econometrics) November 2020
- o Reference document 4: Greater Cambridge Local Plan strategic spatial options assessment: Implications for carbon emissions (Bioregional and Etude) November 2020
- o Reference document 5: Greater Cambridge Local Plan strategic spatial options assessment: Integrated Water Management Study (Stantec) November 2020

- o Reference document 6: Greater Cambridge Green Infrastructure Opportunity Mapping Baseline Report (LUC) November 2020
- o Reference Document 7: Greater Cambridge Local Plan strategic spatial options assessment: Green Infrastructure Opportunity Mapping (LUC) November 2020
- o Reference document 8: Greater Cambridge Local Plan strategic spatial options assessment: Habitats Regulations Assessment (LUC) November 2020
- o Reference document 9: Greater Cambridge Local Plan strategic spatial options assessment: Equality Impact Assessment (EqIA) - (Greater Cambridge Planning Service) November 2020
- o Reference document 10: Greater Cambridge Local Plan strategic spatial options assessment: Landscape & Townscape (Chris Blandford Associates) November 2020
- o Reference document 11: Greater Cambridge Local Plan strategic spatial options assessment: Housing Delivery Study – Interim Findings (AECOM) November 2020
- o Reference document 12: Greater Cambridge Local Plan Strategic Spatial Options assessment: Employment (GL Hearn, with SQW, Cambridge Econometrics, and Icen Projects) November 2020
- o Reference document 13: Greater Cambridge Local Plan Transport Existing Conditions Report (Cambridgeshire County Council Transport Infrastructure Policy and Funding Team) November 2020
- o Reference document 14: Greater Cambridge Local Plan Transport Evidence Report (Cambridgeshire County Council Transport Infrastructure Policy and Funding Team) November 2020
- o Reference document 15: Infrastructure Delivery Plan - Greater Cambridge Local Plan strategic spatial options assessment' (Stantec) November 2020
- o Reference document 16: Greater Cambridge Local Plan strategic spatial options assessment: Viability Assessment (Aspinall Verdi) November 2020
- o Reference document 17: Greater Cambridge Local Plan strategic spatial options assessment: Sustainability Appraisal (LUC) November 2020

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Greater Cambridge Local Plan

Development Strategy Options – Summary Report

November 2020

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Executive Summary

This report brings together the findings from an initial stage of work to develop the evidence base and test growth and spatial options for the Greater Cambridge Local Plan. The Greater Cambridge Local Plan is the emerging joint Local Plan for the Cambridge City and South Cambridgeshire District Councils covering the period up to 2041.

The work covered by this report follows on from the ‘First Conversation’ consultation held in early 2020 and is an important stage towards the identification of a ‘preferred option’ for the Local Plan.

This stage of work has involved:

- Commissioning specialist consultants to gather and analyse a range of baseline data and evidence about the Greater Cambridge area;
- Calculating the minimum requirement for new housing according to national government’s ‘standard method’ and the jobs it would support, translated into a minimum growth level option;
- Forecasting future economic growth in Greater Cambridge, with particular focus on the sectors that the area excels in as well as past trends of economic growth, resulting in central and higher growth scenarios, translated into medium and maximum growth level options;
- Calculating what the housing levels would be to support those medium and maximum levels of forecast economic growth;
- Identifying a range of possible broad locations for new development, illustrating deliberately diverse approaches, from locating all development in Cambridge itself, to locating all development in our rural villages;
- Testing the possible growth levels across each of the different locations to understand how well they perform in relation to the themes and objectives of the Plan.

At this stage the Councils have not reached any view on the preferred approach for the new Local Plan. The interim evidence studies and other evidence to be prepared will continue and feed into the next steps to develop the preferred approach in terms of the level of growth to plan for, and where development should be located, including the sites that should be chosen. Further information about the plan-making process can be found in section 2 of this report.

Baseline evidence

The following baseline evidence has been gathered to date, and is published alongside this report:

- Greater Cambridge Local Plan Transport Evidence, and baseline report (Cambridgeshire County Council Transport Infrastructure Policy and Funding Team)
- Greater Cambridge Green Infrastructure Opportunity Mapping Baseline Report (LUC)

Identifying growth level options and strategic spatial options

Three different levels of growth have been identified, drawing on two key evidence studies, in order to test a range of options:

- Greater Cambridge Employment Land Review & Economic Evidence Base Study (GL Hearn, with SQW, Cambridge Econometrics, and Icen Projects)
- Greater Cambridge Housing and Employment Relationships Report (GL Hearn with Icen Projects, Justin Gardner and Cambridge Econometrics)

These are based on the government’s standard method for calculating housing need (‘minimum’ growth level option) and economic forecasts resulting in central and higher growth scenarios, and their associated housing, which provide ‘medium’ and ‘maximum’ growth level options.

The employment and housing growth levels for each growth level option are shown below:

Growth level option	Employment (jobs) - total	Employment (jobs) - per year	Housing (dwellings) - total	Housing (dwellings) - per year
Minimum	45,800	2,181	36,700	1,748
Medium	58,500	2,786	42,000	2,000
Maximum	78,700	3,748	56,500	2,690

We are required to ensure a flexible Local Plan that can adapt to rapid change. We have therefore applied a 10% buffer to the housing figures included in the table above, resulting in the housing under each growth level option shown below:

Growth level option	Total housing (including 10% buffer)	Development already in the pipeline (including windfalls)	Additional housing to be allocated on sites in the new Local Plan
Minimum	40,300	36,400	3,900
Medium	46,200	36,400	9,800
Maximum	62,700	36,400	26,300

This would average between 180-1,250 additional homes per year above the current supply.

Further information about how these growth level options were developed can be found in section 3 of this report.

Six options for the broad location of development were included in the First Conversation consultation. We reviewed these in light of the responses to the consultation as well as undertaking an assessment of other potential approaches relevant to Greater Cambridge’s geography:

- The Greater Cambridge Local Plan: strategic spatial options for testing – methodology document - (Greater Cambridge Planning Service) November 2020

This assessment resulted in the identification of two further potential approaches to locating development. This resulted in eight strategic spatial options being developed further for testing:

1. **Densification of existing urban areas.** This approach tests the implications of focusing new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area in Option 1 is at North East Cambridge.
2. **Edge of Cambridge – Outside Green Belt.** This approach tests the implications of delivering new homes and jobs in extensions on the edge of Cambridge, using land not in the Green Belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport (safeguarded land in

the 2018 Local Plans), so this is tested as the primary location for development.

3. **Edge of Cambridge – Green Belt.** This approach tests the implications of developing new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.
4. **New Settlements.** This approach tests the implications of focusing new development in new towns or villages which would include homes, jobs and supporting infrastructure. These would need to be connected to Cambridge by strategic transport infrastructure.
5. **Villages.** This approach tests the implications of spreading new homes and jobs out to the villages, with different amounts of growth dependent on the sustainability of the village in question.
6. **Public Transport Corridors.** This approach tests the implications of locating new homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.
7. **Integrating jobs and homes – southern cluster.** This approach tests the implications of focusing new development close to existing and committed employment sites within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.
8. **Growth around public transport nodes – western cluster.** This approach tests the implications of locating new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

Each of the three growth level options were applied to each of the eight broad spatial locations, resulting in a set of 24 strategic spatial options for testing. These strategic spatial options focus on key locations to draw out the differences in impacts. Where a growth level option could not be achieved only within the focus of the option, other broad locations have been included to make up the numbers. In reality, the Local Plan could take elements from a number of different broad locations. The development of the strategic spatial options is summarised in Section 4 of this report and further detail can be found in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document published alongside this report.

Testing the strategic spatial options

Each of the 24 strategic spatial options has been assessed to understand its opportunities and challenges across the ‘big themes’ that have been identified for the Plan. Specialists on a range of topics relating to these themes, including those commissioned to gather baseline evidence, were commissioned to assess the

options impartially. Their findings have been published individually alongside this report, which draws together the findings from across the suite of studies. The studies now published in relation to each theme are:

- **Climate change:**
 - Greater Cambridge Local Plan strategic spatial options assessment: implications for carbon emissions (Bioregional and Etude)
 - Greater Cambridge Local Plan strategic spatial options assessment: Integrated Water Management Study (Stantec) – peer reviewed by Dr Geoff Parkin.

- **Biodiversity and green spaces:**
 - Greater Cambridge Local Plan strategic spatial options assessment: Green Infrastructure (LUC)
 - Greater Cambridge Local Plan strategic spatial options assessment: Habitats Regulations Assessment (LUC)

- **Wellbeing and social inclusion**
 - Greater Cambridge Local Plan strategic spatial options assessment: Equalities Impact Assessment (Greater Cambridge Planning Service)

- **Great places:**
 - Greater Cambridge Local Plan strategic spatial options assessment: Landscape & Townscape Considerations (Chris Blandford Associates)

- **Homes**
 - Greater Cambridge Local Plan strategic spatial options assessment: Housing Delivery Study – Interim Findings (AECOM)

- **Jobs:**
 - Greater Cambridge Local Plan Spatial Options Appraisal: Employment (GL Hearn, with SQW, Cambridge Econometrics, and Icen Projects)

- **Infrastructure:**
 - Greater Cambridge Local Plan strategic spatial options assessment: Transport Evidence report (Cambridgeshire County Council Transport Policy Infrastructure and Funding Team)
 - Greater Cambridge Local Plan strategic spatial options assessment: Infrastructure Delivery Plan (Stantec)
 - Greater Cambridge Local Plan strategic spatial options assessment: Viability Assessment (Aspinall Verdi)

The findings should be considered interim and for a number of the topics covered it is not possible at this stage to draw firm conclusions, because this would be dependent on the actual sites chosen for each broad location, and at this stage the spatial options do not, in the main, identify actual sites for testing. Other evidence studies have been commissioned and are not yet complete – these will be published in due course. This includes a study looking at heritage impacts in more detail.

For Local Plans, the identification and subsequent testing of strategic development options through a Sustainability Appraisal is a central requirement of legislation and national policy. Councils must ensure that all reasonable alternatives have been identified; and that they are reasonable, realistic and relevant, taking into account the objectives and the geographical scope of the plan. In order to achieve this, during this stage of plan preparation a full range of growth and spatial alternatives have been developed and explored. An interim Sustainability Appraisal has been produced which brings together a comprehensive assessment in line with planning regulations.

- Greater Cambridge Local Plan strategic spatial options assessment: Interim Sustainability Appraisal of Strategic Spatial Options (LUC)

This report summarises the key findings of each study in relation to each growth and spatial option in section 5. Section 6 presents the key findings for each spatial option, and how this would vary under the minimum, medium and maximum growth level options.

Key findings

Section 7 of this report sets out the key findings and emerging issues and themes from the overall testing process. These are presented neutrally without any value judgements about the overall performance of the various options. This is important to avoid prejudging the outcomes of the continuing work to gather further evidence and to develop a preferred strategy for the new Local Plan.

- Most of the topic-based studies find that the minimum growth level option for most spatial options will have more limited challenges than the medium and higher growth level options.
- The minimum level of housing growth required under the government's standard method will not support the growth in jobs in the area that our economic evidence forecasts, which reflects the particular strengths of the Greater Cambridge economy.
- There are likely to be significant constraints with regard to water supply and housing delivery at the maximum level of growth identified.

- The relevant evidence finds, however, that these may not absolute barriers to achieving the highest growth levels tested, but rather that they cannot be achieved through ‘business as usual’. Significant strategic interventions would be needed in both instances to have confidence that these currently unprecedented levels of growth are achievable.
- There is an explicit relationship between the testing outcomes for transport modes and the extent of carbon emissions. Transport is the greatest source of carbon emissions and, therefore, the location and distribution of growth is important in this regard. Initial modelling suggests that some clear conclusions can be drawn with regard to the best performing options with low car mode share or high levels of active travel because of their proximity to Cambridge.
- Proximity to Cambridge has a bearing on a range of other issues as well, including access to primary employment markets and pressures on existing infrastructure. For options that might locate development outside the city the importance of sustainable travel options is significant; as is self-containment through, for example, locating homes and jobs together.

Uncertainties

There are other issues that are likely to have a bearing on the preparation of the Greater Cambridge Local Plan.

The potentially prolonged economic uncertainty as a result of the Covid-19 pandemic and the UK’s decision to leave the European Union could have impacts on the economy. It is too early for our evidence base to understand these impacts, and we will need to keep our evidence under review as the local plan is prepared.

National planning reforms proposed in the Planning for the Future White Paper, if implemented, would also have significant implications for the preparation and content of Local Plans.

1. Introduction

- 1.1 This report brings together the outcomes of work to develop, refine and test growth and spatial options identified by Cambridge City and South Cambridgeshire District Councils to inform the Greater Cambridge Local Plan. This follows on from the Issues and Options consultation (held in January and February 2020) – ‘The First Conversation’ - and is an important stage towards the identification of a ‘Preferred Option’ for the Local Plan development strategy. This in turn will inform draft site allocations for inclusion in the Plan. The Preferred Option will be published for consultation in summer/autumn 2021.
- 1.2 The report provides an overview of the approach used to identify the growth level options and the non-site specific spatial options. Consultation responses to ‘The First Conversation’, alongside a review of a wide range of other evidence sources, have helped to refine the spatial options to ensure that all reasonable options are identified. The Councils must be able to actively demonstrate that a robust and transparent process has been followed for identifying and testing strategic options, following the requirements of relevant legislation and national guidance, as well as local objectives.
- 1.3 A number of evidence studies have been commissioned to ensure that the options are tested rigorously to identify the opportunities and constraints associated with each one. These studies cover a number of important topics such as climate change, green infrastructure, water, housing delivery and transport. Sustainability Appraisal of the options has a central role in the testing process of their environmental, social and economic impacts. A summary of this evidence and the testing process is provided in this report, which then presents an analysis of the outcomes of the testing stage and presents some key findings for further consideration.
- 1.4 This report is intended to be read alongside the Sustainability Appraisal (reference document 17) as part of a comprehensive approach to understanding the issues and implications arising from the strategic options that have been developed and tested to date. This report does not form part of the Sustainability Appraisal, and should not be regarded as a substitute for it, nor does it seek to replace the purpose/function of the Sustainability Appraisal in the plan making process.
- 1.5 It is important to note that much of the evidence is at an interim stage and evidence gathering and analysis is ongoing. As such, the evidence may be subject to further change and so the findings in this report should be treated as interim before the supporting evidence is finalised.

- 1.6 Informal Member and stakeholder engagement will take place before the end of this year on the outcomes of this options assessment to date. This will provide an opportunity to seek views on key findings of the range of evidence that has been commissioned, the findings of the Sustainability Appraisal of strategic options, and what these mean for the strategy choices available. This will help inform the Councils' thinking as they move towards identifying a preferred option for consultation. At this stage the Councils have not reached any view on the preferred approach for the new Local Plan.

- 1.7 This report is intended to aid the engagement process by summarising work to date and, in particular, providing an overview of the testing of strategic options and analysis of the emerging issues and implications.

2. Overview of the Plan-Making Process

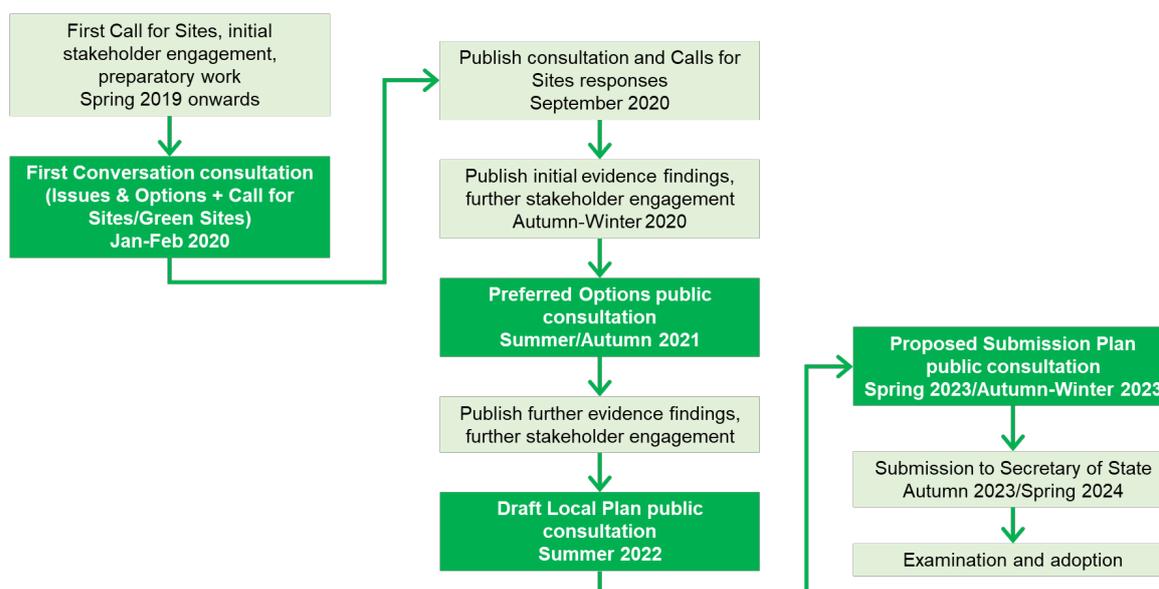
2.1 The Local Plan process to date

2.1.1 Through the City Deal with Government in June 2014, Cambridge City Council and South Cambridgeshire District Council committed to develop a joint Local Plan for the Greater Cambridge area. The engagement process for the new plan started last year with an independent Lessons Learned and Good Practice review, engaging with key stakeholders via structured discussions looking back at the preparation of the adopted 2018 Cambridge and South Cambridgeshire Local Plans in terms of processes and outcomes. In addition, in July and September 2019, Greater Cambridge Shared Planning Service held a series of Local Plan workshops.

2.1.2 This early engagement informed preparation of an issues and options public consultation, which ran for six weeks in January and February 2020. ‘The First Conversation’ consultation explored important issues that have and will influence how the Local Plan is developed, giving people the opportunity to inform and shape its direction before it is drafted. A large volume of responses and comments were received; initial headlines from the consultation responses were reported to both Councils’ Members in June this year and they were published in full in September.

2.1.3 Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft site allocations for homes and jobs. The process of Local Plan preparation is set out below.

Process of Local Plan preparation



2.2 Plan-making requirements: the need to test reasonable options

- 2.2.1 The National Planning Policy Framework (NPPF) defines the purpose of the planning system as contributing to the achievement of sustainable development. For Local Plans the identification and subsequent testing of strategic development options through a Sustainability Appraisal is a central requirement of legislation and national policy.
- 2.2.2 Councils must ensure that all reasonable alternatives have been identified and considered; and that all such strategic options identified are reasonable, realistic and relevant, and take into account the objectives and the geographical scope of the plan.
- 2.2.3 The Climate Act 2008 is of particular significance to preparation of the Greater Cambridge Local Plan. Due to amendments in 2019, this now includes a target of net zero carbon emissions by 2050. The implications of the Act are that a key part of Local Plan options testing will be to consider their impact on carbon emissions and climate change, and to understand the role of the options in responding to the journey towards zero carbon by 2050. Both Councils have declared a climate emergency in response to the significance of climate change as a global issue.
- 2.2.4 Taking account of this requirement and other strategic issues, ‘The First Conversation’ consultation identified four big themes that will influence how homes, jobs and infrastructure are planned. These drew on the feedback the Councils received from Councillors, communities and businesses while preparing the document. The ‘Greater Cambridge Local Plan First Conversation, Call for Sites and Call for Green Sites Data Report’ highlights that most respondents agreed with the big themes, with 52% either agreeing or strongly agreeing overall.
- 2.2.5 The big themes are:
- **Climate change** – how the plan should contribute to achieving net zero carbon, and the mitigation and adaptation measures that should be required through developments.
 - **Biodiversity and green spaces** – how the plan can contribute to our ‘doubling nature’ vision, the improvement of existing, and the creation of new, green spaces.
 - **Wellbeing and social inclusion** – how the plan can help spread the benefits of growth, helping to create healthy and inclusive communities.

- **Great places** – how the plan can protect what is already great about the area, and design new developments to create special places and spaces.

2.2.6 In addition, broad spatial choices of where to locate new development were identified as reasonable options for the initial consultation. These drew on the development strategy options considered for the Councils' adopted Local Plans and took account of spatial options identified in the recent Cambridgeshire & Peterborough Independent Economic Review (CPIER), as well as other approaches taken nationally.

2.2.7 The six high level spatial choices were:

- Densification of existing urban areas
- Edge of Cambridge - outside the Green Belt
- Edge of Cambridge - Green Belt
- Dispersal - new settlements
- Dispersal - villages
- Public transport corridors

2.2.8 'The First Conversation' consultation acknowledged that the best strategy could potentially involve some growth in all of these locations, but in different proportions depending upon the prioritisation of the themes in the plan. The intention of these options was to test the main choices available, acknowledging that the final preferred strategy may represent a hybrid of these.

2.2.9 Green Belt is an important policy designation, plays an important role in maintaining the special qualities of Cambridge as an historic city and of the surrounding area. However, the Green Belt also restricts growth on the edge of Cambridge, a location that has sustainability advantages in terms of access to jobs and services and reducing trips by the private car that could help mitigate our climate impacts. National planning policy requires that local plans consider the impact on sustainable development of channelling growth outside the Green Belt. We have therefore included green belt options in the testing process. At the same time, recent changes in national policy also mean that alternatives have to be fully explored before land can be removed from the Green Belt. This will be an important issue for the plan.

2.2.10 Building on the initial options set out in 'The First Conversation', the Councils have identified three growth level options for homes and jobs, and eight strategic (non-site specific) spatial options for testing. The following sections provide an overview of how the strategic options were developed and tested.

3. Growth Level Options for Testing

3.1 National Policy

3.1.1 Description of the options and detailed explanation of how they were developed is provided in The Greater Cambridge Local Plan: strategic spatial options for testing – methodology document (see reference document 1). The following two sections provide an overview of the approach and the main issues.

3.1.2 National planning policy in the NPPF requires that evidence on growth levels should:

- identify the objectively assessed needs for housing and other uses;
- be up to date, taking into account market signals;
- consider economic growth potential; and
- consider the role of key sectors and clusters in driving potential future growth.

3.1.3 In addition, national policy says that Local Plans should support the Government’s objective of significantly boosting the supply of homes, by enabling a sufficient amount and variety of land to come forward where it is needed. Plans should provide, as a minimum, the number of homes informed by a local housing need assessment, conducted using the standard method in national planning guidance – unless exceptional circumstances justify an alternative approach which also reflects current and future demographic trends and market signals. Account should be taken of any unmet needs arising from neighbouring areas.

3.2 Identifying reasonable growth level options

3.2.1 The nationally set standard method provides the basis for the Councils’ minimum housing need. Currently, this amounts to 1,743 additional homes a year. This has been set as the minimum growth level option as it is the minimum number of additional homes that the Local Plan must cater for. Work has been undertaken to identify the total number of jobs and related employment land needed to correspond with this level of additional housing growth.

3.2.2 National guidance indicates that there will be circumstances where it is appropriate to consider whether actual housing need is higher than that

derived from the standard method. None of the examples provided¹ are directly applicable to circumstances in Greater Cambridge. However, in accordance with national objectives to consider an area's economic growth potential, the continuing strength of the Greater Cambridge economy as evidenced in the CPIER provides justification for exploring higher employment and related housing figures. A key aim for the Cambridgeshire and Peterborough Combined Authority is that economic output will double over the next 25 years, with an uplift in GVA from £22bn to over £40bn².

- 3.2.3 The Greater Cambridge Employment Land Review & Economic Evidence Base Study considered a range of approaches to identifying employment futures for Greater Cambridge, drawing on the available historic employment data. At this point in time the report has not considered the economic impacts of the Covid-19 pandemic. This evidence base will be kept under review including in relation to the impacts of Covid19.
- 3.2.4 The assessment included consideration of data informing the CPIER. The CPIER's future employment forecast was not used directly as an option because it provides an aggregated view of the whole Cambridgeshire & Peterborough economy, rather than a sector-by-sector view at a Greater Cambridge level.
- 3.2.5 The approach followed in the Councils' Employment Land Review & Economic Evidence Base Study is based on consideration of realistic employment forecasts for Greater Cambridge that would take account of the continued fast economic growth seen in recent years. The work uses recent and longer-term historic growth rates to forecast the future performance of the Greater Cambridge economy and key sectors within it. These key sectors have been identified through an examination of which parts of the economy have driven growth in the recent past. The findings of this work set out a range of employment forecasts, with the upper level – 'higher' - outcome placing greater weight on fast growth in the recent past, particularly in key sectors, and the lower level – 'central' – outcome considered the most likely, taking into account long term patterns of employment.
- 3.2.6 The 'central' employment forecast has been selected as the basis for a 'medium growth' option and the 'higher' employment forecast has been selected as a 'maximum growth' option.

¹ Planning Practice Guidance, Housing and Economic Needs Assessment, Paragraph: 010 Reference ID: 2a-010-20190220

² Cambridgeshire and Peterborough Devolution Deal. March 2017.

3.2.7 Additional employment generates a demand for additional housing from those who move into an area to take up those jobs. To provide a consistent understanding of the homes that might be required to support jobs, alongside an understanding of the minimum housing need and the jobs that that minimum would support, these employment figures have then been converted into housing growth figures (the Greater Cambridge Housing and Employment Relationships Report (reference document 3)).

3.2.8 To translate jobs growth to housing growth it is necessary to apply a number of assumptions, including in particular commuting assumptions. In the first instance, the Greater Cambridge Housing and Employment Relationships Report (reference document 3) used a default assumption of Census 2011 commuting patterns (noting that the Census remains the most up to date comprehensive source of commuting data until publication of Census 2021 data) to inform the identification of:

- housing growth levels generated by the Central and Higher employment growth forecasts. Applying these existing commuting assumptions provides an understanding of the number of homes that might need to be provided to meet those higher forecasts, both within Greater Cambridge and in locations outside of Greater Cambridge.
- the jobs growth supported by the Standard Method housing figure. Existing commuting patterns are assumed to be carried forward under the standard method, where it is used by adjoining districts as part of their own plan making.

3.2.9 For the Central and Higher employment growth forecasts, the Greater Cambridge Housing and Employment Relationships Report (reference document 3) also undertook a sensitivity test to understand the total additional housing growth generated by additional jobs above those supported by the Standard Method, if that growth were to be delivered in full within the Greater Cambridge area. This assumed that all those workers filling the additional jobs would live within Greater Cambridge (a 1:1 commuting ratio) rather than assuming further in-commuting from neighbouring districts. Across Greater Cambridge, using the 1:1 ratio for additional jobs shows housing growth for Greater Cambridge around 114 dwellings per annum (dpa) higher for the Central forecast and 141 dpa (for the Higher forecast) than when using the Census 2011-based commuting assumptions.

3.2.10 For the purposes of testing of strategic options, the minimum and medium option assumes the continuation of 2011 Census commuting patterns, relying on this as a default assumption. For the maximum growth level option, the Councils assumed the 1:1 commuting assumption, in order to test a maximum

housing growth level for Greater Cambridge to go with the maximum jobs forecast. Applying these assumptions at this strategic options stage does not prejudice a decision on which approach the Councils might take on this issue when determining a preferred growth level option for the plan itself.

3.2.11 In summary, the range of reasonable growth level options to be considered are as follows: This table is followed by the comparable adopted Local Plan figures for context (albeit note that this was for a very slightly shorter plan period of 20 years):

Table 1: Employment and housing growth level options for each growth level option 2020-41 (rounded up to the nearest hundred)

Growth level option	Employment (jobs) - total	Employment (jobs) - per year	Housing (dwellings) - total	Housing (dwellings) - per year
Minimum	45,800	2,181	36,700	1,748
Medium	58,500	2,786	42,000	2,000
Maximum	78,700	3,748	56,500	2,690

Note: The testing of the maximum growth level option used interim findings from the evidence studies of 79,500 jobs and 57,000 homes, which were subsequently refined in the final study as shown in the table above. The differences from the final figures are not considered to be significant in the context of this strategic testing stage.

3.2.12 The comparable adopted 2018 Local Plan figures are shown below. These are for a very slightly shorter plan period of 20 years.

Table 2: Adopted Local Plans 2018 growth levels, 2011-31

Source	Employment (jobs) - total	Employment (jobs) - per year	Housing (dwellings) - total	Housing (dwellings) - per year
Cambridge & South Cambridgeshire Local Plans 2018	44,100	2,205	33,500	1,675

3.2.13 Based on the evidence available and taking account of national policy, it is considered that the growth level options identified provide a sufficient and reasonable range for appraisal at this stage.

4. Identification of Strategic Spatial Options

4.1 Introduction

4.1.1 Work has been undertaken to assess further whether the spatial choices set out in the Greater Cambridge Local Plan: First Conversation consultation are indeed reasonable; and to identify whether there are any additional reasonable spatial options that should be added to the First Conversation choices.

4.1.2 Assessment of the First Conversation consultation responses confirmed that all six original options should be taken forward for strategic options testing. Understanding whether there are any additional reasonable spatial options included sifting a long list of 97 ideas. These are set out in The Greater Cambridge Local Plan: strategic spatial options for testing – methodology document (reference document 1 ~ see Appendix 2: Identifying the full range of reasonable spatial options, Annex B: Sifting assessment of long list of additional ideas and Annex C: Full testing of short-listed additional sites).

4.1.3 This full assessment identified the following two options as being reasonable and substantively different to the six First Conversation options:

- Supporting a high-tech corridor by integrating homes and jobs (southern cluster); and
- Expanding a growth area around transport nodes (western cluster).

Consequently, eight choices were taken forward for testing as strategic options. A broad description of each of these is set out below.

Spatial Option 1: Focus on Densification of existing urban areas

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge: this is the last major brownfield site within Cambridge urban area and is being taken forward separately via an Area Action Plan.

Spatial Option 2: Focus on Edge of Cambridge: outside Green Belt

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the Green Belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

Spatial Option 3: Focus on Edge of Cambridge: Green Belt

This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

Spatial Option 4: Focus on New Settlements

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

Spatial Option 5: Focus on Dispersal: Villages

This approach would spread new homes and jobs out to the villages.

Spatial Option 6: Focus on Public transport corridors

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

Spatial Option 8: Expanding a growth area around transport nodes (western cluster)

This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro (CAM).

4.2 Bringing the growth and spatial options together

4.2.1 The next stage involved identifying the level and broad distribution of growth for each of the eight spatial options identified above, to include:

- Identifying the minimum, medium and maximum growth balance to find through new allocations; and
- distributing growth between a range of broad areas of supply (recognising that the approach to the options testing stage is at a strategic level and not site-specific).

4.2.2 To inform the approach taken to distributing growth, a number of factors were taken into account, including:

- Overarching principles – derived from legislation and national policy relevant to testing of options;
- Key policy principles – derived from national policy;
- Opportunities and constraints - including factors such as existing and proposed transport infrastructure, assumed delivery rates, and environmental constraints.

Overarching principles

4.2.3 The following principles are used to guide further development of the spatial options:

- Not to predetermine any key element of the spatial strategy, such that no single broad spatial location for growth is included in all options.
- Be reasonable options, including:
 - informed by high-level estimates of the capacity and availability of broad sources of supply, taking into account environmental constraints;
 - informed by evidence-based assumptions about delivery rates; and
 - based on a consistent set of assumptions.
- Take a ‘policy-off approach’ in respect of policy designations such as Green Belt and development frameworks (this approach assumes that these policy designations do not apply to enable a fuller consideration of development opportunities. Note the exception to this principle is Spatial Option 2: Edge of Cambridge – non Green Belt option, which explicitly seeks to explore a scenario in which the Green Belt was retained in its current form, in order to test all reasonable options, and also to address the NPPF principle referred to below at 4.2.4).

Spatial principles

4.2.4 The NPPF has been used to identify a number of additional key policy principles to take into account. These are:

- Flexible plan-making to allow the plan to adapt to rapid change - a flexibility buffer of 10% is added to each growth level option for testing;
- Account for environmental constraints;
- Account for cross boundary impacts;
- Deliverable, including in the first five years;
- Include a proportion of small sites;
- Integrate development with infrastructure;
- Support sustainability of rural settlements;
- Make effective use of land; and
- Account for the importance of Green Belt (this has resulted in, among other things, the inclusion of options that locate development outside of Cambridge Green Belt boundaries and also options that locate development within Cambridge Green Belt boundaries).

Opportunities and constraints

4.2.5 Opportunities and constraints have been identified to understand the different implications for the spatial options.

4.2.6 Opportunities include:

- existing and planned transport infrastructure, particularly awareness of opportunities in public transport corridors, including the level of certainty of delivery of schemes;
- existing strategic employment locations have been mapped to support identification of development opportunities close to them;
- consideration of existing services in villages (identified using a proxy of settlement hierarchy designations included in the South Cambridgeshire Local Plan 2018) supports the NPPF spatial principle of incorporating assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure; and
- environmental opportunities, including understanding broad priority areas for green infrastructure.

4.2.7 Identified constraints include delivery rates: to account for the NPPF requirement for local plans to be deliverable, current delivery rates as used in the councils' adopted housing trajectory were used to inform the strategic spatial options for the minimum and medium growth level options. However, using these in early testing under a maximum growth level option led to

unrealistic and unreasonable spatial choices to support a deliverable and sustainable plan to 2041. For example, using such historic rates would mean that, say, ten new settlements would be needed to achieve sufficient delivery to achieve the maximum option by 2041, which it would clearly be unrealistic to deliver simultaneously. Further to this, considering sustainability objectives would suggest it would be more sustainable to concentrate growth in a smaller number of locations which could support greater infrastructure provision and generate greater critical population mass. Drawing on the above, the maximum growth level option for testing was compiled assuming delivery rates that were increased significantly beyond historic rates. In doing so, the Councils were not indicating that they had evidence to demonstrate that such a step change increase in delivery rates was achievable (see reference to the Housing Delivery Study Interim Findings (reference document 11) which suggests that in fact such rates will only be possible with significant interventions and/or alternative delivery models).

4.2.9 Environmental constraints provide a rough guide to where would be appropriate or not to locate development when considered at a strategic level. Environmental constraints include flood zones and statutorily designated historic and natural features.

4.2.10 The next sections set out the approach to determining the balance to find in relation to growth levels, and key assumptions relating to sources of supply, including broad locations, capacity, availability, delivery and further evidence required for later stages of the plan-making process.

4.3 Establishing the amount of additional development required

4.3.1 Significant levels of development are allocated in the adopted 2018 Local Plans and will come forward during the period of the Greater Cambridge Local Plan. Together with current estimates for windfall development this amounts to 36,400 new homes currently anticipated to be developed by 2041 based on currently anticipated build out rates. A further 8,600 homes on these existing sites, at new settlements, are anticipated to be built after 2041 based on currently anticipated build out rates. Delivery from the adopted plans will be reviewed carefully and the supply could change, including as a result of a review of windfalls. Nonetheless, this figure is considered a reasonable assumption for the testing of strategic options. Taking account of these commitments and windfalls, the balance of homes to plan for against each growth level option is set out below.

Table 3: Residual Housing Growth requirements used for testing strategic spatial options, 2020-41 (rounded up to the nearest hundred)

Growth level option	Total housing (including 10% buffer)	Development already in the pipeline (including windfalls)	Additional housing to be allocated on sites in the new Local Plan
Minimum	40,300	36,400	3,900
Medium	46,200	36,400	9,800
Maximum	62,700	36,400	26,300

Notes:

1. The testing of the maximum growth level option used interim findings from the evidence studies of 57,000 homes (therefore 62,700 homes with a 10% buffer) rather than 56,500 homes as set out at Table 1 (which would give a total housing figure including 10% buffer of 62,150 homes). The differences from the final figures are not considered to be significant in the context of this strategic testing stage.

2. As noted above at paragraph 4.2.7 the maximum growth level option for testing was compiled assuming higher delivery rates than previously achieved in order to give a reasonable option for testing. Under this assumption, higher delivery rates at committed new settlements were assumed, adding around 8,600 dwellings to the assumed commitments to 2041 (therefore 45,000 rather than 36,400), such that the residual housing to find in new allocations for the purposes of testing was reduced from 26,300 homes to 17,700. The actual residual figure to find will therefore be informed by the delivery rates that are ultimately identified as reasonable for the new Local Plan.

4.3.2 The Greater Cambridge Employment Land Review & Economic Evidence Base Study (reference document 2) identifies that there is 459,319m² (net) of planned business floorspace in Greater Cambridge from existing commitments (adopted allocations and sites with planning permission). Adding the anticipated increase in business floorspace of 150,000m² from the outline planning application (with a planning committee resolution to grant planning permission) at the Wellcome Genome Campus results in an

employment commitments baseline of 609,319m² (net) of business floorspace for 2020-41. This is a strong level of supply to meet future needs. It also reflects the nature of the area where large strategic sites are identified but can take many years to deliver. The Employment Land Review provides commentary on this supply, and makes recommendations for the plan regarding issues related to individual land types regarding quantitative and qualitative issues. Whilst less space may be needed to accommodate the jobs anticipated from lower growth level options, it is important to maintain a flexible employment land supply, that can respond to change and the future needs of firms. Current circumstances related to the Covid-19 pandemic and the UK's decision to leave the European Union create greater than usual economic uncertainty. We will continue to update our economic evidence as the plan is developed.

- 4.3.3 For the purposes of testing spatial options, particularly in terms of transport modelling, the minimum, medium and maximum jobs levels identified in the table at paragraph 3.2.10 were used, and distributed drawing on the existing commitments identified in the Employment Land Review and additional supply related to the location of additional housing in each spatial option.
- 4.3.4 The Greater Cambridge Local Plan: strategic spatial options for testing – methodology document (reference document 1) sets out in detail the approach to establishing sources of new supply to inform an understanding of how the different spatial options might be delivered. The detailed evidence considered relates to broad locations and their capacity, availability, deliverability and what further evidence is likely to be needed.
- 4.3.5 Whilst the purpose of an option may be to test maximising development at a certain type of location, it will not always be possible to meet the level of development being considered in that single location type. It will therefore be necessary to add growth in other locations to that option.
- 4.3.6 For each growth level and spatial option, the development required in addition to the focus of the option is distributed across the sources of supply as informed by the spatial principles referred to above. It is important to emphasise that the way the remainder of provision beyond the focus of the option is provided can be flexible if the findings of assessment identify issues with the assumptions made for the purposes of this initial assessment. Therefore, findings relating to the balance of supply should be treated with some caution and issues identified may be capable of being addressed through alternative sources of supply.

4.3.7 Similarly, while these options comprising the various sources of supply are presented as distinct and standalone, it is possible that the optimum approach could potentially involve some growth in a number or all of these locations, but in different proportions depending upon the prioritisation of the themes in the plan. Therefore, the final preferred approach may represent a hybrid of the different standalone options. These matters will be considered further through the next stages of the plan-making process.

4.3.8 The paragraphs and tables below sets out for each of the strategic spatial options the broad locations that would comprise sources of supply to meet each of the three levels of growth. This includes both the primary source associated with that option and any additional sources that might be needed to make up the total amount of growth for that option. Medium and maximum growth level options comprising similar sources of supply, will differ due to assumed faster build rates under the higher growth level option. Details of the numbers involved are provided in The Greater Cambridge Local Plan: strategic spatial options for testing – methodology document (reference document 1).

4.3.9 This provides the basis for testing the options in a consistent and directly comparable way. The initial findings and analysis of this testing process are addressed in the following sections of this report.

Spatial and Growth Level Options: sources of land supply

Spatial Option 1: Focus on Densification of existing urban areas

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge: the last major brownfield site within Cambridge urban area is at North East Cambridge which is being taken forward separately via an Area Action Plan.

Minimum Growth Level Option	Medium Growth Level Option	Maximum Growth Level Option
<ul style="list-style-type: none"> ○ North East Cambridge ○ Cambridge Urban Area (low density) 	<ul style="list-style-type: none"> ○ North East Cambridge ○ Cambridge Urban Area (medium density) <p>Additional sources</p> <ul style="list-style-type: none"> ○ Cambridge Airport 	<ul style="list-style-type: none"> ○ North East Cambridge ○ Cambridge Urban Area (high density) <p>Additional sources</p> <ul style="list-style-type: none"> ○ Cambridge Airport

	<ul style="list-style-type: none"> ○ Edge of Cambridge in Green Belt (one site/broad location) 	
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Strategic Spatial Option 2: Focus on Edge of Cambridge - outside Green Belt

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

Minimum Growth Level Option	Medium Growth Level Option	Maximum Growth Option
<ul style="list-style-type: none"> ○ Cambridge Airport <p>Additional sources</p> <ul style="list-style-type: none"> ○ North East Cambridge ○ One Village site 	<ul style="list-style-type: none"> ○ Cambridge Airport <p>Additional sources</p> <ul style="list-style-type: none"> ○ North East Cambridge ○ Two smaller new settlements of 4,500 dwellings on public transport corridors ○ Balance spread across the Rural Centre (30%) and Minor Rural Centres (70%) outside of the Green Belt 	<ul style="list-style-type: none"> ○ Cambridge Airport <p>Additional sources</p> <ul style="list-style-type: none"> ○ North East Cambridge (faster buildout) ○ One larger new settlement of 9,000 dwellings on a public transport corridor ○ One smaller new settlement of 4,500 dwellings on a public transport corridor

Strategic Spatial Option 3: Focus on Edge of Cambridge - Green Belt

This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

Minimum Growth Level Option	Medium Growth Level Option	Maximum Growth Level Option
<ul style="list-style-type: none"> ○ Edge of Cambridge – Green Belt (equivalent to three sites/broad locations) 	<ul style="list-style-type: none"> ○ Edge of Cambridge – Green Belt (equivalent to five sites/broad locations) <p>Additional sources</p> <ul style="list-style-type: none"> ○ Minimal balance within Cambridge urban area 	<ul style="list-style-type: none"> ○ Edge of Cambridge – Green Belt (equivalent to five sites/broad locations using higher delivery rates)

Strategic Spatial Option 4: Focus on New settlements

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

Minimum Level Growth Option	Medium Growth Level Option	Maximum Growth Level Option
<ul style="list-style-type: none"> ○ Two smaller new settlements of 4,500 dwellings on a public transport corridor 	<ul style="list-style-type: none"> ○ Three new settlements on public transport corridors (two larger new settlements of 9,000 dwellings and one smaller new settlement of 4,500 dwellings) ○ One smaller new settlement of 4,500 dwellings on the road network 	<ul style="list-style-type: none"> ○ Three new settlements on public transport corridors (two larger new settlements of 9,000 dwellings and one smaller new settlement of 4,500 dwellings) ○ One smaller new settlement of 4,500 dwellings on the road network ○ Built at a higher delivery rate than the medium growth level option

Strategic Spatial Option 5: Focus on Dispersal – villages

This approach would spread new homes and jobs out to the villages.

Minimum, Medium and Maximum Growth Level Options
<ul style="list-style-type: none"> ○ 40% of balance at Rural Centres ○ 40% of balance at Minor Rural Centres ○ 17% of balance at Group villages ○ 3% of balance to find at Infill villages

Strategic Spatial Option 6: Focus on Public transport corridors

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

Minimum Growth Level Option	Medium Growth Level Option	Maximum Growth Level Option
<ul style="list-style-type: none"> ○ North East Cambridge ○ One smaller new settlement of 4,500 dwellings on a public transport corridor ○ Minimal balance spread across 18 villages sited along existing or proposed public transport corridors 	<ul style="list-style-type: none"> ○ North East Cambridge ○ One larger new settlement of 9,000 dwellings on a public transport corridor ○ Balance spread across 18 villages sited along existing or proposed public transport corridors 	<ul style="list-style-type: none"> ○ North East Cambridge ○ One larger new settlement of 9,000 dwellings on a public transport corridor ○ Balance spread across 18 villages sited along existing or proposed public transport corridors ○ Built at a higher delivery rate than the medium growth level option

Strategic Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

Minimum Growth Level Option	Medium Growth Level Option	Maximum Growth Level Option
<ul style="list-style-type: none"> ○ One smaller new settlement of 4,500 dwellings on a public transport corridor within the southern cluster area ○ Balance distributed equally across the five villages located within the core southern cluster 	<ul style="list-style-type: none"> ○ One smaller new settlement of 4,500 dwellings on a public transport corridor within the southern cluster area ○ Balance spread equally across five villages sited along existing/proposed public transport 	<ul style="list-style-type: none"> ○ One larger new settlement of 9,000 dwellings on a public transport corridor within the southern cluster ○ Balance spread equally across the five villages sited at existing/proposed public transport nodes

<p>area that are on public transport corridors</p>	<p>corridors within the core southern cluster area (70%), and further villages within the southern cluster core area not on public transport corridors (including 20 % at Group villages and 10% at Infill villages)</p>	<p>within the southern cluster</p> <p>Additional sources</p> <ul style="list-style-type: none"> ○ Cambridge Airport ○ North East Cambridge
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Strategic Spatial Option 8: Expanding a growth area around transport nodes (western cluster)

This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

<p>Minimum Growth Level Option</p>	<p>Medium Growth Level Option</p>	<p>Maximum Growth Level Option</p>
<ul style="list-style-type: none"> ○ Expansion of Cambourne by the equivalent of one smaller new settlement (completions and commitments + 4,500 dwellings = 11,300 dwellings) ○ Balance spread across three villages sited along the A428 public transport corridor 	<ul style="list-style-type: none"> ○ Expansion of Cambourne by the equivalent of one smaller new settlement (completions and commitments + 4,500 dwellings = 11,300 dwellings) ○ Balance spread across three villages sited along the A428 public transport corridor (60%) and four further Minor Rural Centre/Group villages within 5km of Cambourne (40%) 	<ul style="list-style-type: none"> ○ Expansion of Cambourne by the equivalent of one larger new settlement (completions and commitments + 9,000 dwellings = 15,800 dwellings) ○ Balance spread across three villages sited along the A428 public transport corridor (60%) and one Minor Rural Centre and three Group villages within 5km of Cambourne (40%) <p>Additional sources</p> <ul style="list-style-type: none"> ○ Cambridge Airport ○ North East Cambridge

5. Emerging Evidence Findings

5.1 Introduction

- 5.1.1 This section provides an overview of the emerging initial findings from the various topic-based reports commissioned by the Councils to assess the potential effects of the growth and spatial options. For a number of the topics covered it is not possible at this stage to draw firm conclusions that differentiate substantively between the various options, particularly as some topics rely on more site-specific information. In addition, some reports provide interim findings as further assessment is required and is ongoing.
- 5.1.2 Nonetheless, the information provided is valuable to help understand the broad issues and implications that are likely to arise, particularly for example with regard to the different levels of growth. These reports have been produced alongside Sustainability Appraisal of the options, which is required to assess comprehensively the effects of the various options to inform the choice of the preferred development strategy.
- 5.1.3 An overview of the topic-based reports are presented in this section under the ‘Big Themes’ that guided the ‘First Conversation’. Details of the various studies and reports referred to in this section are provided in the reference list at the end of this document.

5.2 Climate Change

Zero Carbon Study

- 5.2.1 **Study aims** – This study will assess the potential for the new local plan to respond to climate emergency by supporting a transition to net zero carbon, including the setting of robust evidence-based carbon reduction targets. It will include defining what ‘net zero’ should mean in terms of sources and types of emissions, explore planning powers, explore targets, policies, the feasibility and cost implications of building to net zero carbon standards, and the possible role of offsetting in net zero carbon new developments.
- 5.2.2 The ‘Greater Cambridge Local Plan - Strategic spatial options appraisal: implications for carbon emissions’ study (reference document 4) set out to compare the carbon emissions implications of the various strategic spatial options and growth level options and how these might be affected by applying a combination of carbon reduction policies.

5.2.3 Study status – The study is an interim draft, which is yet to be finalised. It sits within wider net zero carbon study work for the Local Plan.

5.2.4 High level methodology – For the spatial options appraisal a bespoke carbon model has been created to help assess the carbon implications of the spatial strategy, covering the following sources of carbon emissions from new buildings in Greater Cambridge:

- Building construction materials and processes (embodied carbon).
- Building heating and electricity usage (operational carbon).
- Occupant and visitor transport (transport carbon).

The model also offers a range of options for policies to reduce carbon emissions. At this stage of the plan-making process, the following two policy approaches have been modelled:

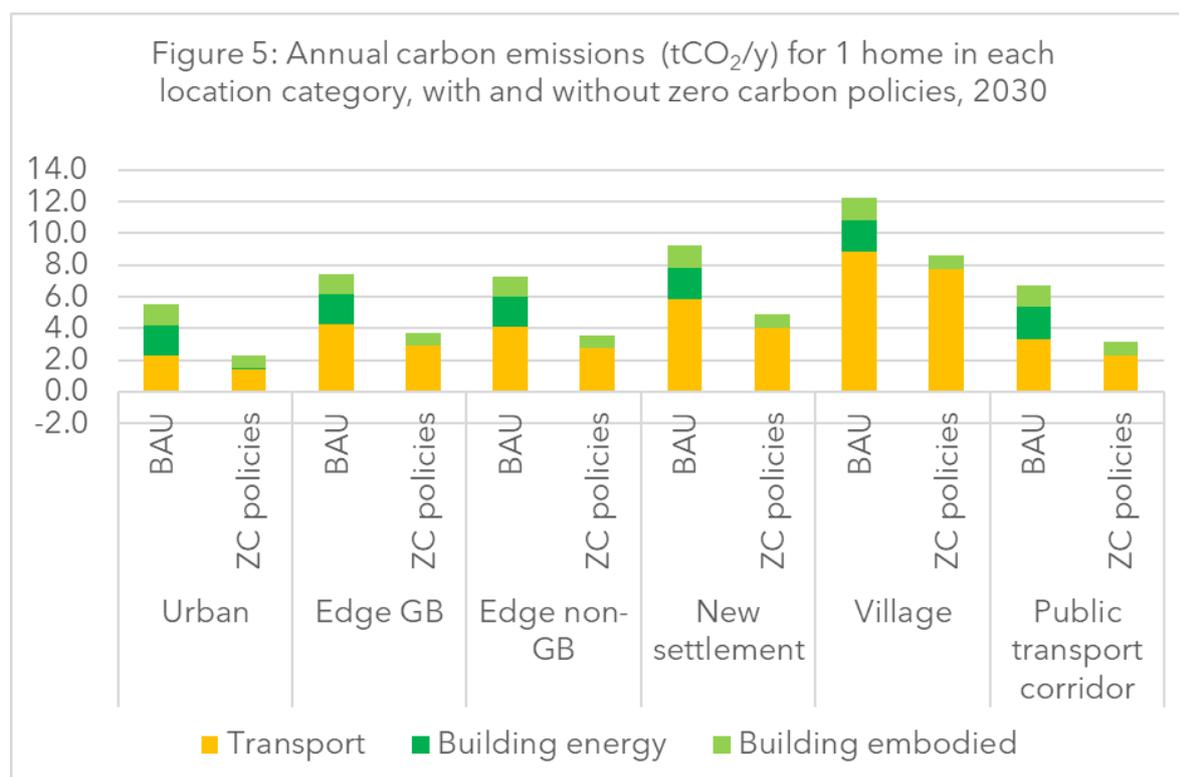
- Business As Usual - based on current typical practice.
- Zero Carbon Policy - making drastic but achievable improvements to new buildings' energy efficiency, embodied carbon, renewable energy generation, sustainable transport and 10% of private vehicles to be electric (reflecting the consultants' assumptions regarding the transition to electric vehicles during the plan period).

5.2.5 Key findings – Transport carbon is the greatest source of carbon and shows by far the most significant variation across the spatial options. The primary determinant of how each option compares in terms of its carbon emissions is the quality of access to public, active, and low carbon travel modes, and the degree of need to travel regularly.

5.2.6 Carbon emissions from building energy use is less variable. Since it is assumed that best-practice energy efficiency policies are already in place, it is most affected by the ability of development to provide enough PV panels to offset the electricity demand on site. Lower-rise schemes, which would be more typical in villages and new settlements have a greater ratio of roof space to internal area, and therefore a greater capacity to meet their own electricity demand from an on-site renewable (and therefore zero carbon) source.

5.2.7 Embodied carbon is almost consistent across the spatial options. The minor change is dependent on the modelled development mix between flats and houses and number of bedrooms. This affects the amount of materials used for construction per dwelling created, as higher rise flats use less material per dwelling than low density detached housing. There is also a difference in the level of required new infrastructure (schools, libraries, health facilities etc) depending on the location of the housing, which in turn has its own embodied carbon associated with its construction.

- 5.2.8 **Testing outcomes for growth level options** – The results show that all of the growth level options will result in a very small increase on existing overall emissions from Greater Cambridge. The exception will be if maximum growth takes place entirely within the villages option and with business as usual construction and transport, which generates significant additional carbon emissions. The results of the analysis make a strong case for applying zero carbon policy to growth and focusing on minimising the need for private cars. More detail can be found in reference document 4.
- 5.2.9 **Testing outcomes for spatial options** – The study report ranks the spatial options in order from best to worst with regard to carbon emissions. Some caveats are applied to these findings. In particular, some options were assumed to have better public transport accessibility than others. Option 2 (Edge of Cambridge – outside the Green Belt) includes North-East Cambridge, which is next to a rail station, so homes at that site were treated as being in a ‘public transport corridor’ location. In contrast, in Option 3 (Edge of Cambridge – Green Belt), no specific locations are mentioned. This option has a small number of homes in the urban centre, with the majority in unspecified Green Belt locations. Therefore, the assessment assumes a suburban density and transport context. However, this could change dramatically if Green Belt sites were for example on direct regular public or active transport links (especially rail stations).
- 5.2.10 Using the model to explore individual locations, the impact of transport on carbon emissions becomes clear, with urban, edge of urban and new settlements performing better than villages. Transport corridors stand out due to opportunities for low carbon travel.



Source: Greater Cambridge Local Plan strategic spatial options assessment: Implications for carbon emissions (Bioregional and Etude) November 2020 (reference document 4)

Looking at the strategic options, which have development in a number of locations:

5.2.11 Option 1 – Densification (ranked first) - This option has the majority of homes in urban and suburban settings. This results in the best public and active transport access of the options and the most efficient materials use for higher rise construction in places with lower requirement for new supporting infrastructure. This is slightly counter balanced by having the least ability of the spatial options to provide enough on-site PV panels for the homes' electricity demand, so net emissions from home energy are actually the highest of the spatial options. Adding offsite renewables matched to their remaining energy demand could alleviate this.

5.2.12 Option 2 - Edge of Cambridge not in Green Belt (ranked fourth) - This option allocates homes across four different settings - urban densification, edge non-GB, new settlements on public transport and rural villages. This produces a very even blend, and hence mid-range emissions across the three sources of carbon emissions.

5.2.13 Option 3 – Edge of Cambridge Green Belt (ranked fifth) - This option is based on the majority of homes on the urban fringe within the Green Belt with

a few in urban densification. The urban fringe is assumed to have medium public and active travel accessibility and hence transport emissions. It is of medium density, hence medium ability to provide renewables on-site and therefore medium building energy emissions. It is the second lowest for embodied carbon due to having a reasonably high number of flats and smaller houses, but predominantly due to low assumed new supporting infrastructure due to the accessibility of nearby existing facilities.

5.2.14 Option 4 – New settlements (ranked third) - This option is all homes in new settlements on a mixture of public transport corridors and on road network. This creates mid-range transport carbon emissions. It is modelled at mid-density; hence the building energy emissions are in the middle. However, embodied carbon is high due to the need for additional supporting infrastructure and the predominance of larger houses rather than more efficient flats.

5.2.15 Option 5 – Dispersal – villages (ranked eighth) - This option is based on all homes in village settings. This has the worst transport links by a substantial margin and a slightly higher embodied carbon due to low rise detached housing and necessary supporting infrastructure. In contrast, it has the best net building energy performance, because the lower density makes it the most able to provide substantial renewable energy on-site through PVs. Overall, the carbon cost of the transport far outweighs the smaller benefit from the increased PV, making this the most carbon intensive option.

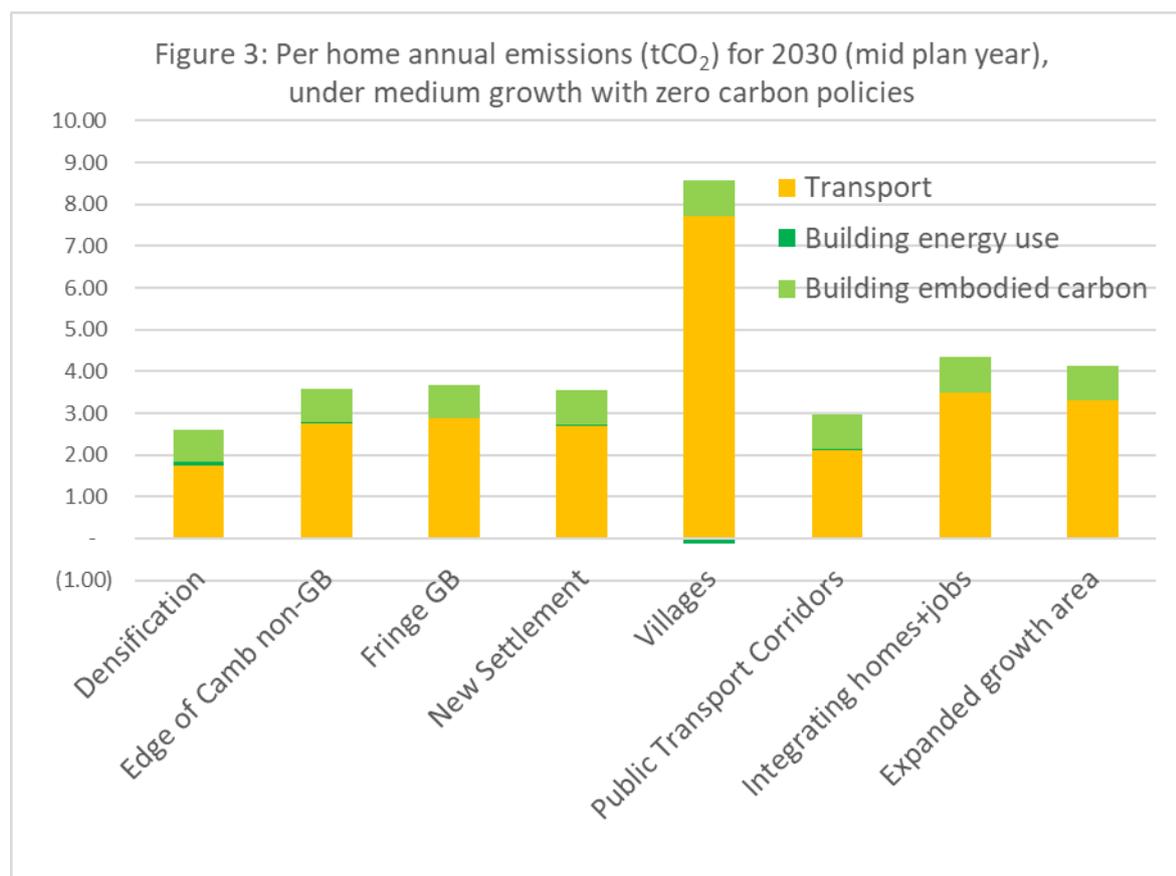
5.2.16 Option 6 – Public transport corridors (ranked second) - This option has a mixture of homes in urban settings and settlement on public transport corridors; hence it has good transport links and therefore second lowest transport carbon. This is slightly countered by a medium efficiency of materials used due to the mix of low and higher rise construction, and a mixed ability to provide enough on-site PV panels for the same reason.

5.2.17 Option 7 - Supporting a high-tech corridor by integrating homes and jobs (southern cluster) (ranked seventh) - This option has the majority of homes in new settlements on transport nodes, with some homes in dispersed villages. The effect of this is to create the second highest carbon emissions overall, predominantly due to the transport emissions from the dispersed village homes. There is also more embodied carbon due to the lower density housing and significant new supporting infrastructure required for new settlements and villages.

5.2.18 Option 8 - Expanding a growth area around transport nodes (western cluster) (ranked sixth) - This option allocates homes across Cambourne, along public transport corridors and dispersed villages; hence, this also

produces mid-range emissions across the range of emissions sources. The transport is slightly higher than average due to the development in dispersed villages.

5.2.19 To help understand the drivers of difference between each option, the following chart shows a breakdown of annual emissions per home in the mid-plan period year, with a medium level of growth, after zero carbon policies have been applied.



Source: Greater Cambridge Local Plan strategic spatial options assessment: Implications for carbon emissions (Bioregional and Etude) November 2020 (reference document 4)

5.2.20 Summary -

- Option 1 Densification has the lowest plan carbon emissions, with Option 6 Public Transport Corridors a close second.
- Option 5 Villages is by far the highest carbon option, with more than three times as much carbon emissions as Option 1 Densification, largely due to the greater levels of car use.
- Differences between other spatial options largely relate to the public transport links of the anticipated sites. For example, a key site

considered in option 2 ‘edge, non-Green Belt’ is next to a train station and many of this option’s other homes follow a relatively dense urban pattern. In contrast, ‘fringe Green Belt’ sites are unspecified and therefore treated as suburban and not quite so well connected to public transport.

- The effect of applying zero carbon policies is dramatic and would, for example, allow maximum growth to take place with less gross carbon emitted than in medium growth without zero carbon policy, with the exception of the Villages option.
- With a full shift to electric vehicles still a long way off, from a carbon point of view it is best to focus growth choices on minimising car dependence. The choice of spatial option (and public transport provision, if not in a central urban location) is therefore crucial to reduce carbon emissions from growth.

Integrated Water Management Study

5.2.21 Study aims - The ‘Greater Cambridge Local Plan strategic spatial options assessment: Integrated Water Management Study (reference document 5) considers the opportunities, constraints and uncertainties for each strategic option relating to water supply, wastewater, water quality and flood risk. The comprehensive nature of the study reflects the importance of water management as an issue within Greater Cambridge. For the same reason, the report has been the subject of an independent expert review.

5.2.22 Study status – The options review is now complete, but must be considered as interim as it has been prepared in advance of completing the main Integrated Water Management Study documents (a Level 1 Strategic Flood Risk Assessment, an Outline Water Cycle Study and a Detailed Water Cycle Study). These will be completed later in 2020/2021. The analysis and findings of the interim study report will be revisited in greater depth in the Outline and Detailed Water Cycle Study.

5.2.23 High level methodology – The study is based on information received to date from stakeholders. Consultation with stakeholders is ongoing and not all questions can be answered at this stage. Where necessary, the consultants have made assumptions that aim to be conservative, technically achievable and represent a “safe” fall-back position.

5.2.24 Key findings – The study concludes that for flood risk, wastewater treatment, and water quality, there are constraints to development due to existing areas of high flood risk, wastewater treatment capacity limitations, and existing diffuse and point source pollution. As a minimum, development will need to

mitigate any further detrimental effects to have a neutral impact. However, there are also opportunities for development to offer betterment to existing conditions, for example by reducing flood risk downstream, reducing point and diffuse pollution, and supporting larger integrated water management schemes including more natural wastewater treatment options.

5.2.25 For water supply, over-abstraction of the chalk aquifer is having a detrimental impact on environmental conditions, particularly during dry years that may become more frequent due to the impacts of climate change. None of the strategic options offer the opportunity to mitigate these existing detrimental impacts. Even without any growth, significant environmental improvements are unlikely to be achievable until major new water supply infrastructure is operational, which is unlikely to occur before the mid-2030s under current structures and normal means by which new strategic scale water infrastructure is delivered. Therefore, the analysis has focused on a “no additional detriment” neutral position. To prevent any increase in abstraction and its associated detrimental environmental impacts, mitigation measures will be necessary.

5.2.26 **Testing outcomes for growth level options** – Although there are constraints to development for flood risk, wastewater treatment and water quality under all three growth options, these could plausibly be addressed with appropriate mitigation measures in compatible timescales to result in either no additional detrimental environmental impacts or betterment where possible.

5.2.27 The **maximum growth level option** has potential “deal-breaker” constraints due to water supply limitations, which will occur without strategic scale interventions such as the provision of new reservoirs. The timing of planning, constructing and commissioning new strategic-scale water supply infrastructure through ‘business as usual’ is not currently compatible with the Local Plan timescale for the high growth level option.

5.2.28 The **medium growth level option** is plausibly achievable for water supply, but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. The proposed growth could be accommodated if regional scale water supply solutions are operational by the mid-2030s, and suitable interim measures are implemented beforehand to mitigate impacts. These will need rapid planning and investment in the early part of the next Asset Management Period (2025 – 2030). There is a high uncertainty associated with the interim measures.

5.2.29 The **minimum growth level option** would be the most sustainable of the three options, in terms of preventing any further detrimental impacts on the water environment. Interim mitigation measures will still be necessary to

prevent detrimental impacts before regional scale water supply solutions are operational, but there is a greater certainty for the planning and implementation of these measures due to their smaller magnitude and later timing, compared to the medium growth level option.

5.2.30 Testing outcomes for spatial options – The study assessed the constraints and opportunities of each individual location that make up the eight spatial options in terms of their performance against each of the water-related issues. The scores were then weighted and compiled for each spatial option to give a ranked order of the performance of each spatial option from best to worst.

5.2.31 These findings demonstrate that growth is most preferable concentrated in edge of Cambridge outside Green Belt (Option 2) and new settlements (Option 4). This is because these include areas of known or expected low flood risk and would be large sites with good opportunities for blue-green infrastructure, flood risk reduction and high-quality resilient water recycling systems. Option 3 (edge of Cambridge Green Belt) performs less well because of the weighting given to existing fluvial flood and surface water flood risk, which may make individual sites difficult to deliver, depending on location.

5.2.32 It might be more difficult to identify appropriate sites in the options involving dispersal to existing villages or densification of urban areas (Options 1 and 5), because of the high existing flood risk in these areas. The smaller expected size of developments would offer fewer transformational opportunities for blue-green infrastructure, flood risk reduction, and high quality resilient water recycling systems.

5.2.33 Development in the Cambourne area could have opportunities for water resources with the potential for water to be supplied by bulk transfer from another area. However, these benefits could be offset by the significant capacity constraints for wastewater treatment at Bourn and Uttons Drove. Further work would be necessary to identify technically feasible mitigation measures or alternative provision.

5.2.34 Summary -

- The chalk aquifer is already over-abstracted which is having a detrimental impact on the flow in chalk streams.
- To meet current and future demands, potable water supplies will need to be increased in other ways, such as reduced usage (demand management), reduced leakage, licence trading, water imports and major new strategic infrastructure such as reservoirs.
- For growth levels, the **minimum growth level option** is the most environmentally sustainable.

- There are ‘deal breaker’ constraints on water supply for the **maximum growth level option** without early strategic scale interventions, such as new reservoirs. These are unlikely to be available until after the start of the local plan period under current structures and normal means of provision.
- This is a significant issue for government to consider when exploring growth through the Ox-Cam Arc. Stakeholders such as Water Resources East and Cambridge Water must be engaged in this process.
- **Spatially**, growth should be concentrated in new settlements or urban extensions (Options 2 and 4).
- The least preferable spatial option is Option 5 (dispersal to villages).

5.3 Biodiversity and Green Space

Green Infrastructure Study

5.3.1 **Study aims** – A Green Infrastructure (GI) Opportunity Mapping project is underway to inform the Local Plan. The overall aim of the study is to provide a robust evidence base on the quantity and quality of existing GI assets and networks within Greater Cambridge, and through analysis and consultation, identify specific and deliverable opportunities to enhance and expand the network, supported by appropriate policies. A Greater Cambridge Green Infrastructure Opportunity Mapping Baseline Report (reference document 6) has been published, identifying key GI assets, risks and opportunities, and broad opportunity zones addressing varied GI themes, including for example biodiversity and geodiversity, and recreation. The Greater Cambridge Local Plan strategic spatial options assessment: Green Infrastructure Opportunity Mapping (reference document 7) uses the information from the wider baseline work and is reported separately.

5.3.2 **Study status** – As note above a baseline report has been published alongside the assessment of strategic options. A further final stage of the main study will follow in 2021 once a preferred strategic spatial option has been selected. This will include the refinement of the broad opportunity zones and the identification of a range of projects that could be delivered to enhance the GI network.

5.3.3 **High level methodology** – To inform appraisal of the strategic options, for each broad area of supply making up the spatial options, the baseline evidence from the Greater Cambridge Green Infrastructure Opportunity Mapping Baseline Report (reference document 6) was examined, and a set of

opportunities and risks were identified. The options appraisal report notes that this is a high-level assessment, and in some cases it is not possible to be definitive about the likely impacts without more spatial specificity. In particular, the non-site specific nature of the options make it challenging to make conclusions about their relationship with the broad opportunity zones identified in the GI Mapping project. Identification of a preferred option with sites will support further consideration of these broad opportunity zones and also specific GI project opportunities.

5.3.4 **Key findings** – The overall conclusion reached is that each option offers different opportunities and potential risks in terms of GI; no one single option clearly performs better than the other in terms of GI.

5.3.5 **Testing outcomes for growth level options** – The **minimum growth level option** potentially provides more scope to locate development to minimise impacts on existing assets, or to focus development to where the greatest opportunities can be achieved. The **higher growth level options** reduce flexibility in relation to being able to target the location of development in this way and will result in greater landtake. Where space is constrained, GI provision will need to be more innovative. On the other hand, development can provide opportunities for GI such as new areas of GI for recreation or habitat provision, or enhancement of existing areas which already perform a specific function (such as important habitats); to improve the efficacy of this function.

5.3.6 Testing outcomes for spatial options – The following broad conclusions are drawn with regard to the locations and development types included in the spatial options:

- **Existing urban area** (Option 1 + 2, 3, 6, 7, 8) - There is greater potential for piece-meal delivery of GI associated with multiple smaller developments and the added challenge of significant 'space' constraints. On the other hand, there are opportunities to deliver new GI where there may be existing deficiencies or challenges. Focusing growth at North East Cambridge may provide opportunities to integrate a more diverse range of GI opportunities through innovative measures; although this presents risks to the existing GI network, particularly relating to increased recreational pressure on nearby sites and potential impacts on wetland assets to the east and north east.
- **Edge of Cambridge outside Green Belt** (Option 2 + 1, 7, 8) - Focusing growth at Cambridge Airport will provide opportunities to integrate a wider range of GI interventions associated with larger development. However, growth here presents risks to the existing GI

network, particularly relating to increased recreational pressure on sites, and potential impacts on wetland assets to the east and north east.

- **Edge of Cambridge in Green Belt** (Option 3 + 1) - Provides an opportunity for urban extensions to cater for GI deficits in neighbouring urban areas. There are also opportunities associated with the requirement of the NPPF for the release of Green Belt sites to positively enhance the remaining Green Belt. There is some sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance.
- **New settlements** (Option 4 + 2, 6, 7) - Provide an opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning could accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources. Depending on the location of new settlements and supporting infrastructure, there is an increased risk of impact on international designation and/or functionally linked habitat. Any delivery focused at a new settlement in the life sciences cluster area around the south of Cambridge would provide opportunities for habitat enhancement. These could collectively serve to support flood management, biodiversity and carbon capacity.
- **Villages** (Option 5 + 2, 6, 7, 8) - This increases the likelihood of piecemeal GI interventions associated with multiple smaller developments, as opposed to delivering strategic GI opportunities. This may lead to greater challenges in delivering integrated ecological networks unless an overarching vision is established and supported in planning policy and land-use decision making. The higher concentrations within individual villages under the medium and maximum options may present opportunities to deliver GI that can address existing deficiencies in access to open space.
- **Transport nodes** (Option 8) - There is a risk of development (dwellings or supporting infrastructure) which may extend or exacerbate existing north-south severance; but also an opportunity to introduce GI connectivity across the A428 corridor. There is potential to further develop active transport connections linking GI assets with managed capacity for recreational access to alleviate demand / potential demand on those with sensitive hydrological or ecological feature.

5.3.7 Summary –

- The non-site specific nature of the options make it challenging to make conclusions about their relationship with opportunity zones identified through the wider GI Mapping project.
- Each spatial option offers different opportunities and potential risks in terms of GI; no one single option clearly performs better than the other.
- The **minimum growth level option** potentially provides more scope to locate development to minimise impacts on existing assets, or to focus development to where the greatest opportunities can be achieved.
- The **higher growth level options** reduce flexibility in relation to being able to target the location of development in this way and will result in greater landtake. On the other hand, development can provide opportunities such as new areas of GI for recreation or habitat provision.

Habitat Regulations Assessment (HRA)

5.3.8 **Study aims** – The purpose of the Greater Cambridge Local Plan strategic spatial options assessment: Habitats Regulations Assessment (reference document 8) is to undertake a high-level review of the likely impacts of the strategic spatial options. HRA refers to the assessment of the potential effects of a development plan on one or more European sites, including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites. It is a requirement under the Conservation of Habitats and Species Regulations 2017 for the Council undertake an HRA to ensure that the development plan does not adversely affect the integrity of any European site.

5.3.9 **Study status** – The study report is not a formal HRA, but has used the principles of the HRA process to assess the spatial options. It forms part of a wider HRA process which began in 2019 with the production of the HRA Scoping Report of the Greater Cambridge Local Plan Issues and Options 2020, which identified European sites with potential to be affected by the Local Plan. Subsequent stages of plan making will be subject to HRA.

5.3.10 **High level methodology** – For all spatial options, the following potential effects on designated sites were assessed: physical damage and loss (offsite); non-physical disturbance; non-toxic contamination; air pollution; water quantity and quality. The report notes that due to the high-level nature of the options presented at this stage, there are no site-specific boundaries provided. Therefore, in line with a precautionary approach, where there is any uncertainty in relation to potential impacts to a European site an adverse

impact was assumed at this stage. This report draws on the findings of the HRA Scoping Report to determine the impacts of each strategic spatial option.

5.3.11 **Key findings** – The review identifies a range of potential impacts for each option with regard to individual protected sites. Although, there are a greater number of potential impacts identified in relation to some options compared to others, it cannot be assumed that these options will result in a greater level impact overall. This will be dependent on the level of risk and severity of impact to each European site, which will be assessed in more detail as part of the HRA.

5.3.12 This should not, however, be seen as negative with regard to particular options highlighted in the report. It is to be expected that as options are worked up further, potential impacts identified for the strategic options identified at this stage will be refined and, where feasible, mitigation identified. The HRA assessment will be informed by relevant evidence base documents, including traffic modelling data, air quality modelling and water cycle study where required.

5.4 Wellbeing and Social Inclusion

Equalities Impact Assessment

5.4.1 **Study aims** – An Equalities Impact Assessment (EqIA) is a statutory requirement for the Local Plan. It provides an important opportunity to draw out the potential effects of the spatial options on different parts of the community, particularly those with ‘protected characteristics’ (age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation). The Sustainability Appraisal also consider equalities issues.

5.4.2 **Study status** – An EqIA has been and will be carried out for each Local Plan stage, and has been completed for this stage: Greater Cambridge Local Plan strategic spatial options assessment: Equality Impact Assessment (EqIA) (reference document 9).

5.4.3 **High level methodology** – EqIAs provide a methodical approach to the assessment of impacts across the nine protected characteristics. It is undertaken by way of a structured, standardised questionnaire that seeks to assess the implications of the particular policy, strategy, procedure, project or function.

5.4.4 **Key findings** – Additional growth, regardless of the quantum, should bring with it a wider variety of jobs and houses. The Local Plan can include policies

to ensure a mix of jobs as well as house types, sizes and affordability, including a proportion of adaptable (lifetime) houses, tailored to the identified local housing needs. Growth would also bring additional infrastructure as well as services and facilities, including education, health, open space, recreation, and other community uses with the intention of creating balanced communities.

- 5.4.5 Future development will need to address its own impacts to be acceptable in planning terms. Dependent upon the scale of growth and the potential demand it would generate, this could mean providing additional capacity within existing facilities and services, or provision of additional new facilities. A larger scale development is more likely to include new on-site facilities, whereas smaller developments may expand existing facilities, where it is possible to do so.
- 5.4.6 **Testing outcomes for growth level options** – There is no specific testing of different growth levels undertaken in the EqIA.
- 5.4.7 **Testing outcomes for spatial options** – The following overview is provided of the effects of the spatial options:
- 5.4.8 **Options 1, 2 and 3 (Densification of urban area and edge of Cambridge options)** - Growth focussed in or around urban areas, particularly Cambridge as the largest settlement, has the greatest potential to provide more people with access by a range of sustainable modes of travel. These options could be more inclusive to more people as Cambridge has the broadest range of services and facilities, and the focus for many jobs. However, reliance on public transport may not be an affordable choice for people on low incomes, particularly young and old.
- 5.4.9 **Option 4 (New settlements)** - New settlements, depending on their size, can be planned to be insular by co-locating and providing a broad range of jobs, houses and facilities and services (including healthcare). If designed around the principles of walkable neighbourhoods with these can be readily accessible within a short distance by walking and cycling, the cheapest and most inclusive modes of travel. However, reliance on public transport may not be an affordable choice for people on low incomes, particularly young and old. New settlements could act as a local hub for surrounding smaller communities, to avoid the need to travel longer distances to market towns or Cambridge for all their needs, provided access issues could be overcome.
- 5.4.10 **Option 5 (Dispersal to villages)** - Villages are, by their nature, smaller settlements with less services and facilities available, residents in smaller villages need to travel elsewhere to meet their day to day needs. Unless

villages are located close to, or on one of the radial routes into, Cambridge the choice of travel options may be limited and/or costly. This could negatively impact younger and older people who are unable to drive or own a car.

5.4.11 Options 6 and 8 (Public transport corridors and expanding a growth area around transport nodes (western cluster)) - Radial routes into Cambridge are the main transport corridors and the focus for future infrastructure improvements, including public transport (and transport nodes), which should improve the non-car mode options for people living on or close to these corridors. However, reliance on public transport may not be an affordable choice for people on low incomes, particularly young and old.

5.4.12 Option 7 (Supporting a high-tech corridor by integrating homes and jobs (southern cluster)) - Supporting homes in the technology corridor would help to integrate homes with jobs to redress the imbalance and significantly reduce the need and distances travelled by employees. This option would need to be considered in conjunction with other options as it would only address some aspects of the local housing need. This option would largely benefit people of working age, although it would benefit people who have mobility issues to live closer to their place of work and avoid having to overcome transport issues.

5.4.13 Summary -

- Additional growth, regardless of the quantum, should bring with it a wider variety of jobs and houses.
- Growth would also bring additional infrastructure as well as services and facilities, including education, health, open space, recreation, and other community uses with the intention of creating balanced communities.
- A larger scale development is more likely to include new on-site facilities, whereas smaller developments may expand existing facilities, where it is possible to do so.
- Access to jobs, services and facilities by sustainable, accessible transport is a key consideration with regard to spatial options and choices.

5.5 Great Places

Landscape and Townscape Character Assessment

5.5.1 Study aims – The appraisal of the strategic options set out in the ‘Greater Cambridge Local Plan strategic spatial options assessment: Landscape and Townscape’ report (reference document 10) is based on the interim draft

findings of the Landscape Character Assessment, which is a work in progress.

5.5.2 Study status – The conclusions of the options appraisal study are preliminary and will need to be verified once the Landscape Character Assessment is complete (expected December 2020).

5.5.3 It should be noted that the Councils have also commissioned a Strategic Heritage Impact Assessment. This will investigate further the potential impact of spatial options on historic environment in terms of conserving and enhancing the distinctiveness of the historic city, its approaches and its landscape context, including its heritage assets. It will also consider the impact of taller buildings. This study has yet to be completed.

5.5.4 High level methodology – Taking into account the interim draft findings of the emerging Landscape Character Assessment study where appropriate, the consultants have undertaken a high level comparative review of the potential landscape and townscape character considerations of the strategic spatial options and growth level options that are being tested as part of the Greater Cambridge Local Plan process. Where appropriate, the analysis identifies the draft Landscape Character Types that provide the landscape setting and context for each of the strategic spatial options and summarises the key sensitivities of the landscape from the interim draft Landscape Character Assessment.

5.5.5 Key findings –

- Overall, all of the strategic spatial options and growth level options would result in changes, both negative and positive, in terms of conserving and enhancing the character of Greater Cambridge's landscapes and townscapes, maintaining local distinctiveness and strengthening sense of place.
- The Fens, Chalk Hills and River Valleys have sensitive landscape characteristics that are likely to be particularly vulnerable/susceptible to urban development. This may present constraints for higher growth levels associated with spatial options in these landscapes.
- The smaller historic villages and their landscape settings have sensitive townscape/landscape characteristics that are likely to be particularly vulnerable to change. This may present constraints for higher growth levels associated with spatial options focused on the dispersal of growth to existing villages.
- The historic townscape character and landscape setting of Cambridge is particularly vulnerable to change. This may present constraints for higher growth levels associated with spatial options focused on densification of the city and the edge of Cambridge.

- 5.5.6 **Testing outcomes for growth level options** – The particular differences between different levels of growth are set out in relation to each of the spatial options in the report. To avoid repetition these are set out in the following section of this report under each of the spatial options.
- 5.5.7 **Testing outcomes for spatial options** – The following are broad summaries of the potential effects of each of the eight spatial options:
- 5.5.8 **Option 1 (Densification of existing urban areas)** - By focusing on the use of brownfield land to accommodate growth, this spatial option would have more limited impacts on the wider Greater Cambridge landscape considered as a whole, compared to other spatial options involving supply focussing on greenfield land. A key consideration of this option is the capacity of existing urban areas to accommodate growth on previously developed brownfield land without weakening distinctive local townscape characteristics/features, and potential changes to key views and the landscape setting of the city experienced in approaches to and from Cambridge, particularly where tall buildings are proposed associated with densification. The study notes that a Strategic Heritage Impact Assessment study has been commissioned by the Councils that will look further at impacts on historic townscape character and views.
- 5.5.9 **Option 2 (Focus on Edge of Cambridge - outside Green Belt)** - Due to the open character of the Fen Edge Chalklands landscape context for Cambridge Airport, it is likely that the new urban edge would be a prominent feature in the landscape and require provision of appropriate strategic landscape mitigation and enhancement measures. By focusing predominantly on the use of brownfield land to accommodate growth, this option is likely to result in more limited changes that may harm distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development compared to the medium and maximum growth levels, which involve additional supply focussing on greenfield land.
- 5.5.10 **Option 3 (Focus on Edge of Cambridge - Green Belt)** - Use of greenfield land on the edge of the Cambridge Urban Area could result in landscape changes that would alter the setting of the city, particularly in relation to the historic core.
- 5.5.11 In general terms, the Fens (to the north-east and east), the Cam River Valley (to the north-east and south-west), the eastern part of the Western Claylands and Lowland Claylands (to the west) and the Gog Magog Chalk Hills (to the south) have sensitive landscape characteristics that are likely to be particularly vulnerable/susceptible to changes from major urban extensions

than other landscape types around the edge of Cambridge. As they include additional sources of supply on greenfield land, the medium and maximum growth options are likely to have greater impacts on the wider landscape setting of Cambridge – including potentially on key views of the City (such as from the Gog Magog Hills and Wimpole Ridge) and from an increased sense of coalescence with the necklace of rural villages surrounding Cambridge.

5.5.12 Option 4 (New settlements) - In general terms, the Fens, River Valley and Chalk Hills have sensitive landscape characteristics that are likely to be more vulnerable/susceptible to changes from new settlements than other landscape types within Greater Cambridge. By focussing on new settlements to accommodate growth, this spatial option provides opportunities for high quality and distinctive housing design that is responsive to local character and creates a strong sense of place through a comprehensive masterplanning process based on 21st century settlement planning principles (including sustainable building and urban design, landscaping and green infrastructure provision).

5.5.13 Option 5 (Dispersal – villages) - In general terms, the smaller villages dominated by historic cores with distinctive landscape settings have sensitive townscape/landscape characteristics that are likely to be more vulnerable/susceptible to changes from growth than, typically, the larger villages within Greater Cambridge where their character is dominated by 20th/21st Century peripheral estate development.

5.5.14 Option 6 (Public transport corridors) - Focusing new settlement along existing public transport corridors would be likely to concentrate the urbanising impact upon the rural character of the Greater Cambridge landscape. Expansion of existing villages could result in the coalescence of settlements along the public transport corridors. The provision of appropriate strategic landscape mitigation and enhancement measures for integrating new settlements and growth on greenfield land around the edges of villages into the surrounding countryside would be a key policy consideration for the new Local Plan.

5.5.15 Option 7: Supporting a High-tech corridor by integrating homes and jobs (southern cluster) - In general terms, the River Valley and Chalk Hills have sensitive landscape characteristics that are likely to be more vulnerable/susceptible to changes from development focussed on the southern cluster than the Lowland Claylands landscape type within this part of Greater Cambridge. Focusing growth in a single location would reduce landscape changes across the wider Greater Cambridge landscape. However, it could lead to adverse impacts upon distinctive, local landscape characteristics and features.

5.5.16 Option 8: Expanding a growth area around transport nodes (western cluster) - In general terms, the Wooded Claylands landscape type is considered to offer potential opportunities to accommodate growth focussing on the expansion of Cambourne along the A428 public transport to the west of Cambridge.

5.5.17 Summary –

- The strategic spatial options and growth level options would result in changes, both negative and positive, in terms of conserving and enhancing the character of Greater Cambridge’s landscapes and townscapes.
- The Fens, Chalk Hills and River Valleys have sensitive landscape characteristics that are likely to be particularly vulnerable/susceptible to urban development.
- The city of Cambridge and the smaller historic villages and their landscape settings have sensitive townscape/landscape characteristics that are likely to be particularly vulnerable to change.
- These facts may present constraints for higher growth level options associated with spatial options in these landscapes.

5.6 Homes

Housing Delivery Study

5.6.1 Study aims – Consultants are undertaking research on housing delivery to provide evidence to support the emerging Greater Cambridge Local Plan, and to feed in to the Housing and Economic Land Availability Assessment (HELAA) process and updates to the Greater Cambridge housing trajectory. The Greater Cambridge Local Plan strategic spatial options assessment: Housing Delivery Study – Interim Findings report (reference document 11) provides the preliminary views of the consultant team drawing on research to date and providing professional judgements on the emerging three growth level options for homes and jobs and eight strategic spatial options.

5.6.2 Study status – The study presents interim findings and a commentary on the strategic options, which will be developed further in a final report.

5.6.3 High level methodology – The Housing Delivery Study commenced in August 2020; to date a literature review of relevant secondary sources and initial analysis of data has been conducted, alongside the distribution of a questionnaire sent to local and national stakeholders involved in the housing and development industry and drawn from the private, public and third sectors (550 consultees). A series of workshops and one to one interviews are

scheduled to take place in November 2020 with key stakeholders (individuals or organisations with an in-depth knowledge of the housing market and development industry).

- 5.6.4 The Interim Findings report uses the Councils' existing assumptions of build out rates and lead-in times for estimating housing trajectories and calculating five-year housing land supply positions at plan adoption (assumed to be 1st April 2025 for the purposes of the report). Housing trajectories have been prepared to assess housing deliverability over the plan period of each of the spatial options at the different growth levels. The final report will revisit the spatial options using updated lead-in times and build-out rate assumptions based on desktop research of comparator locations and engagement with developers and agents in the local market.
- 5.6.5 The Interim Findings Report assumes that annual housing delivery needs to be phased such that it matches the annual housing requirement throughout the plan period – this will be given further consideration as both the study and plan making are progressed. The interim findings report also calculates five year housing land supply based on delivery from existing supply as well as the additional locations for growth as set out for each option.
- 5.6.6 **Key findings** – These are set out below with regard to the growth and spatial options.
- 5.6.7 **Testing outcomes for growth level options** – The conclusions at this stage on the housing growth options (across all eight spatial options) are:
- 5.6.8 **The minimum growth level option (1,743 dwellings per annum, or dpa)** is largely met by existing commitments and the windfall allowance; however the supply is front-loaded before 2031, the end date of the existing 2018 Local Plans. As a result, additional supply is needed after 2031 to sustain delivery and to ensure a sufficient buffer to enable the delivery of the housing requirement (additional sites are needed post 2031 to deliver approximately 400-500 dpa).
- 5.6.9 **The medium growth level option (1,996 dpa)** requires a relatively small amount of additional supply from around 2028/29 onwards to provide a five-year housing land supply at plan adoption, and significantly more supply is needed from 2033/34 onwards (additional sites are needed post 2033/34 to deliver around 750 dpa).
- 5.6.10 **The maximum growth level option (2,711 dpa)** requires significant additional supply, alongside the existing commitments and windfall allowance. In this option the Councils would begin the plan period (from 2020/21) with a

shortfall in housing supply due to the significant increase in annual housing requirement compared to the annual requirement of 1,675 dwellings in the adopted 2018 Local Plans, an increase of 62%. When compared with the historical average delivery rate observed in Greater Cambridge between 2002/03 and 2018/19 of 1,439 dpa, the increase is higher at 88%. The preparation of a new local plan that involves a significant uplift in the annual housing figure inevitably results in a delay to delivering at that higher rate while the plan is being prepared and examined, incorporating additional allocations that will enable delivery of the higher figure, inherently creating a shortfall at the time of adoption. The scale of the shortfall created by the significantly higher annual housing requirement results in a challenging five-year housing land supply requirement. The Councils would therefore need to pursue either a stepped annual housing requirement over the plan period or the use of the Liverpool method for calculating their five year supply for the majority of the spatial options to be able to demonstrate a five year housing land supply at plan adoption. However, the use of a stepped annual housing requirement figure for a maximum growth level, that is significantly higher than historic delivery levels, brings into play market absorption issues and a risk that the local market is unable to absorb such a number of new dwellings.

- 5.6.11 The assumption used by the Councils under all of the **maximum spatial options** is that the historic build out rate in Greater Cambridge would need to be increased at strategic sites (500dpa, rather than the 250dpa agreed during the last Examination in Public) to enable sustainable choices for the distribution of growth to be made. The report concludes that based on initial research average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models.
- 5.6.12 Based on the interim findings to date, the conclusion is that none of **the eight spatial options at maximum growth levels** are likely to be deliverable in practice based on current market conditions and the UK housing market's traditional routes to delivery. However, a higher annual housing requirement than the **medium option** may be achievable, but it is not possible to advise on what level of growth may be deliverable at this stage in advance of more detailed testing and engagement with the development industry.
- 5.6.13 The relationship between jobs growth and housing has a significant bearing on delivery rates. The rate of jobs growth and the locations where the jobs growth is taking place will significantly affect the demand for housing in terms of timing and location. The **medium and maximum options** are jobs-led options and the housing supply would be significantly higher than household growth, and therefore the additional housing would be filled by in-migrants moving to the area, the majority of which would be for employment reasons.

In order to expand housing supply beyond current delivery levels, the Councils need to consider what range of homes would be attractive to in-migrants to Greater Cambridge, and try to match the new housing supply with the demand.

5.6.14 Testing outcomes for spatial options – The interim findings of the pros and cons of each of the spatial options are set out below.

5.6.15 Option 1 (Densification of existing urban areas) – Housing would be provided close to employment and the established Cambridge housing market may allow high build out rates. Option 1 would provide a mix of home ownership, affordable housing, private rented supply and specialist housing; and deliver sufficient small sites and a five year housing land supply at plan adoption. However, there is already a high percentage of new builds within the Cambridge housing market, which may limit the ability to expand the market, and the likely number of smaller units would not meet market demand for a housing mix. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant.

5.6.16 Option 2 (Focus on Edge of Cambridge - outside Green Belt) – Close proximity between employment locations and homes and will provide a mix of home ownership, affordable housing, self/custom build housing and specialist housing. But unlikely to be able to deliver sufficient small sites and there may be a risk to relying on delivery from Cambridge East during the middle part of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and advises that it has a signed option agreement at Cranfield Airport, Bedford.

5.6.17 Option 3 (Focus on Edge of Cambridge - Green Belt) – Close proximity between employment locations and homes and will provide a mix of home ownership, affordable housing, self/custom build housing and specialist housing. However, the sites are likely to be delivering concurrently, competing with one another and reducing market absorption. This option is unlikely to be able to deliver sufficient small sites.

5.6.18 Option 4 (New settlements) – Provides opportunities to deliver new housing at scale in the mid to latter parts of the plan period. Ability to provide a mix of home ownership, affordable housing, self/custom build housing and specialist housing. There could be competition with existing committed new settlements, and this may result in a reduction in the build out rates. Unlikely to be able to deliver sufficient small sites.

5.6.19 **Option 5 (Dispersal – villages)** – Would provide a wider choice of housing in the market in terms of both size and location, and therefore would maximise the market absorption rate. Greater potential to deliver sufficient small sites and able to demonstrate a five year housing land supply at adoption of the plan. However, likely to result in short-medium term supply, therefore not adding to supply later in the plan period. Less likely to deliver affordable housing. Fewer smaller dwellings and apartments are likely to be delivered, limiting overall delivery rates. Smaller sites are unlikely to deliver private rented supply, including build to rent.

5.6.20 **Option 6 (Public transport corridors)** – Good commuting relationship between jobs and homes provides opportunities for higher density, build to rent and affordable housing. Likely to deliver sufficient small sites at villages in the medium and maximum growth levels. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant.

5.6.21 **Option 7: Supporting a High-tech corridor by integrating homes and jobs (southern cluster)** – Good commuting relationship between jobs and homes provides opportunities for higher density, build to rent and affordable housing. Focus on the south of Cambridge will reduce competition with the committed new settlements to the north and west of the city. Will deliver small sites in villages. However, relies on the performance of high-tech sectors of the economy in this location and demand for homes tied to this.

5.6.22 **Option 8: Expanding a growth area around transport nodes (western cluster)** – Good commuting relationship between jobs and homes provides opportunities for higher density, build to rent and affordable housing. Will deliver small sites in villages. The lead-in times for strategic transport infrastructure such as East-West Rail and the Cambridge Autonomous Metro may delay housing delivery until after the infrastructure is operational. Expanding Cambourne and focussing development along the A428 could result in competition between sites, affecting market absorption and build out rates.

5.6.23 **Summary** –

- Average build out rates in excess of 300 dwellings per annum will only be possible with significant interventions and/or alternative delivery models.
- None of the **eight maximum spatial options** are deliverable in practice based on current market conditions and approaches to delivery.

- The relationship between jobs growth and housing has a significant bearing on delivery rates, particularly for the **medium and maximum growth level options**.
- **All spatial options** have pros and cons associated with them.
- Options that mix short-medium term sources of supply (smaller sites in urban areas and villages) with longer-term sources (new settlements, urban extensions and Green Belt release) are better-able to deliver across the plan period.

5.7 Jobs

Employment Land Review – consideration of options

- 5.7.1 **Study aims** – The ‘Greater Cambridge Employment Land Review and Economic Evidence Base Study’ (the ELR) (reference document 2) provides the background to the options assessment. This study reviewed the economic development and employment land needs of the Greater Cambridge area. It provides the evidence for future employment floorspace needs in terms of type, amount and some of the locational implications.
- 5.7.2 The ‘Greater Cambridge Local Plan Strategic Spatial Options Appraisal: Employment’ (reference document 12) considers the implications of the growth and spatial options arising from the amount and type of employment land that would be needed in different locations, taking account of the substantial committed employment land supply.
- 5.7.2 **Study status** – The ELR is published alongside this report. However, it may need to be revisited during plan making, particular to monitor the impacts of Covid19.
- 5.7.3 **High level methodology** – In assessing the levels of employment growth, the report draws on the wider ELR which takes into account the demand supply balance of various floorspace types as well as qualitative findings relating to business clusters.
- 5.7.4 In assessing spatial options from an employment perspective the following have been considered:
- Labour force accessibility, availability and proximity
 - Suitability for future economic growth sector land uses
 - Proximity to existing clusters
 - Deliverability / market response

- 5.7.5 **Key findings** – The Employment Land Review explores the supply and demand for employment space in the Greater Cambridge area. It applies a range of methods, including the forecasts referenced earlier in this report, to consider the amount and type of floorspace needed in the area during the plan period. It reviews in detail the existing supply commitments, and considers whether they will meet the demand identified.
- 5.7.6 It makes quantitative and qualitative recommendations, to provide a flexible supply, which encourages business growth and inward investment, and aligns with market feedback and past completions trends.
- 5.7.7 Taking account of the amount and type of the committed land supply, it identifies an expected shortfall in B1a/b provision (offices and R&D) in the region of 50,000 to 100,000m² when compared to its recommendations. Given the commonalities between offices and dry labs, the market feedback is that further accommodation of this type is lacking in the city and around North East Cambridge. It is recommended, therefore, that further allocations are made to accommodate both office and wet/dry lab needs in Greater Cambridge. For B8 light industrial and warehouse uses, there is an assessed under supply of leading to a recommendation that suitable locations should be identified for small and mid-sized light industrial and distribution units.
- 5.7.8 **Testing outcomes for growth level options** – The ELR makes specific recommendations regarding quantitative and qualitative employment land and floorspace provision for the new Local Plan in order to provide a flexible supply, responding to the range of issues discussed above. However, looking directly at the modelled amount and type of employment land needed to support the number of jobs in each growth level option:
- **Minimum growth** – the current level of employment commitments in the Greater Cambridge land supply would provide enough B1 employment land (offices, research & development (R&D) and industrial). However, there would be a shortfall in industrial and warehousing needs.
 - **Medium growth** – the current level of employment commitments would provide enough B1ab employment land (offices and R&D), if the mixed B1 components include a sufficient amount of R&D floorspace in particular. There would, however, be a shortfall in industrial and warehousing needs.
 - **Maximum growth** - the current level of employment commitments are not considered to provide a sufficient amount of B1b land (R&D). Based on market feedback, additional B1a premises (offices) are also required. There would be a shortfall in industrial and warehousing needs.

5.7.9 **Testing outcomes for spatial options** – There are different implications for each level of growth across the spatial options; these are summarised below. Detailed findings with regard to employment issues (labour force, suitability for future economic growth sector land uses, proximity to existing clusters and deliverability/market response) are included against each spatial option in section 6 of this report.

5.7.10 Under the **minimum growth level option** the office and laboratory requirements are largely met through existing supply. For industrial and warehousing needs, spatial options 3 (edge of Cambridge Green Belt), 4 (new settlements), 6 public transport corridors), 7 (supporting a high-tech corridor by integrating homes and jobs) and 8 (expanding a growth area around transport nodes) are likely to be suitable as larger areas of land will be available to meet floorspace requirements.

5.7.11 Under the **medium growth level option** again the office and lab requirements are largely met through existing supply. However, for offices the supply would only just exceed forecast needs. Options 1 (densification of urban area) or 2 (edge of Cambridge outside Green Belt) would best serve some further provision of B1a/b space (offices and R&D) given proximity to the city's existing professional services cluster concentration; although any option (except 5, village dispersal) could reasonably deliver additional floorspace. Under the medium growth option, B1b lower density labs would also largely have its floorspace requirements fulfilled by current supply although further allocations could be considered under spatial options 3 (edge of Cambridge Green Belt), 4 (new settlements), 6 public transport corridors), 7 (supporting a high-tech corridor by integrating homes and jobs) and 8 (expanding a growth area around transport nodes) where space is available. For industrial and warehousing needs, these same spatial options are likely to be suitable as larger areas of land will be available to meet floorspace requirements.

5.7.12 Under the **maximum growth level option** options 1 (densification of urban area) or 2 (edge of Cambridge outside Green Belt) would best serve a more substantial provision of further B1a office space meeting demand, given proximity to the city's existing professional services cluster concentration. It is possible that other options (except 5, village dispersal) could also reasonably deliver additional floorspace. B1b lower density labs need further supply which could be considered under spatial options 3 (edge of Cambridge Green Belt), 4 (new settlements), 6 public transport corridors), 7 (supporting a high-tech corridor by integrating homes and jobs) and 8 (expanding a growth area around transport nodes) where space is available. For industrial and

warehousing needs, these same spatial options are likely to be suitable as larger areas of land will be available to meet floorspace requirements.

5.7.13 The report also notes the general requirement to identify suitable locations for small and mid-sized light industrial and distribution units. Also, there is a challenge involved in spreading employment growth away from Cambridge without an institutional investor (this is noted as one of the success factors for the various research parks to the south of Cambridge). This challenge would impact on the more dispersed options, including 4 (new settlements), 5 (villages) and potentially 6 (public transport corridors).

5.7.14 **Summary –**

- Although there is a good stock of existing commitments, in order to provide a flexible supply of employment land which encourages business growth and inward investment, and aligns with market feedback and past completions trends, further supply is needed in relation to B1a/b (offices and R&D) and industrial and warehousing.
- Under the minimum and medium growth level options the office and laboratory requirements are largely met through existing supply. Greater flexibility would be required across employment uses under the maximum growth level option.
- The spatial options present a range of opportunities and challenges with regard to various employment criteria, which are reported in section 6 of this report.

5.8 Infrastructure

Transport evidence

5.8.1 **Study aims** – Cambridgeshire County Council Transport Policy Infrastructure and Funding Team has produced a 'Greater Cambridge Local Plan Existing Transport Conditions Report' (reference document 13) that provides evidence of current transport conditions as a basis for modelling the effects of future growth on transport outcomes, the results of which are set out in a separate 'Greater Cambridge Local Plan Transport Evidence Report' (reference document 14). This report provides an assessment of the transport effects of the growth and spatial options.

5.8.2 **Study status** – Further iterations of the Transport Evidence Report will be completed to inform selection of a preferred option including allocations.

5.8.3 **High level methodology** – The tests undertaken in the initial phase of the modelling assume that the level of additional development is that included in

the **maximum growth level option**. This provides an understanding of the greatest impacts on the network by the end of the plan period and in terms of how people will travel and gives a comparison of the impacts of each spatial option on the transport networks within the Greater Cambridge area.

- 5.8.4 The baseline of current transport conditions include a range of committed transport infrastructure schemes for which completion can be assumed by 2041. A range of sensitivity tests are being carried out, but are not included in this report. Sensitivity tests include testing of minimum and medium growth level options, as well as the overall impacts of major new developments once complete, in cases where they would build out well beyond the end of the plan period. There will also be sensitivity runs including the Cambridgeshire Autonomous Metro and East West Rail, which are not included in the baseline given their current status, but if delivered would be expected to bring significant benefits. Beyond the committed transport schemes referred to above, at this point no option-specific mitigation measures are included in the modelling.
- 5.8.5 The report considers the model outputs for the total number of trips and the mode shares seen in the model for each of the spatial options. The mode shares relate to the change in active travel (walking and cycling), in public transport use and car journeys. The model also enables the scale of impact on the road network to be assessed. This includes travel distance - how far is being driven in total; travel time - the time spent driving; and the changes in travel delays.
- 5.8.6 **Key findings** – The tests undertaken to date indicate that all of the spatial options see changes in the mode shares of trips with the majority of the spatial options seeing an increase in the use of active modes for journeys in all the time periods modelled, when compared with the 2041 Baseline (which reflects committed development in permissions and allocations; this is despite the fact that there is no additional mitigation included in these tests over that included in the Baseline.
- 5.8.7 The highway model results indicate increases in the numbers of vehicle trips as indicated by the increase in the number of vehicle kilometres travelled, as well as increases in the time taken and the level of delays recorded. All of the spatial options show an increase in the number of trips, the time taken and the delays, but as previously stated none of these tests include any specific mitigation over that in the Baseline. The results indicate that all of the spatial options will require additional mitigation to be introduced over that already assumed in the model, but the testing done to date does not indicate that any of the spatial options is likely to be undeliverable. However, it is possible that

the required level of mitigation for option 5 villages might mean that this option would not be viable.

5.8.8 Going forward there will need to be further assessment of the spatial options to assess the range of mitigation that might be required for each of the options, and the differences that occur depending on the location of the sites within any spatial option.

5.8.9 **Testing outcomes for growth level options** – As already noted, the testing of the eight spatial options assumes the maximum growth level option. The other two growth level options will, however, be the subject of sensitivity tests to assess the transport impacts.

5.8.10 **Testing outcomes for spatial options** – The Strategic Spatial Options are assessed against a consistent set of transport tests, concerning mode share and time, distance and delays for all journeys. The results have been combined to give an overall assessment of each option.

Best performing Options

5.8.11 Overall, the Best Performing options were Options 1 - Densification and 7 - Integrating homes and jobs.

5.8.12 Option 1 - Densification performs best consistently over all transport metrics, with the highest non- car mode share together with the lowest distance travelled, time travelled and delay. The projected mode share of 57.6% by non-car modes suggests that the level of additional mitigation for this option will be reasonable and in keeping with the scale of development assumed and therefore is likely to be deliverable.

5.8.13 Option 7 Integrating homes and jobs was shown to have a non-car mode share of just 45.9% and therefore this option was in the medium performing category for mode share. However, the highway metrics of travel distance, time and delay indicate that this option performs very well with low levels of additional travel distance, time and delay, meaning that the co-location of homes and jobs leads to reduced impacts on the highway network compared to many of the other options tested. The results indicate that this option would require more mitigation than option 1. The focus of this mitigation should be on increasing the share of trips made by non-car modes if this option were taken forward.

5.8.14 In conclusion, it is possible to say that both of these options could be made to work if the right package of mitigation were brought forward and the level of mitigation likely to be required would be in keeping with the scale of the development proposed.

Medium Performing Options

5.8.15 Of the remaining options all but one indicated that they would generate lower non-car mode shares than Option 1 - Density. However, when looking at the proportion of this mode share that utilises active modes, the mode share of the following Options 2 Edge - non-GB, Option 3 Edge – GB, Option 4 New Settlements, Option 6 PT Corridors, Option 8 Expanded Growth Areas were all shown to be higher than the 2041 Baseline. All of these options were shown to generate more distance travelled, travel time and delay than the best performing options above, but it is still considered possible to mitigate the impact of these spatial options on the transport networks. The level of mitigation required for these options, whilst being greater than for either of the best performing options, is still considered to be in keeping with the scale of development within these options and therefore, should be deliverable.

Poorly Performing Options

5.8.16 The only option shown to generate a lower active travel mode share than the 2041 Baseline is Option 5 Villages. This option was shown to have the largest car mode share of all the options tested, and was also shown to lead to the largest increase in vehicle kilometres, travel time and delay. Having said this, it would be possible to mitigate the impact seen but it is possible that the scale of mitigation required might render the development sites within this option unviable.

5.8.17 Summary -

- The transport tests, concerning mode share and time, distance and delays for all journeys indicate that Options 1 and 7 (Density and Integrating homes and jobs) are the best performing options
- All the spatial options could be mitigated, if the right package of measures were put in place. However, for Option 5 (Villages) required might render the development sites within this option unviable.

Infrastructure Study

5.8.18 **Study aims** – The ‘Infrastructure Delivery Plan - Greater Cambridge Local Plan strategic spatial options assessment’ (reference document 15) provides analysis of the strategic infrastructure required to support growth at the broad locations included in the spatial options.

5.8.19 **Study status** –The study report is draft final, but may be subject to further scrutiny and feedback.

5.8.20 **High level methodology** – The significant potential infrastructure constraints and opportunities are identified, and a conclusion is reached about the risks associated with them and whether some of the strategic options may be more able to support infrastructure delivery than others. The report addresses the following infrastructure requirements: transport, social and community infrastructure, green infrastructure, sports and leisure, and utilities.

5.8.21 **Key findings** – Higher levels of growth are likely to place greater demands on existing and new infrastructure. The eight spatial options have different implications for infrastructure use and provision. The Infrastructure Delivery Plan will ultimately identify the additional infrastructure that will be required to support the planned level of growth and the chosen spatial strategy, and that work will need to consider the existing ‘baseline’ position and all infrastructure already in the pipeline, effectively ‘netting’ existing and committed capacity off from the ‘balance to find’.

5.8.22 **Testing outcomes for growth level options** – The infrastructure study concludes that **minimum growth levels** in most of the spatial options can be supported through existing and planned transport infrastructure. However, it is likely that additional transport infrastructure will be required specific to the sites eventually identified. The **maximum growth levels** to 2041 and beyond, together with the associated higher delivery rates, will require big-ticket infrastructure items, such as the CAM, as well as other projects related to the potential Green Belt sites and new settlements.

5.8.23 There is currently uncertainty about the delivery of these items, and this will need to be achieved if these **growth levels and spatial options** are pursued. For both the **maximum and medium options**, capacity enhancements to existing transport infrastructure are likely to be required to realise the growth around Cambourne.

5.8.24 Social and community infrastructure requirements are directly related to population growth and consequently the higher growth level options generate the need for a considerable number of new educational, primary health care, community and library facilities to be provided.

5.8.25 The **maximum growth level option** generates significant requirements for open space and sports provision, which in terms of the outdoor provision, will be very challenging to deliver the full ‘space requirement’ in compliance with standards. As such, to achieve the maximum options, a radically different way of delivering and using open space is likely to be required. Provision of green infrastructure, open space and sports provision in this manner is likely to result in proportionately greater costs than the traditional methods, which may affect viability.

5.8.26 **Testing outcomes for spatial options** – The following overarching conclusions are drawn with regard to the spatial options. More detailed findings for each spatial option are included in section 6 of this report, below.

5.8.27 **Option 1 - Focus on densification of existing urban areas** - this option offers opportunity through the existing network of infrastructure in place, and the much greater opportunities for economies of scale. However, we think much of Cambridge's infrastructure is at or close to capacity and therefore given general space limitations across the City the challenge is in terms of providing the necessary incremental infrastructure improvements. Less of a concern are the standalone brown development sites at the NE Cambridge (all growth levels) and Cambridge Airport (medium and maximum growth) as it is expected that master-planning can ensure that appropriate facilities are provided. Although there are likely to be additional issues associated with brownfield sites, such as decontamination, existing traffic levels and congestion, and removal of the wastewater treatment works at NE Cambridge.

5.8.28 **Option 2 - Focus on edge of Cambridge: outside Green Belt** - this is likely to require new infrastructure to support growth, including decontamination of brownfield land; this may mean that the cost profile of development is weighted to the early part of the plan period and could present financing issues and also that completions remain low in early years.

5.8.29 **Option 3 - Focus on edge of Cambridge: within the Green Belt** - as with Option 2, we anticipate similar cost profiling and slow delivery issues. However, in addition to Option 2, we expect that the transport costs associated with delivering public transport improvements will be greater given the reduced connection with existing urban areas.

5.8.30 **Option 4 - Focus on new settlements** - all levels of growth focus development on enhanced public transport corridors; this has benefits in terms of ensuring more sustainable development, particularly in the higher growth level options which come with greater critical mass. Depending on the distribution of growth adopted, this could provide the necessary critical mass around new transport nodes required to fund those improvements. However, as identified above, there are high upfront costs as much of the infrastructure will be needed in advance or very early in the build-out. All of these issues add substantially to costs.

5.8.31 **Option 5 - Focus on dispersal: villages** - this option will place burdens on existing infrastructure; combined with a dispersed pattern of development, this means that the proportionate cost of infrastructure is likely to be greater as it

is used less intensively or generates the need to travel to remote infrastructure.

5.8.32 Option 6 - Focus on public transport corridors - the distribution of growth along public transport corridors which may mean that development can contribute to paying for new public transport infrastructure. However, the distribution of the balance of growth beyond the one new settlement risks giving rise to the inefficiencies identified in Option 5, particularly in relation to social, green and sport and leisure infrastructure.

5.8.33 Option 7 - Supporting a high-tech corridor by integrating homes and jobs (southern cluster) - apart from under the minimum level of growth, this option results in dispersed growth across the area, including outside main public transport corridors which might result in a greater infrastructure cost burden. The maximum growth level would mitigate this risk to some extent due to the large scale of the new settlement proposed which provides scope for critical mass and efficiencies.

5.8.34 Option 8 - Expanding a growth area around transport nodes: focusing growth at Cambourne (western cluster) - is likely to tie development to the delivery of large-scale transport infrastructure; delays to the delivery of that infrastructure which may be outside the control of the constituent authorities could act as a brake on development

5.8.35 Summary –

- Higher levels of growth are likely to place greater demands on existing and new infrastructure.
- The eight spatial options have different implications for infrastructure use and provision.
- The Infrastructure Delivery Plan will ultimately identify the additional infrastructure that will be required to support the planned level of growth and the chosen spatial strategy.

Viability Study

5.8.36 Study aims – The ‘Greater Cambridge Local Plan strategic spatial options assessment: Viability Assessment’ (reference document 16) provides a high-level assessment to give an early indication of whether the strategic spatial options are viable and any differences between them.

5.8.37 Study status – The study is draft, subject to further scrutiny and feedback. Further work will be undertaken to assess viability as the plan making process progresses.

5.8.38 **High level methodology** – The study report includes the caveat that as the assessment is not based on site-specific options, the report can only provide a broad analysis of viability. This is done through making assumptions about potential infrastructure and abnormal works required to bring the type and amounts of development identified forward. The viability appraisals include affordable housing (assumed delivered on site) and the costs for biodiversity net gain, water efficiency and infrastructure (which is variable depending on the option). Any surplus value generated could, in principle, fund additional policy costs.

5.8.39 **Key findings** – The residential viability results show that development is viable across **all options** tested, with 40% affordable housing, and there are viability surpluses to fund additional planning policies and/or infrastructure. **All options** produce a significant surplus above the benchmarked land value. However, given the Councils' priorities with regard to climate change and a range of other policy initiatives there are likely to be potentially significant demands on individual developments at site level. Therefore, additional policy costs are likely to be deduced from the surplus.

5.8.40 All employment uses tested are viable, apart from rural office parks, with differing levels of surplus. Rural office parks are only marginally unviable, small changes to rents or investment yield would render this option (Option 5) viable.

5.8.41 As these appraisals are strategic, it has not been possible to include information about site specific constraints (e.g. contamination, flood risk, more complex land values etc.). Also, it has not been possible to customise the development timings; therefore, for those potential sites that require significant upfront infrastructure to unlock the development, viability is likely to decrease than what is shown in this assessment. This is especially true for strategic developments such as new settlements. Once there is a better understanding of these costs and the associated timings viability may decrease in later iterations of the testing, as the preferred approach to the plan emerges.

5.9 Sustainability Appraisal

5.9.1 The Greater Cambridge Local Plan strategic spatial options assessment: Sustainability Appraisal (reference document 17) presents the findings of the assessment of growth and spatial options. Sustainability Appraisal is an iterative process and the report is based on the earlier Sustainability Appraisal scoping work and will be taken forward into the preferred options stage.

- 5.9.2 It is noted that all options are expected to result in a mix of positive and negative effects, and these will vary according to the growth level option and whether potential effects are considered within the plan period or beyond as well.
- 5.9.3 With regards to levels of growth, the **minimum growth level option** tends to have the least negative effects, as a lower level of growth is likely to put less pressure on local services and environmental resources. However, the **maximum growth level option** tends to include larger developments, which are likely to have greater scope for providing new services and facilities and for being designed in a way that encourages healthy lifestyles and environmental enhancements.
- 5.9.4 Options 1 'Densification of existing urban areas', Option 2 'Edge of Cambridge – outside the Green Belt' and Option 3 'Edge of Cambridge – Green Belt' are the best performing options within the plan period. These options will provide growth in and around Cambridge, meaning they are likely to have good access to services, facilities and jobs, as well as supporting the city's economy. In addition, larger developments, such as North East Cambridge, Cambridge Airport and urban extensions are likely to provide new services, facilities and green infrastructure.
- 5.9.5 Option 5 'Dispersal – villages' performs least well as it is likely to lead to scattered development that is likely to have poorer access to services, facilities and jobs and is unlikely to provide the critical mass of development at any particular location to provide new services and facilities or environmental enhancements.
- 5.9.6 The majority of remaining options perform less well within the plan period, because larger developments such as new settlements would be only partially complete, but very well when fully built out.
- 5.9.7 Further consideration of the Sustainability Appraisal implications for each option is provided in the following section.

6. Testing of Strategic Options

6.1 Introduction

- 6.1.1 This section of the report brings together the main findings from the various topic-based studies and the Sustainability Appraisal for each of the spatial options and growth level options in relation to each. For each spatial option we set out the overall issues, opportunities and challenges and whether there are any particular issues or implications arising with regard to the different growth levels as they apply to that particular option. This provides the basis for the final section of the report, which draws out some of the key findings and issues emerging from the testing of the strategic options overall.
- 6.1.2 For each spatial option, the findings from the Sustainability Appraisal are reported first, followed by ‘opportunities’, ‘challenges’ and ‘issues arising from different growth levels’, which draw on evidence from the topic-based studies.

6.2 Option 1 - Densification of existing urban areas

- 6.2.1 This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area in Option 1 is at North East Cambridge, with other locations focusing on the urban area added as necessary to different growth level options.
- 6.2.2 The Sustainability Appraisal finds that Option 1 performs well, particularly for the minimum growth level option, as the option for testing includes regeneration of a large brownfield site at North East Cambridge and would result in development very well located to access local services, facilities and jobs and would likely minimise the need to travel by car. Concentrating development in the urban area would also prevent or reduce the need to develop greenfield land, which may be more sensitive in terms of biodiversity and would reduce the need to sterilise mineral resources or high quality agricultural land.
- 6.2.3 However, this option poses a risk of demand for local services and facilities, including health services and green space, becoming greater than supply. It could also result in development of green space, which would have negative implications for human and environmental health. In addition, it may provide a more limited range of housing types and it would also fail to support rural settlements.

6.2.4 Concerns about pressure on existing infrastructure and facilities, and the ability to meet market demand for a mix of housing types from smaller sites, are offset to some extent by the inclusion of North East Cambridge as a strategic site that can address some of these concerns through a more comprehensive masterplanned approach.

Option 1 - Densification of existing urban areas - Opportunities

6.2.5 This is the best of all the spatial options with regard to **carbon emissions**.

6.2.6 Concerns about pressure on existing **infrastructure**, including **green infrastructure**, under this option are less relevant for the standalone North East Cambridge site as it is expected that masterplanning can ensure that appropriate facilities are provided. More dispersed development, of varying scales in the urban area may be more challenging to address.

6.2.7 This option would promote **equality and inclusivity** by providing more people with access to a range of sustainable modes of travel. Option 1 (together with Options 2 and 3) would be more inclusive to more people as Cambridge has the broadest range of services and facilities and is the focus for many jobs; including the potential to invest and spread benefits of growth in areas of Cambridge which includes some of most deprived wards in Cambridgeshire.

6.2.8 By focusing on the use of brownfield land to accommodate growth, this spatial option would have more limited impacts on the wider Greater Cambridge **landscape** as a whole, compared to other spatial options involving supply focusing on greenfield land.

6.2.9 For **housing**, proximity to employment and the ability to provide specialist housing because of existing facilities, services and amenities are seen as positives. Option 1 would also deliver sufficient small sites and be able to demonstrate a five-year housing land supply at plan adoption under all growth level options. Market absorption into the established Cambridge housing market may allow high build-out rates.

6.2.10 Option 1 would provide highly accessible **employment** opportunities to a significant labour pool in the city, while the urban focus of this option will be particularly well-suited to higher density offices and 'dry lab' research type space. North East Cambridge would have an important role in providing a flexible supply for B1a/b (offices and R&D) requirements.

6.2.11 The highest level of active mode **travel** (walking and cycling) is seen in this option (together with Options 2 and 3); the lowest car mode share is seen in this option.

6.2.12 As for the other options, Option 1 would be viable for residential and employment uses across all growth levels.

Option 1 - Densification of existing urban areas - Challenges

6.2.13 The positive performance on **carbon emissions** is slightly counter-balanced by having the least ability of the spatial options to provide enough on-site PV panels, so net emissions from home energy are actually the highest of the spatial options. Adding offsite renewables matched to their remaining energy demand could alleviate this.

6.2.14 There are some challenges related to **water issues** because of the high existing flood risk in parts of the urban area, and the smaller expected size of developments offering fewer transformational opportunities for blue-green infrastructure, flood risk reduction, and high quality resilient water recycling systems.

6.2.15 Option 1 would place the greatest burden on existing **infrastructure** in the city and presents challenges in terms of providing necessary incremental infrastructure improvements, especially where space is limited. Furthermore, there is greater potential for piece-meal delivery of **green infrastructure** associated with multiple smaller developments and the added challenge of significant 'space' constraints.

6.2.16 Densification options could have impacts on the **townscape** and wider **landscape** setting of Cambridge as they include higher densities that could introduce taller buildings within the city of Cambridge.

6.2.17 With regard to **housing**, densification is likely to deliver a greater proportion of smaller units in urban locations, which is not likely to achieve the required mix of housing to meet full market demand. Furthermore, there may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Waste Water Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site will be kept under review during the plan making process.

6.2.18 **Employment** uses such as wet lab research spaces and light industrial or warehousing are unlikely to be suited to city areas due to the high land and rental values and competition for land with housing and other uses. All growth level options may fail to provide sufficient industrial and warehousing floorspace requirements through intensification of the urban sites in the city alone.

Option 1 - Densification of existing urban areas - Issues arising from different growth levels

6.2.19 As with all other spatial options, for **water supply** the **minimum growth level option** is the most environmentally sustainable; and there are ‘deal breaker’ constraints on water supply for the **maximum growth level option** unless there are strategic interventions to improve water supply on an appropriate timescale.

6.2.19 The **medium and maximum growth options** are likely to have greater impacts on the **heritage, townscape and wider landscape** setting of Cambridge as they include higher densities that could introduce taller buildings within the city of Cambridge and additional sources of supply on greenfield land.

6.2.20 Under the **medium and maximum options**, there is increased risk of pressure on existing **green infrastructure** assets and a greater need to identify sufficient land to accommodate delivery of new green infrastructure close to the development.

6.3 Option 2 - Edge of Cambridge – Outside Green Belt

6.3.1 This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the Green Belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport. The airport was removed from the Green Belt in earlier plans and is safeguarded for development if the current use is relocated. Accordingly, it is tested here on a comparable basis to all other options.

6.3.2 **The Sustainability Appraisal concludes that Option 2 performs well** because it combines the benefits of growth on the edge of Cambridge, i.e. access to services, facilities and jobs in the city, with the benefits of larger developments (such as provision of new services and facilities) and by virtue of the fact that this option would result in a range of sources of supply, all of which bring different benefits.

6.3.3 The topic-based findings, however, make more of a distinction between different levels of growth, for example relying on predominantly large sites in the minimum and maximum options would result in challenges in meeting national requirements for a proportion of development to be on small sites.

Option 2 - Edge of Cambridge Outside Green Belt - Opportunities

6.3.4 For **carbon emissions** this is considered the fourth best option of all the spatial options, although this is influenced by sources of supply related to all levels of growth, which is considered to produce a very even blend, and hence mid-range emissions across the three sources of carbon emissions. The edge of Cambridge location performs well when looking at that location specifically, due to the benefits in terms of transport accessibility relative to other locations.

6.3.5 This is the most preferable spatial option (together with Option 4) with regard to **water**, as it has known or expected low flood risk, and large sites with good opportunities for blue-green infrastructure, flood risk reduction and high-quality resilient water recycling systems. Focusing growth at Cambridge Airport will provide opportunities to integrate a wider range of **green infrastructure** interventions associated with larger development.

6.3.6 Like Option 1, this option has high potential to provide more people with access by a range of sustainable modes of travel. These options could be more **inclusive** to more people as Cambridge has the broadest range of services and facilities, and the focus for many jobs. Development in a large urban extension provides a 'clean slate' whereby new accessible buildings, streets and the public realm can be designed from the outset to promote **equality**, catering for all abilities and needs. Larger scale development may be more likely to include new healthcare services on site.

6.3.7 With regard to **housing**, the proximity between jobs and homes, the ability to provide housing for ownership (including self/custom build), affordable and specialist housing are all positives of this option.

6.3.8 Cambridge Airport is anticipated to provide a good level of accessible **employment** to a significant labour pool in the city. Edge of Cambridge development will be well suited to higher density offices and 'dry lab' research type space. The volume of land available at the airport is anticipated to be able to provide for some of the more land hungry uses such as wet lab research spaces and light industrial or warehousing.

6.3.9 The highest level of active mode **travel** (walking and cycling) is seen in this option (together with Options 1 and 3).

6.3.10 As for the other options, Option 2 would be viable for residential and employment uses across all growth levels.

Option 2 - Edge of Cambridge Outside Green Belt - Challenges

6.3.11 There may be a risk to relying on **housing** delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. Deliverability will be an important factor when considering if the site is taken forward and the position will be kept under review during the plan making process as appropriate. This option is unlikely to deliver sufficient small sites to meet national requirements.

6.3.12 For **employment land** all growth options may fail to provide sufficient industrial and warehousing floorspace requirements through provision at Cambridge Airport alone.

6.3.13 Option 2 is likely to require new **infrastructure** to support growth, including decontamination of brownfield land; this may mean that the cost profile of development is weighted to the early part of the plan period and could present financing issues and also that completions remain low in early years.

6.3.14 Due to the open character of the Fen Edge Chalklands landscape context for Cambridge Airport, it is likely that the new urban edge would be a prominent feature in the landscape and require provision of appropriate strategic landscape mitigation and enhancement measures. In terms of heritage impacts, the airport has a control tower that is Grade 2 listed, so development of the airport could remove the historic context of this feature. Growth here also presents risks to the existing **green infrastructure** network; particularly relating to increased recreational pressure on sites, and potential impacts on wetland assets to the east and north east.

Option 2 - Edge of Cambridge Outside Green Belt - Issues arising from different growth levels

6.3.15 As with all other spatial options, for **water supply** the **minimum growth level option** is the most environmentally sustainable; and there are ‘deal breaker’ constraints on water supply for the **maximum growth level option** unless there are strategic interventions to improve supply on an appropriate timescale.

6.3.16 Under the **medium and maximum options**, there is increased risk of pressure on existing **green infrastructure** assets and a greater need to identify sufficient land to accommodate delivery of new green infrastructure close to the development. Also, these options introduce the need for additional development elsewhere to make up the numbers for the plan period, suggested as being through new settlements on public transport corridors, which may bring opportunities to integrate a wider range of green infrastructure opportunities associated with larger scale development.

6.3.17 The **minimum growth option** would only involve development at the airport and would result therefore in more limited impacts on distinctive local **landscape characteristics/features** and key views that contribute to the distinctive historic character and landscape setting of Cambridge. As they include additional sources of supply on largely undeveloped land, the **medium and maximum growth options** are likely to have greater impacts on the wider **landscape setting** of Cambridge – including potentially on key views of the City and from an increased sense of coalescence with the necklace of rural villages surrounding Cambridge.

6.3.18 The **medium growth option** based on the package of sites set out could deliver sufficient small sites at the villages to meet national requirements, but marginally would not be able to deliver a five-year **housing** land supply at adoption. There would be a marginal five-year housing land supply under the **minimum and maximum growth level options**.

6.4 Option 3 - Edge of Cambridge – Green Belt

6.4.1 This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

6.4.2 The Sustainability Appraisal finds that Option 3 performs well within the plan period by virtue of the fact that developments will be built out, and therefore provide new, associated infrastructure, within this timeframe. Whilst Option 3 is somewhat similar to Option 2, it includes less varied sources of supply by

focusing more growth around Cambridge city. This option is expected to include large urban extensions that will provide new services and facilities, as well as being well-located for services, facilities and jobs within Cambridge.

- 6.4.4 However, there is a risk that substantial growth around the city could put pressure on amenities within the city, would fail to support more rural settlements; and has potential for adverse impacts on the landscape and historic environment by extending the urban influence of the city and affecting views into and out of the historic centre, thereby affecting the setting of the city.

Option 3 - Edge of Cambridge Green Belt - Opportunities

- 6.4.5 This option's focus on the Green Belt fringe provides an opportunity for urban extensions to cater for **green infrastructure** deficits in neighbouring urban areas. There are also opportunities associated with the requirement of the NPPF for the release of Green Belt sites to positively enhance the remaining Green Belt.
- 6.4.6 Like Options 1 and 2, this option has high potential to provide more people with access by a range of sustainable modes of travel. These options could be more **inclusive** to more people as Cambridge has the broadest range of services and facilities, and the focus for many jobs. Development in large urban extensions provide a 'clean slate' whereby new accessible buildings, streets and the public realm can be designed from the outset to promote **equality**, catering for all abilities and needs. Larger scale development may be more likely to include new healthcare services on site.
- 6.4.7 For **housing**, the proximity between jobs and homes, the ability to provide housing for ownership (including self/custom build), affordable and specialist housing are all positives of this option.
- 6.4.8 This option is anticipated to provide a good level of accessible **employment** to a significant labour pool in the city. Edge of city development will be well-suited to higher density offices and 'dry lab' research type space as well as more land hungry uses such as wet lab research spaces and light industrial or warehousing. This option is likely to be able to provide sufficient industrial and warehousing floorspace requirements if sufficient land is released.
- 6.4.9 The highest level of active mode **travel** (walking and cycling) is seen in this option (together with Options 1 and 2), but it has some travel challenges (see below). In terms of **carbon**, it is the second lowest for embodied carbon due to having a reasonably high number of flats and smaller houses, but predominantly due to low assumed new supporting infrastructure due to the

accessibility of nearby existing facilities. In the carbon study the urban fringe is assumed to have medium public travel accessibility and hence transport emissions. The edge of Cambridge location performs well when looking at that location specifically, due to the benefits in terms of transport accessibility relative to other locations. It is of medium density, hence medium ability to provide renewables on-site and therefore medium building energy emissions.

6.4.10 As for the other options, Option 3 would be viable for residential and employment uses across all growth levels.

Option 3 - Edge of Cambridge Green Belt - Challenges

6.4.11 In terms of **carbon emissions** this is the fifth best option when considering the mix of sites that were applied. Use of greenfield land on the edge of the Cambridge could result in landscape changes that would alter the **setting of the city**, particularly in relation to the historic core, and could affect views in and out of the city and would also be likely to affect the setting of the historic city.

6.4.12 Option 3 would be unlikely to meet the small **housing** sites requirement under the NPPF. Other challenges on housing delivery under different growth options are set out in the following issues arising section.

6.4.13 For aspects of **transport** – including distance travelled, travel time and delay - this option performs similarly well to Option 2, and is a medium performing option overall in transport terms. In comparison with Option 2 however, development in this option could be located further away from the existing facilities within Cambridge. and as such could require additional public transport improvements and increased associated costs.

Option 3 - Edge of Cambridge Green Belt - Issues arising from different growth levels

6.4.14 As with all other spatial options, for **water supply** the **minimum growth level option** is the most environmentally sustainable; and there are ‘deal breaker’ constraints on water supply for the **maximum growth level option** unless there are strategic interventions to improve supply on an appropriate timescale.

6.4.15 Moving to higher delivery numbers under the **medium and maximum growth options** incurs greater potential for loss of land within Natural England **Habitat** Network mapping opportunity areas which may otherwise be available for habitat enhancement and creation to alleviate existing pressures

and future opportunities. In addition, there is some sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance.

- 6.4.16 The **minimum growth option** would result in more limited impacts on distinctive local **landscape characteristics/features** and key views that contribute to the distinctive historic character and landscape setting of Cambridge.
- 6.4.17 As they include additional sources of supply on greenfield land, the **medium and maximum growth options** are likely to have greater impacts on the wider **landscape setting** of Cambridge – including potentially on key views of the City and from an increased sense of coalescence with the necklace of rural villages surrounding Cambridge.
- 6.4.18 Option 3 would be able to deliver a five-year **housing** land supply at plan adoption under the **minimum growth option**; and marginally unable to deliver a five-year supply at plan adoption under the **medium growth option**. It would not be able to deliver a five-year housing land supply under the **maximum growth option**.
- 6.4.19 There is the potential for the Green Belt site allocations to compete with each other and reduce delivery rates under the **medium and maximum growth options** as they would be delivering a similar product in a similar location concurrently at scale.

6.5 Option 4 - Dispersal – New Settlements

- 6.5.1 New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.
- 6.5.2 **The Sustainability Appraisal concludes that Option 4 performs well** in terms of social objectives, particularly when fully built out, as all new settlements are expected to be of a size that provides for the day to day needs of residents. This includes provision of features such as schools, health care, recreation and leisure facilities. In addition, new settlements can be designed in a way that encourages walking and cycling and incorporates good green infrastructure networks.
- 6.5.3 However, new settlements result in large-scale landscape change and may be of a scale where it is difficult to avoid intersecting with environmental or heritage assets, areas at risk of flooding or source protection zones. In addition, new settlements have a long lead-in time and relying solely on new

settlements to deliver growth may lead to a lack of housing availability earlier in the plan period and a period of disconnect between when housing is delivered and when jobs and supporting infrastructure is delivered. In order to ensure sustainable behaviours are encouraged in new settlements, it is important to avoid the need for residents to travel for work and services at the outset, otherwise these may become ingrained travel patterns.

Option 4 - Dispersal New Settlements - Opportunities

- 6.5.4 With regard to **carbon emissions** this is the third best option as it creates mid-range transport carbon emissions. However, embodied carbon is high due to the need for additional supporting infrastructure and the likely predominance of larger houses rather than more efficient flats.
- 6.5.5 This is the most preferable spatial option (together with Option 2) with regard to **water**, as site selection can result in known or expected low flood risk, and large sites with good opportunities for blue-green infrastructure, flood risk reduction and high-quality resilient water recycling systems.
- 6.5.6 Establishing new settlements on public transport corridors provides an opportunity to integrate a wider range of **green infrastructure** opportunities associated with larger scale development. Landscape-led masterplanning could accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources.
- 6.5.7 New settlements, depending on their size, can be planned to be self-contained by co-locating a broad range of jobs, houses and facilities and services. This provides positive outcomes with regard to **equalities and inclusivity**.
- 6.5.8 Development in new settlements or large urban extensions provide a 'clean slate' whereby new accessible buildings, streets and the public realm can be designed from the outset to cater for all abilities and needs. This option may be more likely to include new healthcare services on site. New settlements (larger existing settlements) could act as a local hub for surrounding smaller communities, to avoid the need to travel longer distances to market towns or Cambridge for all their needs, provided access issues could be overcome.
- 6.5.9 By focusing on new settlements to accommodate growth, this spatial option provides opportunities for high quality and distinctive housing design that is responsive to local **character** and creates a strong sense of place through a comprehensive masterplanning process. There may also be opportunities to avoid heritage impacts, but would depend on location.

- 6.5.10 Option 4 provides opportunities to deliver new **housing** at scale towards the mid to latter parts of the plan period. The ability to provide a wide range of dwelling types and sizes is likely, supporting higher delivery rates; and provision of housing for ownership (including self/custom build) and affordable housing are all opportunities arising from this option.
- 6.5.11 New settlement development will be well suited to accommodating the full range of **employment** land uses, including offices, labs and warehousing industrial given opportunities for available land. This suggests that spatial proximity is unlikely to be a key factor in generating new economic development, although professional services offices in particular cluster near to the city. The south/south east of South Cambridgeshire has generally been more successful in developing life science related employment. The location of a new settlement may therefore have a bearing on its level of employment success.
- 6.5.12 All levels of growth focus development on enhanced public transport corridors. Depending on the distribution of growth adopted, this could provide the necessary critical mass around new transport nodes required to fund the necessary **infrastructure** improvements.
- 6.5.13 As for the other options, Option 4 would be viable for residential and employment uses across all growth levels.

Option 4 - Dispersal New Settlements - Challenges

- 6.5.14 Reliance on conventional public **transport** may not be an option for people with some disabilities. Depending on the location of new settlements and supporting infrastructure, there is an increased risk of impact on **international designation** and/or functionally linked habitat.
- 6.5.15 For **housing**, competition with existing committed new settlement sites in the mid to latter part of the plan period may flood the market with similar products in similar locations, thus reducing build-out rates. It is also unlikely to deliver sufficient small sites to meet NPPF requirements.
- 6.5.16 Under all growth options the market's preference would be to see new B1a (offices) and some B1b (R&D) **employment** space delivered in close proximity to the city.
- 6.5.17 For some aspects of **transport** - distance travelled, travel time and delay - this option is the second least well-performing out of the eight.

Option 4 - Dispersal New Settlements - Issues arising from different growth levels

6.5.18 As with all other spatial options, for **water supply** the **minimum growth option** is the most environmentally sustainable; and there are ‘deal breaker’ constraints on water supply for the **maximum growth option** unless there are strategic interventions to improve supply on an appropriate timescale.

6.5.19 The **minimum growth option** focussing on new settlements would result in more limited impacts on distinctive local **landscape characteristics/features** that contribute to the character of the Greater Cambridge landscape, compared to the other growth levels for this option. The **medium and maximum growth options** are likely to have greater impacts on the Greater Cambridge **landscape** – including potentially on the landscape setting of rural historic villages – as they include additional sources of supply on greenfield land. Also, large numbers of sites would be more likely to result in impact on heritage assets.

6.5.20 Option 4 would be able to deliver a five-year **housing** land supply at plan adoption under the **minimum growth option**. It would be unable to demonstrate a five-year housing land supply at plan adoption under the **medium or maximum growth option**, requiring more short-term allocations or a stepped annual housing requirement.

6.5.21 The **minimum growth option** focussing on new settlements would result in more limited impacts on distinctive local **landscape characteristics/features** that contribute to the character of the Greater Cambridge landscape, compared to the other growth levels for this option.

6.5.22 The **medium and maximum growth options** are likely to have greater impacts on the Greater Cambridge **landscape** – including potentially on the landscape setting of rural historic villages – as they include additional sources of supply on greenfield land.

6.6 Option 5 - Dispersal – Villages

6.6.1 This approach would spread new homes and jobs out to the villages.

6.6.2 **The Sustainability Appraisal finds that Option 5 performs least well** against many sustainability objectives and overall. This is because it is likely to lead to a series of small developments that will not provide the critical mass to provide new services and facilities, resulting in capacity and demand constraints. More dispersed development is more likely to be car-dependent

and, again, may not provide the critical mass required to focus improvements to the public transport network.

- 6.6.3 Whilst this option is likely to result in development in close proximity to sensitive environmental assets, it may have a lesser effect on these than options likely to result in large-scale development. In addition, this option could help to support the rural economy. Overall, a small level of growth at more rural settlements would likely have positive sustainability implications, but not as the primary focus of growth.

Option 5 – Dispersal Villages - Opportunities

- 6.6.4 For **housing**, this option would result in multiple smaller sites that are likely to be deliverable in the short to medium term; this would also meet the NPPF requirement to allocate a percentage of small sites. **All growth options** can demonstrate a five-year housing land supply at plan adoption. Deferring a proportion of site allocations to Neighbourhood Plans could spread delivery across the plan period therefore making it less likely to result in the loss of a five-year housing land supply, but it would rely on local communities bringing forward Neighbourhood Plans with sufficient housing allocations.

- 6.6.5 The availability of land tends to make village locations suitable to all **employment** uses including offices, wet labs and warehousing/industrial. This option could provide sufficient industrial and warehousing floorspace under **all growth options** if the locations have good accessibility, particularly via the strategic road network. There are, however, also shortcomings with regard to employment (see below).

- 6.6.6 As for the other options, Option 5 would be viable for residential and employment uses across all growth levels.

Option 5 - Dispersal Villages - Challenges

- 6.6.7 Option 5 is the worst option for **carbon emissions**. It has the worst transport links by a substantial margin and a slightly higher embodied carbon due to low rise detached housing and necessary supporting infrastructure. In contrast, it has the best net building energy performance, because the lower density makes it the most able to provide substantial renewable energy on-site through PVs. Overall, the carbon cost of the transport far outweighs the smaller benefit from the increased PV, making this the most carbon-intensive option.

- 6.6.8 There are some challenges related to **water issues** because of the high existing flood risk in some villages, and the smaller expected size of

developments offering fewer transformational opportunities for blue-green infrastructure, flood risk reduction, and high quality resilient water recycling systems.

- 6.6.9 This option increases the likelihood of piecemeal **green infrastructure** interventions associated with multiple smaller developments, as opposed to delivering strategic opportunities. This may lead to greater challenges in delivering integrated ecological networks.
- 6.6.10 Villages typically have fewer services and facilities and so residents are more likely to rely on car use which could negatively impact on **equalities and inclusivity**, particularly for younger and older people who are unable to drive or own a car. Unless villages are located close to or on one of the radial routes into Cambridge the choice of travel options may be limited and/or costly. Unless jobs are also dispersed in the rural area, it would not redress the jobs/homes balance, impacting on working age people.
- 6.6.11 Growth of villages could impact on the historic character of villages, which contain large numbers of heritage assets, and conservation areas.
- 6.6.12 Across all three growth options **housing** delivery is mainly required in the mid to latter part of the plan period. This option mainly delivers medium-term sites, so would not be adding supply at the latter part of the plan period. Market-led sites are less likely to deliver affordable housing because small sites fall below the threshold for contribution and/or registered providers are unable or unwilling to manage small numbers. Also, greater market delivery at villages would likely result in a reduction in the number of exception sites taken forward. Fewer small dwellings are likely to be delivered, especially apartments, limiting delivery rates overall. Furthermore, smaller sites are unlikely to deliver private rented supply, including Build to Rent.
- 6.6.13 Dispersed **employment** across villages is likely to inhibit the ability of larger employment development to agglomerate. The accessibility of individual locations to only limited labour pools may affect their economic development capability. Spreading employment to villages will be contrary to office market preferences for the city centre and city fringe locations, and so will weaken deliverability.
- 6.6.14 With regard to **transport**, the car mode share is highest in this option (this is the only spatial option where the biggest increase in mode share is not in active modes – walking and cycling). For distance travelled, travel time and delay, this option is the least well-performing out of the eight.

6.6.15 Option 5 will place burdens on existing **infrastructure**; combined with a dispersed pattern of development, this means that the proportionate cost of infrastructure is likely to be greater as it is used less intensively or generates the need to travel further.

Option 5 – Dispersal Villages - Issues arising from different growth levels

6.6.16 As with all other spatial options, for **water supply** the **minimum growth option** is the most environmentally sustainable; and there are ‘deal breaker’ constraints on water supply for the **maximum growth option** unless there are strategic interventions to improve supply on an appropriate timescale.

6.6.17 The smaller villages dominated by historic cores with distinctive landscape settings have sensitive **townscape/landscape characteristics** that are likely to be more vulnerable/susceptible to changes from growth than, typically, the larger villages within Greater Cambridge where their character is dominated by 20th/21st Century peripheral estate development. The **minimum growth option** focussing on dispersal of growth to the villages would result in more limited impacts on distinctive local characteristics/features.

6.6.18 Higher dwelling numbers associated with the **medium and maximum options** incurs potential for a wider scale of impacts risk across designated sites and notable habitats. However, the higher concentrations within individual villages under these growth options may present opportunities to deliver **green infrastructure** that can address existing deficiencies in access to open space.

6.6.19 For the **maximum growth option** it is unlikely that **employment** use requirements for B1ab (offices and R&D) can readily be met at dispersed village locations, particularly given that there are higher levels of R&D needs in particular.

6.7 Option 6 - Public Transport Corridors

6.7.1 This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

6.7.2 **The Sustainability Appraisal concludes for Option 6** that it provides good accessibility to services and facilities for all and will help minimise traffic-related emissions of greenhouse gases and air pollutants. However, it could result in development in areas with high environmental sensitivity. In addition,

there is a risk that development in more rural areas under this option could be more distant for services, facilities and employment opportunities.

Option 6 - Public Transport Corridors - Opportunities

- 6.7.3 This is the second best option for **carbon emissions**. This option has a mixture of homes in urban settings and settlements on public transport corridors, hence it has good transport links and therefore second lowest transport carbon. This is slightly countered by a medium efficiency of materials used due to the mix of low and higher rise construction, and a mixed ability to provide enough on-site PV panels for the same reason.
- 6.7.4 These larger scale developments provide opportunities to integrate a wider range of **green infrastructure** opportunities; including opportunities for landscape-led masterplanning and planning in active travel networks to increase GI connectivity.
- 6.7.5 With regard to **equalities**, radial routes into Cambridge are the main transport corridors and the focus for future infrastructure improvements, including public transport (and transport nodes), which should improve the non-car mode options for people living on or close to these corridors. Spatial options which connect communities to transport corridors may provide better accessibility to Cambridge or the market towns by public transport and cycling.
- 6.7.6 This option would provide good commuting relationship between **jobs and homes** to meet demand where it exists. Development in accessible villages, urban extensions and new settlements provides opportunities for higher density, build-to-rent, and affordable housing. The option can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates.
- 6.7.7 **Employment** located at transport hubs will broadly enable good labour market accessibility and support economic growth. Employment at transport hubs for existing or new settlements is likely to be suitable for a range of employment premises including offices, labs, industrial and warehousing. For all growth options, this option could provide sufficient industrial and warehousing floorspace if the locations have good accessibility, particularly via the strategic road network.
- 6.7.8 As for the other options, Option 6 would be viable for residential and employment uses across all growth levels.

Option 6 - Public Transport Corridors - Challenges

- 6.7.9 Development at North East Cambridge may place additional recreational pressure on key **green infrastructure** assets, including the wetland assets to east and north. Furthermore, there may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Waste Water Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site will be kept under review during the plan making process.
- 6.7.10 Public transport might not be an option for some disabled people or an affordable choice for people on low incomes, impacting **equalities and inclusivity**. Rural areas can be remote and involve long distances, so that cycling would not be an option for many people.
- 6.7.11 The Sustainability Appraisal highlights that there are a number of listed buildings, scheduled monuments and registered parks and gardens across Greater Cambridge, it is possible that development could be located within close proximity to one or more such assets. In particular, the public transport corridors to the west and south west have a number of listed buildings, conservation areas and registered parks and gardens within close proximity that may be affected by development.
- 6.7.12 Higher density uses would typically locate in closest proximity to public transport accessibility nodes, albeit competition with the city market for prime offices is expected to temper growth. Furthermore, spreading **employment** outside Cambridge will be contrary to prime office market preferences for city centre and city fringe locations. Secondary offices and lab development is more likely to be successful at hubs where land is available and workforce is accessible. For all growth options, the market's preference would be to see new B1a (offices) and some B1b (R&D) space delivered in close proximity to the city.
- 6.7.13 The distribution of growth along public transport corridors may mean that development can contribute to the cost of new public **transport infrastructure**; however, the distribution of the balance of growth beyond the one new settlement risks giving rise to the inefficiencies identified in Option 5 (villages), particularly in relation to social, green and sport and leisure infrastructure.

Option 6 - Public Transport Corridors - Issues arising from different growth levels

6.7.14 As with all other spatial options, for **water supply** the **minimum growth option** is the most environmentally sustainable; and there are ‘deal breaker’ constraints on water supply for the **maximum growth option** unless there are strategic interventions to improve supply on an appropriate timescale.

6.7.15 The **minimum growth option** focusing on new settlements on public transport corridors would result in more limited impacts on distinctive local **landscape characteristics/features** that contribute to the character of the Greater Cambridge landscape, compared to the other growth options. The **medium and maximum growth options** are likely to have greater impacts on the Greater Cambridge landscape – including potentially on the landscape setting of rural historic villages along the public transport corridors – as they include additional sources of supply on greenfield land. Where villages are located in close proximity to designated or non-designated sites, there is potential for impacts on these and the wider ecological network.

6.7.16 For **housing**, Option 6 would be able to demonstrate a five-year housing land supply at plan adoption under the **minimum growth option** and marginally under the **maximum option**. It marginally does not demonstrate a five-year housing land supply at plan adoption under the **medium option**, however it would do with a smoother trajectory for village allocations delivering sooner after plan adoption. It should be possible to deliver small sites under the **medium and maximum options** to meet NPPF requirements, but not under the **minimum option**.

6.8 Option 7 - Integrating jobs and homes – southern cluster

6.8.1 This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

6.8.2 The **Sustainability Appraisal** finds that for many objectives, Option 7 performs similarly to Option 6 as it will locate homes within easy access of employment and also likely within easy access of services and facilities. Together, this will help boost the local economy by attracting workers to the area and minimise emissions of greenhouse gases and air pollutants as many residents will likely find employment near their homes.

6.8.3 However, there are some environmentally sensitive features to the south of Cambridge, which would be the focus for development under this option, such

as historic assets and high quality agricultural land, which could be damaged or lost to development.

Option 7 - Integrating jobs and homes southern cluster – Opportunities

- 6.8.4 With regard to **equalities**, supporting homes in the technology corridor would help to integrate homes with jobs to redress the current imbalance and significantly reduce the need and distances travelled by employees. Integrating homes and jobs in technology clusters would only benefit people of working age, although it could benefit people who have mobility issues to live closer to their place of work and avoid having to overcome transport issues, subject to appropriate public transport provision.
- 6.8.5 Focusing growth in one area would reduce **landscape** changes across the wider Greater Cambridge landscape; and provides opportunities for **habitat enhancement**. These could collectively serve to support flood management, biodiversity and carbon capacity.
- 6.8.6 Under Option 7 there would be a good relationship between **jobs and homes**. The focus on the south of the city will reduce competition with committed new settlements to the north and west of Cambridge, minimising absorption rate issues. There would be opportunities for higher density, build-to-rent, and affordable housing; and village locations along the corridors where larger family/executive homes may be appropriate would maximise the opportunities for higher build-out rates. The option will deliver small sites in villages to help meet the NPPF small sites requirement.
- 6.8.7 **Employment** provision around the south of Cambridge is anticipated to provide a reasonable level of accessible employment to a significant labour pool in the city. This location will be well-suited to offices and ‘dry lab’ research type space as well as more land hungry uses such as wet lab research spaces and light industrial or warehousing. For all growth options, Option 7 could deliver sufficient industrial and warehousing floorspace if sufficient land is provided for and has good accessibility via the strategic road network.
- 6.8.8 As for the other options, Option 7 would be viable for residential and employment uses across all growth levels.

Option 7 - Integrating jobs and homes southern cluster - Challenges

- 6.8.9 This option has the majority of homes in new settlements on transport nodes, with some homes in dispersed villages. The effect of this is to create the

second highest **carbon emissions** overall, predominantly due to the transport emissions from the dispersed village homes. There is also more embodied carbon due to the lower density housing and significant new supporting infrastructure required for new settlements and villages.

6.8.10 Focusing growth on one area could lead to adverse impacts upon distinctive, local landscape characteristics and features. In general terms, the River Valley and Chalk Hills have sensitive **landscape characteristics** that are likely to be more vulnerable/susceptible to changes from development focused on the southern cluster than the Lowland Claylands landscape type within this part of Greater Cambridge. The Sustainability Appraisal highlights that there are a number of listed buildings, scheduled monuments and registered parks and gardens across Greater Cambridge, it is possible that development could be located within close proximity to one or more such assets. In particular, the public transport corridors to the west and south west have a number of listed buildings, conservation areas and registered parks and gardens within close proximity that may be affected by development.

6.8.11 Distributing additional housing to 14 villages in this area presents potential for impacts on designated or non-designated sites and the **wider ecological network** where these are in close proximity.

6.8.12 Under this option there is a reliance on performance of the high-tech sectors of the economy in this area and demand for homes tied to this, rather than spreading the **jobs and homes** relationship more widely.

6.8.13 With regard to **employment**, the prime office market is concentrated on the centre and north of the city. Establishing the south as an additional location may be challenging. However, wet lab research space will be highly attractive to the market, together with a range of dry lab facilities and ancillary offices.

Option 7 - Integrating jobs and homes southern cluster - Issues arising from different growth levels

6.8.14 As with all other spatial options, for **water supply** the **minimum growth option** is the most environmentally sustainable; and there are 'deal breaker' constraints on water supply for the **maximum growth option** unless there are strategic interventions to improve supply on an appropriate timescale.

6.8.15 The **minimum growth option** focusing on the southern cluster would result in more limited impacts on distinctive local **landscape characteristics/features** that contribute to the character of the Greater Cambridge landscape, compared to the other growth options. The **medium and maximum growth**

options are likely to have greater impacts on the Greater Cambridge landscape as they include additional sources of supply on greenfield land.

6.8.16 At the **medium and maximum levels** the greater scale of development may incur greater magnitude of impacts. Greater concentration within fewer villages may increase potential for delivery of more strategic **green infrastructure** opportunities, particularly those related to active transport.

6.8.17 A five-year **housing** land supply can be achieved under the **minimum growth option**, but marginally not under the **medium option**, however it would do with a smoother trajectory for village allocations delivering sooner after plan adoption. It is not possible to demonstrate a five-year housing land supply under the **maximum growth option**.

6.8.18 Under the **maximum option** there is a risk in relying on high delivery rates at North East Cambridge and Cambridge Airport during the middle of the plan period. For North East Cambridge this is subject to progress in the process to relocate the Cambridge Waste Water Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site will be kept under review during the plan making process. For Cambridge Airport this is notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. Deliverability will be an important factor when considering if the site is taken forward and the position will be kept under review during the plan making process as appropriate.

6.8.19 Apart from under the **minimum level of growth**, this spatial option results in dispersed growth across the area, including outside main public transport corridors which might result in a greater **infrastructure** cost burden. The maximum growth level would mitigate this risk to some extent due to the large scale of the new settlement proposed which provides scope for critical mass and efficiencies.

6.9 Option 8 - Growth focussed on Public Transport Nodes – Cambourne / A428

- 6.9.1 This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.
- 6.9.2 **The Sustainability Appraisal finds that** development would be well-located for Cambourne's existing services and facilities whilst providing new and/or expanded facilities too. It is also in a less sensitive area in terms of environmental and historic assets. This option performs relatively poorly within the plan period, as it is unlikely that the full infrastructure to support development will be provided, but it performs well when fully built out. The introduction of a new railway station and the Cambridge Autonomous Metro will greatly improve sustainable transport options at this location in the long term, which are likely to be attractive to residents.
- 6.9.3 However, there is a substantial amount of uncertainty about when these will be delivered and the ranking of this option is dependent on delivery of those links. It is also noted that growth outside of Cambourne (i.e. in the villages) may put pressure on local services and facilities and have greater car dependency.

Option 8 - Growth focussed on Public Transport Nodes Cambourne / A428 - Opportunities

- 6.9.4 There is potential to further develop active transport connections linking **green infrastructure** assets with managed capacity for recreational access to alleviate demand/potential demand on those with sensitive hydrological or ecological features.
- 6.9.5 In general terms, the Wooded Claylands **landscape** type is considered to offer potential opportunities to accommodate growth focussing on the expansion of Cambourne along the A428 public transport to the west of Cambridge. Cambourne has a few listed buildings and does not contain any conservation areas, scheduled monuments or registered parks and gardens. development close to Cambourne is unlikely to affect much in the way of historic assets or features.
- 6.9.6 Option 8 provides for a good commuting relationship between **jobs and homes** to meet demand where it exists, on the assumption that new jobs would be delivered. There would be opportunities for higher density, build-to-rent, and affordable housing; and village locations along the corridors where

larger family/executive homes may be appropriate would maximise the opportunities for higher build-out rates. The option will deliver small sites in villages to help meet the NPPF requirement.

- 6.9.7 **Employment** located at transport nodes around Cambourne will broadly enable good labour market accessibility to employment locations and support economic growth. East West Rail and the CAM are likely to significantly improve accessibility, enhancing commutability. Employment at transport hubs for existing or new settlements is likely to be suitable for a range of employment premises including offices, labs, industrial and warehousing. Take-up for office space has historically been slow at Cambourne but has improved in recent years.
- 6.9.8 As for the other options, Option 8 would be viable for residential and employment uses across all growth levels.

Option 8 - Growth focussed on Public Transport Nodes Cambourne / A428 - Challenges

- 6.9.9 This is the sixth best option for **carbon emissions** as it produces mid-range emissions across the range of emissions sources but transport is slightly higher than average due to the development in dispersed villages. With regard to **transport**, for distance travelled, travel time and delay this option sees a significant increase for all three in the PM peak.
- 6.9.10 Although Option 8 has good opportunities for **water resources** with the potential to be supplied by bulk transfer, these are offset by the significant capacity constraints for WRC at Bourn and Uttons Drove. Therefore, if this option were to be selected, further work would be necessary to confirm what mitigation measures are technically feasible at these sites, or what alternative provision could be developed.
- 6.9.11 There is a risk of development which may extend or exacerbate existing north-south severance; but also an opportunity to introduce **green infrastructure** connectivity across the A428 corridor. This option also distributes development to a number of villages. Where villages are located in close proximity to designated or non-designated sites, there is potential for impacts on these and the wider ecological network.
- 6.9.12 To the south and north east of Cambourne there are registered parks and gardens. To the south and west there are scheduled monuments. Although development close to Cambourne is unlikely to affect much in the way of historic assets or features, development in surrounding villages or rural locations could have a greater affect.

- 6.9.13 The lead-in times for strategic transport infrastructure delivery such as East-West Rail, the proposed new station at Cambourne and Cambridgeshire Autonomous Metro may delay additional **housing delivery** until after the infrastructure is operational.
- 6.9.14 Spreading **employment** outside Cambridge will be contrary to prime office market preferences for the city centre and city fringe locations. Secondary offices and lab development is likely to be successful around Cambourne with improved accessibility.
- 6.9.15 Focusing growth at Cambourne is likely to tie development to the delivery of large-scale transport **infrastructure**; delays to the delivery of that infrastructure which may be outside the control of the constituent authorities may act as a brake on development.

Option 8 - Growth focussed on Public Transport Nodes Cambourne / A428 - Issues arising from different growth levels

- 6.9.16 As with all other spatial options, for **water supply** the **minimum growth option** is the most environmentally sustainable; and there are 'deal breaker' constraints on water supply for the **maximum growth option** unless there are strategic interventions to improve supply on an appropriate timescale.
- 6.9.17 The **minimum growth option** would result in more limited impacts on distinctive local **landscape characteristics**/features that contribute to the character of the Greater Cambridge landscape, compared to the other growth levels for this option. The **medium and maximum growth options** are likely to have greater impacts on the Greater Cambridge landscape as they include additional sources of supply on greenfield land.
- 6.9.18 Option 8 can demonstrate a five-year housing land supply at plan adoption under the **minimum and medium growth options**; but it cannot demonstrate a supply under the **maximum option**.
- 6.9.19 The **medium and maximum growth options** focus a significant amount of development concurrently at Cambourne and along the wider A428 corridor, which creates a risk of market saturation and absorption rate issues. Under the **maximum option** there is a risk in relying on high delivery rates at North East Cambridge and Cambridge Airport during the middle of the plan period. For North East Cambridge this is subject to progress in the process to relocate the Cambridge Waste Water Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund

and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site will be kept under review during the plan making process. For Cambridge Airport this is notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. Deliverability will be an important factor when considering if the site is taken forward and the position will be kept under review during the plan making process as appropriate.

7. Key Findings and Issues

7.1 Introduction

7.1.1 This final section draws out some overarching findings, issues and themes with regard to the testing and assessment of the spatial and growth level options in the proceeding section. These are presented neutrally, without overlaying any value judgements about the performance of the various options. This will avoid prejudging the outcomes of the stakeholder engagement and subsequent work undertaken by the Councils to determine a preferred development strategy, once the evidence base is finalised.

7.1.2 This section also includes some commentary on broader issues and risks that could have a bearing on the next stage of the plan-making process.

7.2 Findings, Issues and Themes

7.2.1 The introduction to section 5 of this report noted that for some of the topics covered it is not possible at this stage to draw firm conclusions that differentiate substantively between the various options, particularly as some topics rely on more site-specific information.

7.2.2 There are, however, a number of firm, overarching conclusions that can be drawn at this stage. Firstly, most of the topic-based studies find that the minimum growth level option for most spatial options will have more limited effects than the higher two growth level options. This is most obviously seen across all the spatial options with regard to water supply. The minimum option is considered the most environmentally sustainable, but the maximum level of growth would result in significant constraints (referred to as 'deal breaker' constraints). Similarly, for the maximum growth level option across all spatial options the requisite housing numbers would not be deliverable at current optimum market rates and under current structural conditions.

7.2.3 The studies do not conclude, however, that these constraints may not be absolute barriers to achieving the highest growth levels tested, but rather that they cannot be achieved through 'business as usual'. Significant strategic interventions would be needed in both instances to have confidence that these currently unprecedented levels of growth are achievable over the time period of the Local Plan. This is likely to require government support both financially to invest in regional scale infrastructure, or through structural interventions, to drive forward growth at these higher levels.

- 7.2.4 Other significant findings can be related to the Big Themes that guide the Local Plan strategy. The Zero Carbon study is clear that while it is possible to mitigate carbon from new buildings, the carbon emissions from transport are more significant with regard to the location and distribution of growth.
- 7.2.5 Unsurprisingly, therefore, there is an explicit relationship between the testing outcomes for transport modes and the extent of carbon emissions. Options 1 (densification of urban areas), 2 (Cambridge edge non-Green Belt), 4 (new settlements) and 6 (public transport corridors) all perform well relative to other options with regard to carbon emissions, largely because they have some of the best relative outcomes for active travel (walking and cycling), low car mode share (Options 1 and 2) or public transport opportunities (Options 4 and 6). Like Options 1 and 2, Option 3 (Cambridge edge Green Belt) performs well with regard to some transport issues. However, the carbon study indicates that this urban fringe option is assumed to have medium public transport accessibility and therefore higher transport emissions.
- 7.2.6 Conversely, the least well-performing option for carbon emissions, Option 5 (village dispersal), is also the least well-performing with regard to all transport metrics. This has knock-on implications for those spatial options that include development at villages as a substantive part of the assumed land supply – particularly Options 7 (supporting a high-tech corridor by integrating homes and jobs (southern cluster)) and 8 (expanding a growth area around transport nodes (western cluster)). If these options were pursued, it may be possible to focus on the most accessible locations to sustainable transport opportunities.
- 7.2.7 There are recognised pressures from development on existing green infrastructure in or close to existing settlements; and smaller sites are more likely to have challenges in responding to larger-scale green infrastructure needs. Consequently, Options 1 and 5 perform less well relative to other options.
- 7.2.8 Options involving larger-scale developments are more likely to provide a greater critical mass to respond effectively to green infrastructure needs. The effect of the spatial options on landscape and townscape character is in large part dependent on the levels of growth involved. This is particularly the case for higher density options.
- 7.2.9 A range of housing policy and delivery issues are highlighted in the options testing. Some, most notably five year housing land supply issues, have greatest significance for different growth levels. This issue may, therefore, have implications for the phasing of housing delivery across the life of the plan. For some options, there is concern about housing delivery rates from competing sites or risks relating to site dependencies, particularly relocating

existing users or the availability of strategic infrastructure, most notably East-West Rail and the CAM. A stepped trajectory could also be considered, with higher rates in the later part of the plan period responding to the time it could take to increase rates. This could also help to respond to the challenges related to water supply.

7.2.10 For jobs, whether a particular location and/or development type is likely to be able to accommodate some or all of the identified uses (offices, R&D and light industry/warehousing) is largely dependent on the size and type of sites involved; the availability of an appropriate labour pool; and the likely market response (for example, the primary office market is located in Cambridge so establishing secondary markets further out from the city may present some challenges).

7.2.11 For transport, the modelling suggests that some clear conclusions can be drawn with regard to the best performing options with low car mode share (Option 1); or high levels of active travel (Options 1, 2 and 3) because of their proximity to Cambridge.

7.2.12 Turning to the availability and provision of infrastructure, as with other options the scale of development and proximity to Cambridge both have a bearing on the opportunities and challenges. The opportunities focus on those options which would create a sufficient critical mass from development to fund and deliver significant new or enhanced infrastructure (Options 4 and 6).

7.2.13 Taking these findings as a whole, a number of themes and overarching issues emerge. Spatially, proximity to Cambridge has a bearing on a range of issues raised by the options testing: access to sustainable transport, while reducing the need to travel and so reduce carbon emissions; access to primary employment markets and a strong labour pool (both of which promote equalities); implications for protected townscape from higher density development; and pressures on existing infrastructure.

7.2.14 Conversely, for options that might locate development outside the city the importance of sustainable travel options through public transport is significant. Also important is promoting opportunities for a degree of self-containment through, for example, locating homes and jobs together.

7.2.15 Site size with regard to standalone options emerges as an important consideration in terms of meeting national policy requirements for a percentage of small sites; providing sufficient 'critical mass' to fund new infrastructure; or to provide space for strategic green infrastructure or land-intensive employment uses.

7.2.16 More focused issues arise with regard to the more locationally-specific options. These include the potential risks created by funding and delivery of strategic infrastructure such as East-West Rail or the CAM based on the level of certainty at this time; and the availability of strategic development locations at North East Cambridge and Cambridge airport with the need to relocate existing users.

7.3 Other Issues

7.3.1 The choice of a preferred option and progress of the Greater Cambridge Local Plan more generally need to be placed in a wider context. Despite the strength of the area's economy, the UK as a whole is facing a period of prolonged economic uncertainty as a result of the Covid-19 pandemic and the UK's decision to leave the European Union. This presents particular challenges and uncertainty in relation to planning for future employment needs and related housing.

7.3.2 The government has recently published proposals for planning reform through a White Paper³ that, if implemented, would have significant implications for the preparation and content of Local Plans. These issues present potentially significant implications for progress of the Greater Cambridge Local Plan and the Councils will, therefore, need to continue to assess the risks and implications associated with them.

³ ['Planning for the Future'](#), August 2020.

References

- Reference document 1: Greater Cambridge Local Plan: strategic spatial options for testing – methodology document - (Greater Cambridge Planning Service) November 2020
- Reference document 2: Greater Cambridge Employment Land Review & Economic Evidence Base Study (GL Hearn, with SQW, Cambridge Econometrics, and Icen Projects) November 2020
- Reference document 3: Greater Cambridge Housing and Employment Relationships Report (GL Hearn with Icen Projects, Justin Gardner and Cambridge Econometrics) November 2020
- Reference document 4: Greater Cambridge Local Plan strategic spatial options assessment: Implications for carbon emissions (Bioregional and Etude) November 2020
- Reference document 5: Greater Cambridge Local Plan strategic spatial options assessment: Integrated Water Management Study (Stantec) November 2020
- Reference document 6: Greater Cambridge Green Infrastructure Opportunity Mapping Baseline Report (Land Use Consultants) November 2020
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- Reference document 8: Greater Cambridge Local Plan strategic spatial options assessment: Habitats Regulations Assessment (LUC) November 2020
- Reference document 9: Greater Cambridge Local Plan strategic spatial options assessment: Equality Impact Assessment (EqIA) - (Greater Cambridge Planning Service) November 2020
- Reference document 10: Greater Cambridge Local Plan strategic spatial options assessment: Landscape & Townscape (Chris Blandford Associates) November 2020

**Greater Cambridge Local Plan
Development Strategy Options –Summary Report**

- Reference document 11: Greater Cambridge Local Plan strategic spatial options assessment: Housing Delivery Study – Interim Findings (AECOM) November 2020
- Reference document 12: Greater Cambridge Local Plan Strategic Spatial Options assessment: Employment (GL Hearn, with SQW, Cambridge Econometrics, and Icen Projects) November 2020
- Reference document 13: Greater Cambridge Local Plan Existing Transport Conditions Report (Cambridgeshire County Council Transport Infrastructure Policy and Funding Team) November 2020
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- Reference document 15: Greater Cambridge Local Plan strategic spatial options assessment: Infrastructure Delivery Plan (Stantec) November 2020
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Equality Impact Assessment (EqIA): Greater Cambridge Local Plan: Strategic Options Assessment

Introduction

The Public Sector Equality Duty, introduced under the Equality Act 2010, requires all public bodies, including local authorities, to have due regard to the need to:

- Eliminate unlawful discrimination, harassment, and victimisation.
- Advance equality of opportunity between those who share a protected characteristic and those who do not.
- Foster good relations between those who share a relevant protected characteristic and those who do not.

Equality Impact Assessments (EqIAs) allow the Council to:

- Show that we are meeting this legal duty by demonstrating due regard for the provisions of the Public Sector Equality Duty.
- Identify possible negative impacts on individuals and groups with protected characteristics, plan mitigating action and seek to maximise opportunities to advance equality within our activities.

EqIAs provide a methodical approach to the assessment of impacts across the [nine protected characteristics](#) and should be completed during the development and review of all Council policies, strategies, procedures, projects or functions. Where there is any doubt, the completion of an EqIA is always recommended.

Throughout the course of this form, please hover over the  symbol for guidance in relation to specific questions. When the form is completed, please send an

electronic copy to equality.schemes@scambs.gov.uk. If you require any additional support completing the form, please email the above address.

Equality Impact Assessment Complete Form

Section 1: Identifying Details

- 1.1 Officer completing EqIA: Claire Spencer.
- 1.2 Team and Service: Planning Policy Team, Greater Cambridge Shared Planning Service.
- 1.3 Title of proposal: Greater Cambridge Local Plan – Spatial Strategy and Options – October 2020.
- 1.4 EqIA completion date: October 2020.
- 1.5 Proposal implementation date: Adoption of Local Plan (currently anticipated 2025, subject to progress of independent Examination).
- 1.6 Who will be responsible for implementing this proposal: Greater Cambridge Shared Planning Service, other Cambridge City Council and South Cambridgeshire District Council Service areas and external stakeholders.

Section 2: Proposal to be Assessed

- 2.1 Type of proposal: Policy.
- 2.2 Is the proposal: New.
Once adopted, the Greater Cambridge Local Plan will supersede the South Cambridgeshire Local Plan 2018 and the Cambridge Local Plan 2018.

- 2.3** State the date of any previous equality impact assessment completed in relation to this proposal (if applicable):

Greater Cambridge Local Plan – ‘The First Conversation’ Issues and Options - December 2019

- 2.4** What are the headline aims of the proposal and the objectives that will help to accomplish these aims? (Approximately 250 words)

Greater Cambridge Local Plan

Cambridge City Council and South Cambridgeshire District Council are working together to create a joint Local Plan for Greater Cambridge. This will ensure that there is a consistent approach to land use planning, and the same planning policies, where appropriate, across both administrative areas over the next 20 years.

A Local Plan is a legal document that the Councils are required to prepare, which sets out the future land use and planning policies for the area over a set time period. It sets out:

- the amount of new homes and jobs that should be planned for
- the services and infrastructure that are needed to support this change
- where new development should happen, and
- where should be protected from development.

Preparation of the Local Plan involves many stages, which are outlined in the [Local Development Scheme](#).

The Local Plan is informed by an extensive evidence base across a breadth of topics and issues including employment, housing, transport, infrastructure, open space and recreation, retail and leisure, water and flooding, climate change, biodiversity, health and wellbeing, social inclusion, and viability. These studies provide an understanding of the existing situation and identify issues which need to be addressed and/or mitigated through the Local Plan.

In addition, because planning shapes the places where we live, work and play, everyone should have the opportunity to get involved to help shape the Local Plan. Public consultation is undertaken at key stages, in accordance with the [Greater Cambridge Shared Planning Statement of Community Involvement \(2019\)](#), (including the Addendum prepared in response to restrictions related to the Coronavirus pandemic), to actively engage with the community and stakeholders. A Statement of Consultation is prepared following each consultation to summarise who was consulted and the main issues raised in comments and how they have been addressed.

The Greater Cambridge Shared Planning Service undertook a 'First Conversation' consultation (January-February 2020) which sought views on a range of 'issues and options' to be included in the draft plan.

Development Strategy – Stage Report

This EqIA has been prepared as part of the stage reporting of strategic options testing to inform the Local Plan. Growth level and spatial options have been tested by a range of evidence, which will help inform a further round of stakeholder engagement:

- Transport Evidence (and baseline report)
- Zero Carbon Study
- Water Cycle Strategy
- Infrastructure Study
- Viability Study
- Green Infrastructure Study
- Housing Delivery Study
- Habitats Regulations Assessment
- Employment Land Review
- Sustainability Appraisal

It should be noted that this does not comprise the whole suite of evidence that will support plan making, which will be presented at later stages of the plan making process.

The three growth level options being tested at this stage are:

- Minimum – Standard Method homes-led
- Medium – central scenario employment-led
- Maximum – higher employment-led

Eight spatial options for testing have been identified for accommodating the new growth:

- 1 Densification of existing urban areas
- Edge of Cambridge – outside the Green Belt
- Edge of Cambridge – Green Belt
- Dispersal – new settlements
- Dispersal – villages
- Public transport corridors
- Supporting a high-tech corridor by integrating homes and jobs
- Expanding a growth area around transport nodes

The Local Plan will be drafted taking into consideration the outcomes of the 'First Conversation' and this spatial strategy and options consultation (both of

which will be published in a Statement of Consultation in due course) and will be informed by the findings in the whole suite of evidence studies.

2.5 Which of South Cambridgeshire District Council's business plan priorities does this proposal link to?

- Helping Businesses to grow - ✓
- Building homes that are truly affordable to live in - ✓
- Being green to our core - ✓
- A modern and caring council - ✓

2.6 Which of South Cambridgeshire District Council's equality objectives (as detailed in SCDC's Equality Scheme) does this proposal link to or help to achieve?

- Identify, prioritise and deliver actions that will narrow the gap in outcomes between disadvantaged groups and the wider community- ✓
- SCDC is an employer that values difference and recognises the strength that a diverse workforce brings - ✓
- Protected characteristic groups have a voice and are represented in forming the future shape of the district - ✓

2.7 Which of Cambridge City Council's equality objectives (as detailed in CCC's Equality Scheme) does this proposal link to or help to achieve?

- To further increase our understanding of the needs of Cambridge's growing and increasingly diverse communities so that we can target our services effectively - ✓
- To continue to work to improve access to and take-up of Council services from all residents and communities - ✓
- To work towards a situation where all residents have equal access to public activities and spaces in Cambridge and are able to participate fully in the community - ✓

2.8 Which groups or individuals will the proposal affect:

- Service Users ✓
- External Stakeholders ✓
- Employees ✓
- Councillors ✓
- Other ✓

If other, please specify – all residents and visitors to the Greater Cambridge area.

2.9 How will these groups or individuals be affected? (you will be asked to provide more detail on the specific impacts on different protected characteristic groups later in the form) (approximately 250 words).

The Local Plan is being prepared to provide a clear framework to assist decision making relevant to land use planning in the Greater Cambridge area. It is intended to provide a clear understanding of how new development and infrastructure will be secured and delivered and how the proposals will integrate with the local area and existing communities.

The views expressed by individuals, communities, businesses, academic institutions and stakeholders during consultations will help to influence the emerging policies and proposals for the Greater Cambridge Local Plan. All consultation and community engagement in respect of the emerging Local Plan will be undertaken in accordance with the [Greater Cambridge Shared Planning Statement of Community Involvement](#) (2019), including the Addendum prepared in response to restrictions related to the Coronavirus pandemic. Improvements to the consultation methods have also been identified to reach groups whose views are often not captured in consultations for a variety of reasons, including young people.

Once adopted the delivery of development proposals outlined in the Local Plan will be of benefit to the local economy as well as new and existing residents to the area. The Local Plan will seek to deliver a mix of employment, residential, education, health, recreation and open space, and other community uses with the intention of creating balanced communities in a way that protects and enhances the area so that it remains one of the best places to live and work in the country. Delivery of the proposals contained within the plan will involve a number of stakeholders to ensure the provision of all necessary infrastructure to serve the development in a timely manner.

Looking broadly at the impact of additional growth:

- Additional growth should bring with it a wider variety of jobs and houses. The Local Plan can include policies to ensure a mix of jobs as well as house types, sizes and affordability, including a proportion of adaptable (lifetime) houses, tailored to the identified local employment and housing needs. This should provide a greater choice of jobs and houses locally to redress the current imbalance, benefit all sectors of the community and the local economy.
- Growth would also bring additional infrastructure as well as services and facilities, including education, health, open space, recreation, and other community uses with the intention of creating balanced communities. These could benefit new and existing communities by providing a greater range locally, reducing their need to travel further afield to meet day to day needs.
- At the same time there are environmental impacts and opportunities arising from additional growth which will impact (directly and indirectly) on communities and which therefore need to be carefully managed. For example, new development provides the opportunity to incorporate technological advancements to help the Councils deliver towards their zero carbon objectives, particularly if of a scale and location to reduce the need to travel by motorised modes (the largest source of emissions) bringing associated air quality improvements for communities, and potentially reducing the cost of running and heating new buildings for new occupants.
- The scale and dispersal of growth may have a bearing on the deliverability and viability of development. There may be economies of scale to be achieved from concentrating development into fewer larger developments (for example to deliver technological advancements to achieve zero carbon) but at the same time larger developments have greater infrastructure requirements and costs which may impact their delivery and viability. Smaller developments may not be sufficient scale individually to deliver new services and facilities, relying instead on the expansion of existing community facilities, where possible.

Looking broadly at the impact of growth in the different spatial locations:

- Growth focussed in or around urban areas, particularly Cambridge as the largest settlement, has the greatest potential to provide more people with access by a choice of sustainable modes of travel. These options could be more inclusive to more people due to access to the broadest range of services and facilities, and Cambridge is the focus for many jobs. There may also be opportunities to secure the benefits of growth in the most deprived wards in Cambridge, for example proving access to a greater range of employment or services.

Additional growth in and around urban areas may impact on townscape, landscape, and open space which could have a bearing on health and wellbeing.

- New settlements, depending on their size, can be planned to be insular by co-locating a broad range of jobs, houses and facilities and services. If designed around the principles of walkable neighbourhoods these can be readily accessible to most people within a short distance by walking and cycling (and mobility scooters and wheelchairs), the cheapest and most inclusive modes of travel. Coupled with the provision of open space and biodiverse areas, this could have a positive impact on health and wellbeing. However, it can take time for new communities to establish, which can have a negative impact on mental wellbeing.
- Villages are, by their nature, smaller settlements with less services and facilities available, residents in smaller villages need to travel elsewhere to meet their day to day needs. Unless villages are located close to, or on one of the radial routes into, Cambridge the choice of travel options may be limited and/or costly and rely on the less active modes which are less inclusive. Additional growth in and around villages may impact on townscape, landscape, and open space which could have a bearing on health and wellbeing.
- Radial routes into Cambridge are the main transport corridors and the focus for future infrastructure improvements, including public transport (and transport nodes), which should improve the non-car mode options for people living on or close to these corridors. However, unless large scale growth is proposed, it still involves travelling to access services and facilities.
- Supporting homes in the technology corridor would help to integrate homes with jobs to redress the imbalance and significantly reduce the distances travelled by employees. This option may include some housing on business parks in conjunction with new settlements. Some community facilities and services would need to be integrated on the business parks to help to develop a local community, however, residents would likely need to travel to the new settlement or elsewhere to meet their wider needs.

2.11 How many people will this proposal affect? (Approximately)

Residents, workers, and visitors to Greater Cambridge are all stakeholders in the preparation of the Local Plan.

The adopted Local Plan will affect all residents within the South Cambridgeshire District Council and Cambridge City Council areas. The Plan will also impact upon all visitors to the area, for employment, education, retail, and leisure activities.

- 2.12** If any part of the proposal is being undertaken by external partners, please specify how SCDC will ensure that they will meet equality standards?
(Approximately 250 words).

The Local Plan is being prepared to provide a clear framework to assist decision making relevant to land use planning in the Greater Cambridge area. Delivery of the proposals contained within the plan will involve a number of stakeholders to ensure the provision of all necessary supporting infrastructure to serve the development in a timely manner.

The Greater Cambridge Shared Planning service, on behalf of the Local Planning Authorities, have been working with Cambridgeshire County Council, Greater Cambridge Partnership, Cambridgeshire & Peterborough Combined Authority and a wide range of delivery partners.

As public bodies they will be required to comply with the Public Sector Equality Duty, introduced under the Equality Act 2010. Buildings and infrastructure have to comply with the necessary design and safety standards, including Local Plan policy, Building Regulations, and safety audits, to ensure they are safe and accessible to all users.

The Local Plan is informed by evidence documents commissioned from external consultants. The procurement process addresses tackling inequalities in employment and equal opportunities for our communities.

Section 3: Evidence and Data

- 3.1** Describe any research (this could include consultation) and analysis you have undertaken to understand how [protected characteristic groups](#) are likely to be affected? Please list any key sources that you used to obtain this Information. 

(Approximately 250 words).

The Local Plan is informed by an extensive evidence base across a breadth of topics and issues including employment, housing, transport, infrastructure, open space and recreation, retail and leisure, water and flooding, climate

change, biodiversity, health and well-being, social inclusion, and viability. These studies provide an understanding of the existing situation and identify issues which need to be addressed and/or mitigated through the Local Plan.

Throughout the plan making process a Sustainability Appraisal (SA) (incorporating Strategic Environmental Assessment (SEA), Health Impact Assessment (HIA) and Equalities Impact Assessment (EqIA)) will be undertaken. These will consider whether the Local Plan is likely to disproportionately affect any groups with particular 'protected characteristics' under the Equality Act, as well as whether the Local Plan may disproportionately affect any other groups, such as different socio-economic groups. Equalities issues have been included in the data collated in the Sustainability Appraisal Scoping Report, in particular, Chapter 3 on Population, Health and Wellbeing.

The views expressed by individuals, communities, businesses, academic institutions and stakeholders during consultations will help us develop the emerging policies and proposals for the Greater Cambridge Local Plan. The Local Plan will be subject to a number of stages of public consultation prior to its adoption, as set out in the Greater Cambridge Local Development Scheme.

As part of the First Conversation consultation process we took a number of actions to engage with a wide range of protected characteristic groups, details of which can be seen in the Greater Cambridge Local Plan – 'The First Conversation' Issues and Options - December 2019 EqIA and will be published in a Statement of Consultation in due course.

Growth level and spatial options have been tested by a range of evidence, which will help inform a further round of stakeholder engagement:

- Transport Evidence (and baseline report)
- Zero Carbon Study
- Water Cycle Strategy
- Infrastructure Study
- Viability Study
- Green Infrastructure Study
- Housing Delivery Study
- Habitats Regulations Assessment
- Employment Land Review
- Sustainability Appraisal

See section 2.10 for a broad overview of the impact of the growth in the different spatial locations and section 4 considers the impacts on protected characteristic groups in further detail.

- 3.2** Describe any research (this could include consultation) and analysis you have undertaken to understand any effects on any other groups of people not mentioned in the nine [protected characteristic groups](#) (for example people who live in rural areas, who live in areas of high growth, or from low-income backgrounds). 
(Approximately 250 words).

See section 3.1.

- 3.3** If you have not undertaken any consultation, please detail why not, or when consultation is planned to take place. 
(Approximately 250 words).

Extensive public consultation was carried out at the First Conversation stage earlier in 2020. A wide range of feedback was received and will be used to inform the development of the plan.

The current stage is to publish the initial evidence findings and undertake further stakeholder engagement on strategic growth and spatial options, to inform a preferred strategy.

The next consultation stage will take place on the Greater Cambridge Local Plan: 'Preferred Option Consultation' is currently scheduled for Summer/Autumn 2021.

Section 4: Impact of proposal on those with protected characteristics

4.1 [Age:](#)

- 4.1.1** Has your research identified that the proposal will have an impact on this protected characteristic?

YES.

- 4.1.2** Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 
- approximately 250 words per impact

Impact – Positive

The Greater Cambridge Local Plan will include a range of land use policies many of which, once implemented, will have a positive impact upon different age groups. For example, house prices in Greater Cambridge are particularly high and this has a negative impact on those sections of the population wishing to purchase their own home, particularly young people wanting to purchase their first home. Housing policies may seek to ensure a proportion of new dwellings are affordable, and provision of a mix of house types and sizes for a range of household types, which would benefit young people struggling to afford market housing and also families with children. Similarly, policies can also make provision for adaptive or specialist housing, Care Homes and Assisted Living accommodation which would benefit older people. If a need is established provision will be made for student accommodation. Employment policies could support a range of employment opportunities at various skills levels, which will benefit people of working age. Similarly, the location of new development, including the provision of new services and facilities, may improve accessibility by sustainable modes and inclusivity, helping to foster community interaction and ensure people who are more likely to have mobility issues, like older people, can access the services and facilities they need.

Additional growth should bring with it a wider variety of jobs for those of working age and houses to meet the local housing needs of everyone, including helping to address the issues faced by younger and older people.

Looking at the locations being tested: Growth in and around urban areas, in new settlements and along transport corridors may be more inclusive to all age groups, providing access to a range of services and facilities, either within the community or by various modes of transport. Access by non-car modes are the most inclusive options for people of any age. However, reliance on public transport may not be an affordable choice for people on low incomes, particularly people that are not of working age with disposable income. Options for dispersal of growth in villages, particularly remote villages, may enforce a reliance on car use which could negatively impact younger and older people who are unable to drive or own a car.

- 4.1.3** Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to impact on different age groups	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

4.2 Disability:

4.2.1 Has your research identified that the proposal will have an impact on this protected characteristic?

YES.

4.2.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 📖
- approximately 250 words per impact

Impact – Positive

The Greater Cambridge Local Plan will include a range of land use policies many of which once implemented will have a positive impact upon people with disabilities. For example, the drafting of transport policies provides the opportunity to deliver ways of improving access in new developments for people with mobility impairments through the provision of seating areas for people needing to rest, tactile pavements, and wide pavements to comfortably accommodate mobility scooters. The location of new development, including the provision of new services and facilities, may improve accessibility and

inclusivity by reducing the need to travel, reduce the distances involved, and provide more travel options for journeys by a variety of different modes. Housing policies may seek to ensure a proportion of houses are adaptive to enable people to live healthy and long lives in their own homes. Access to healthcare services may be important for this group. Policies in the emerging Local Plan may include the provision of health care facilities which has the potential to result in a positive impact for this characteristic. Creating safe communities is considered an important theme, which might mean that the Local Plan has potential to help prevent hate crime (defined as any crimes that are targeted at a person because of hostility or prejudice towards that person's disability, race or ethnicity, religion or belief, sexual orientation or transgender identity).

Additional growth should bring with it a wider variety of jobs and houses to meet the local housing needs of everyone, including helping to address the issues faced by disabled people, such as through provision of adaptive housing.

Looking at the locations being tested: Growth in and around urban areas, in new settlements and along transport corridors may be more inclusive to more people, providing access to a range of services and facilities (including healthcare), either within the community or by various modes of transport. Access by non-car modes are often the most inclusive options for people. However, reliance on conventional public transport may not be an option for people with some disabilities. Development in new settlements or large urban extensions provide a 'clean slate' whereby new accessible buildings, streets and the public realm can be designed legibly from the outset to cater for all needs, rather than retrospective adaptation. Options for dispersal of growth in villages, particularly remote villages, may rely on car use which could negatively impact people who are unable to drive or own a car. Integrating homes and jobs in technology clusters may benefit people who have mobility issues by allowing them to live closer to their place of work and avoid having to overcome transport issues. Options which include a larger scale of development (such as edge of Cambridge and new settlements) may be more likely to include new healthcare services on site. Other spatial options are likely to require expansion of existing facilities (which may not be local), which may have a bearing on the types and range of healthcare provision and/or its relative accessibility for disabled people.

4.2.3 Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to impact on disabled people	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

4.3 Gender Reassignment:

4.3.1 Has your research identified that the proposal will have an impact on this protected characteristic?

NO.

4.3.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 
- approximately 250 words per impact

Impact – Neutral

No equality impacts specific to this group have been identified at this stage of the plan making process, however, there is a potential impact related to plans for healthcare access. This could be in terms of medical transitioning, for example, or due to transgender people being more likely to experience mental health issues than the general population. Healthcare services are therefore important for this group. Policies in the emerging Local Plan may include the provision of health care facilities which has the potential to result in a positive impact for this characteristic. Creating safe communities is considered an important theme, which might mean that the Local Plan has potential to help prevent hate crime (defined as any crimes that are targeted at a person

because of hostility or prejudice towards that person’s disability, race or ethnicity, religion or belief, sexual orientation or transgender identity).

Spatial options which include a larger scale of development (such as edge of Cambridge and new settlements) may be more likely to include new healthcare services on site. Other spatial options are likely to require expansion of existing facilities (which may not be local), which may have a bearing on the types and range of healthcare provision and/or its relative accessibility.

4.3.3 Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to impact on transgender groups	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

4.4 Marriage and Civil Partnership:

4.4.1 Has your research identified that the proposal will have an impact on this protected characteristic?

NO.

4.4.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 📖
- approximately 250 words per impact

At present there is no evidence to suggest the Greater Cambridge Local Plan will have a disproportionate effect on individuals attributable to their marital status. Hence no equality impacts have been identified.

4.4.3 Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to impact on an individual's marriage status	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

4.5 Pregnancy and Maternity:

4.5.1 Has your research identified that the proposal will have an impact on this protected characteristic?

YES.

4.5.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative

- whether it is a high, medium or low impact. 
- approximately 250 words per impact

Impact – Positive

The Greater Cambridge Local Plan will include a range of land use policies including those seeking to increase the provision of affordable housing and to provide a mix of house types for a range of different household sizes within Greater Cambridge. Such policies when implemented could benefit families with children, including those in the process of starting or adding to their families. Communities with a predominance of families with children can put pressure on statutory services, including health care facilities and education. The Local Plan is likely to include policies seeking to secure the provision of appropriate health care facilities which would be a positive impact for this characteristic. The Local plan will include policies relating to the provision of education facilities, including primary and secondary schools along with creche and nursery provision. Such policies once implemented could impact positively on the protected characteristic.

Looking at the locations being tested: Growth in and around urban areas, in new settlements and along transport corridors may be more inclusive, providing access to a range of services and facilities (including healthcare), either within the community or by various modes of transport. Access by non-car modes are the most inclusive options for people. However, reliance on public transport may not be an affordable choice for people on low or reduced incomes. Options for dispersal of growth in villages, particularly remote villages, may rely on car use which could negatively impact women who are unable to drive or own a car. Spatial options which include a larger scale of development (such as edge of Cambridge and new settlements) may be more likely to include new healthcare services on site. Other spatial options are likely to require expansion of existing facilities (which may not be local), which may have a bearing on the types and range of healthcare provision and/or its relative accessibility.

- 4.5.3** Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to pregnancy and maternity	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

4.6 Race:

4.6.1 Has your research identified that the proposal will have an impact on this protected characteristic?

YES.

4.6.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 
- approximately 250 words per impact

Impact – Positive

Whilst Gypsies and Travellers are united by their travelling lifestyles, each community within this racial classification has its own distinct culture.

Collectively they are the most affected racial groups.

The Greater Cambridge Local Plan will include a range of land use policies including those seeking to provide for the needs of Gypsy and Traveller communities. Creating safe communities is considered an important theme, which might mean that the Local Plan has potential to help prevent hate crime (defined as any crimes that are targeted at a person because of hostility or prejudice towards that person's disability, race or ethnicity, religion or belief, sexual orientation or transgender identity).

Gypsy and Traveller communities have an accommodation need for serviced pitches to site their mobile homes and any equipment associated with their work. Whilst there are travelling communities amongst these ethnic groups others have become more settled therefore transit, permanent pitches, and some housing is needed to accommodate their needs. These communities have poor health outcomes and access to doctors, as well as schools, and shops will help to reduce inequalities.

Additional growth should bring with it a wider variety of jobs and houses to meet the local housing needs, including pitches to meet the needs of the Gypsy and Traveller community. The Local Plan will need to consider how those needs should be addressed. It should be noted that a new Traveller Accommodation Needs Assessment has been commissioned and will inform later stages of plan making. Through this process engagement is taking place with stakeholders, and surveys being undertaken with traveller communities.

As the preferred option is developed it will need to consider how identified needs will be addressed. The current South Cambridgeshire Local Plan references that provision through strategic developments is a route to securing site delivery, and a range of strategic spatial options could provide such opportunities.

An important consideration when considering site location will be access to facilities, including for health and education.

- 4.6.3** Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to impact on different ethnic groups	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

4.7 Religion or Belief:

4.7.1 Has your research identified that the proposal will have an impact on this protected characteristic?

YES.

4.7.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 
- approximately 250 words per impact

Impact – Neutral

The Local plan may include policies relating to the provision of faith facilities, which could impact positively on the protected characteristic. Creating safe communities is considered an important theme, which might mean that the Local Plan has potential to help prevent hate crime (defined as any crimes that are targeted at a person because of hostility or prejudice towards that person's disability, race or ethnicity, **religion or belief**, sexual orientation or transgender identity).

4.7.3 Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to impact on	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

		different religious/faith groups	
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4.8 Sex:

4.8.1 Has your research identified that the proposal will have an impact on this protected characteristic?

NO.

4.8.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 
- approximately 250 words per impact

Impact – Neutral

At present there is no evidence to suggest the Greater Cambridge Local Plan will have a disproportionate effect on individuals attributable to their sex. Hence no equality impacts have been identified. In a community needs assessment from 2015 on women's experience of living in Cambridge, a major concern was safety at night on the streets in Cambridge. Creating safe communities is considered an important theme so there is potential to improve safety and perception of safety for women through new development led by the Local Plan.

4.8.3 Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard to different sexes	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

4.9 Sexual Orientation:

4.9.1 Has your research identified that the proposal will have an impact on this protected characteristic?

NO.

4.9.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 📖
- approximately 250 words per impact

At present there is no evidence to suggest the Greater Cambridge Local Plan will have a disproportionate effect on individuals attributable to their sexual orientation. Hence no equality impacts have been identified. Creating safe communities is considered an important theme, which might mean that the Local Plan has potential to help prevent hate crime (defined as any crimes that are targeted at a person because of hostility or prejudice towards that person's disability, race or ethnicity, religion or belief, **sexual orientation** or transgender identity).

4.9.3 Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to sexual orientation	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

4.10 Other: (e.g., rurality, growth, socio-economic status etc.)

4.10.1 Has your research identified that the proposal will have an impact on this protected characteristic?

YES.

4.10.2 Describe the impacts of the proposal on this protected characteristic group identified through your research, including

- whether each impact is positive, neutral or negative
- whether it is a high, medium or low impact. 
- approximately 250 words per impact

Impact – Positive

Cambridge was identified as the most unequal city in the UK by the Centre for Cities and includes areas that are among the most deprived in the UK. Within South Cambridgeshire, there are specific issues facing some of those living in rural communities particularly those with limited access to services and transport.

One of the big themes identified for the Local Plan is wellbeing and social inclusion. The Local Plan will be:

- Supporting a range of business types and sizes, and therefore an associated range of employment opportunities, across a range of sectors, and supporting more flexible working. This could reduce

inequality and poverty by increasing people's employment opportunities.

- Providing sufficient transport infrastructure, community facilities and allowing people to connect via superfast broadband and mobile phone coverage. This can help people better access services and tackle isolation.

The Local Plan will also set out how new developments can provide a range of affordable housing choices and help ensure that new homes are cost efficient to maintain – for example, through energy efficiency measures. This will include:

- Continuing to ensure that new developments include appropriate and viable levels of affordable housing.
- Planning for a balance of tenure types - affordable rented, shared ownership and community-led housing.

Additional growth should bring with it a wider variety of jobs for those of working age and houses to meet the local housing needs. Additional infrastructure (including transport) and services and facilities will be needed to support the growth.

Development in the urban areas of Cambridge could contribute to providing opportunities to access employment, services and facilities, and the delivery of new homes in or near to some of the most deprived wards in the area.

The spatial option which disperses additional homes in the rural area may help to sustain existing services and facilities but are unlikely to provide communities with sufficient scale of development to sustain new services and facilities, particularly in smaller communities. This would increase the number of people needing to travel to meet day to day needs, which impacts on people in several of the protected characteristics. Unless jobs are also dispersed in the rural area, it would not redress the jobs / homes balance, impacting on working age people.

New settlements (larger existing settlements) could act as a local hub for surrounding smaller communities, to avoid the need to travel longer distances to market towns or Cambridge for all their needs, provided access issues could be overcome.

Spatial options which connect communities to transport corridors may provide better accessibility to Cambridge or the market towns by public transport and cycling. However, public transport may not be an option for some disabled people or an affordable choice for people on low incomes. Rural areas can be remote and involve long distances, so that cycling would not be an option for many people.

It is likely rural communities would remain somewhat dependent upon on car use which could negatively impact people who are unable to drive or own a car.

4.10.3 Please complete the table below to detail actions that need to take place to minimise the negative and maximise the positive impacts raised in the previous question:

Action	Responsible Officer	Timescale for completion	How will the actions be monitored?
Undertake consultation with stakeholders and review feedback	Greater Cambridge Shared Planning Policy Team	To inform the next stage - drafting of GC Local Plan policies, ensuring regard is had to these issues	Prepare a Statement of Consultation to record who is consulted, issues arising, and how they have been addressed

Section 5: Summary

5.1 Briefly summarise the key findings of the EqIA and any significant equality considerations that should be taken into account when deciding whether or not to proceed with the proposal (this section can be included within the ‘equality implications’ section of any committee reports). (Approximately 250 words).

The Greater Cambridge Local Plan will plan for and deliver growth in the Greater Cambridge area to meet local housing needs and assist the local economy. Development will bring with it improvements in local infrastructure, services and facilities to the benefit of existing communities. Policies in the Local Plan will carefully manage the location and nature of development to protect the characteristics of the area which make it one of the best places in the country to live.

The stage of testing these strategic spatial options is one part of a plan making process that will involve significant consultation and engagement with local communities. Equalities Impact Assessment will continue to be a part of

the plan making process and will be carried out again at the Preferred Option stage in 2021.

5.2 Confirm the recommendation of the officer completing the EqIA (delete as appropriate):

- Approved (No major change): Your analysis demonstrates that the policy is robust, and the evidence shows no potential for discrimination and that you have taken all appropriate opportunities to advance equality and foster good relations between groups.

5.3 Signature of individual completing EqIA: Claire Spencer

5.4 Date of completion: 30 October 2020

Section 6: Sign Off

6.1 Approving officer EqIA review outcome: (delete as appropriate):

- Approved (No major change): Your analysis demonstrates that the policy is robust, and the evidence shows no potential for discrimination and that you have taken all appropriate opportunities to advance equality and foster good relations between groups.

6.2 Do you give permission to publish this EqIA on SCDC website (delete as appropriate)? If no, please state reason.

Yes.

6.3 When will this proposal next be reviewed and who will this be?

At Preferred Options stage in Summer / Autumn 2021, undertaken by the Greater Cambridge Shared Planning Policy Team.

6.4 Approving officer signature: Paul Frainer

6.5 Date of approval: 16 November 2020



Greater Cambridge Local Plan

Transport Existing Transport Conditions Report

Cambridgeshire County Council
Transport Strategy and Funding

November 2020

Revision	Date	Originator	Checker	Approver	Description
A	Oct 19	RA / TBS	LMW	JS	Draft
B	Nov 19	RA / TBS	LMW	JS	2 nd Draft
C	April 20	RA /TBS	LMW	JS	3 rd Draft
D	Sept 20	RA /TBS	LMW	LMW	Final
D	Sept 20	RA /TBS	LMW	LMW	4 th Draft
E	Oct 20	RA /TBS	LMW	LMW	5 th Draft
F	Nov 20	RA /TBS	LMW	LMW	6 th Draft
G	Nov 20	RA /TBS	LMW	LMW	7 th Draft

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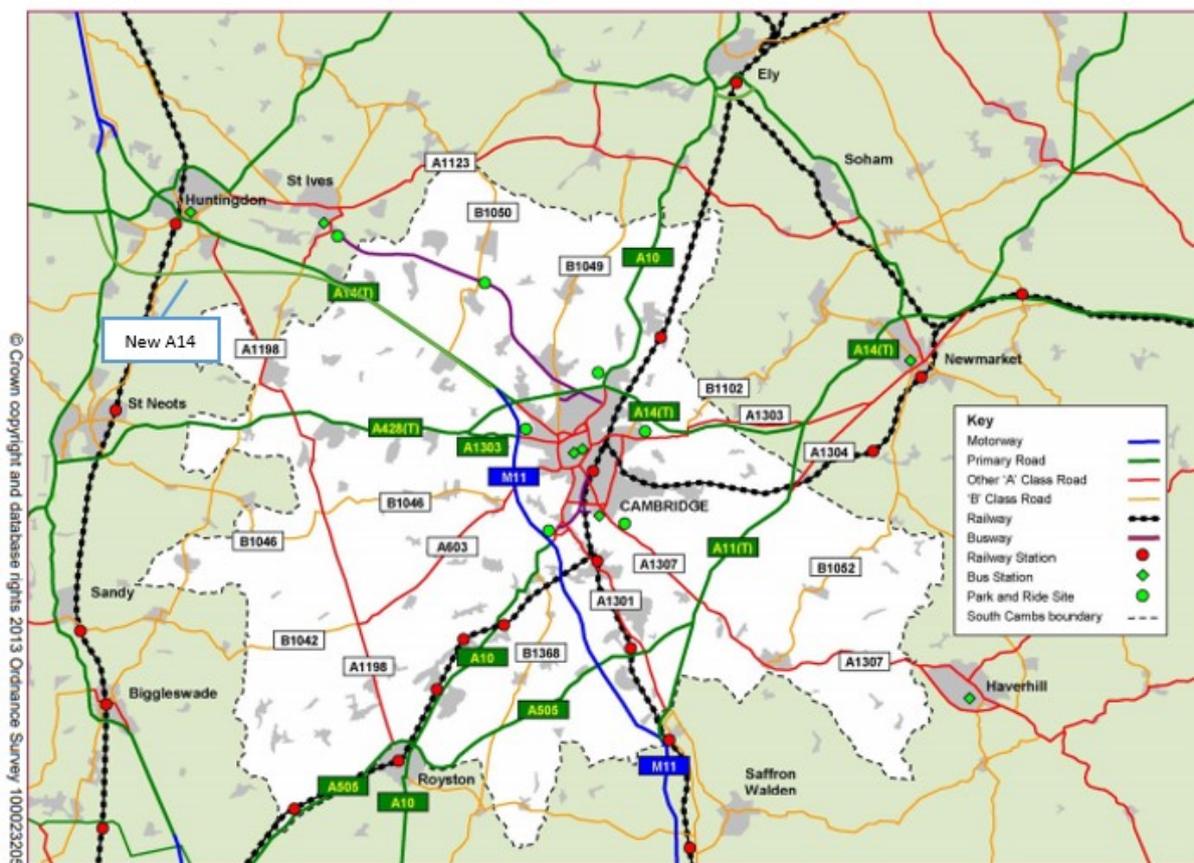
1. Introduction

1.1. Study Background

This document sets out the existing transport situation in the Study area for the emerging Greater Cambridge Local Plan which covers the administrative areas of Cambridge City Council and South Cambridgeshire District Council the greater Cambridge area is shown in Figure 1.

The Greater Cambridge area has the University of Cambridge at its heart and is a world-leading centre for the research, life science, innovation and technology industries. The recent growth in this area has led to increased economic growth, inward investment, new jobs and a growth in housing.

Figure 1: Map of Greater Cambridge



Source: Transport Strategy for Cambridge and South Cambridgeshire (Figure 1.1)

1.2. Report Purpose and Approach

The purpose of this report is to set out the baseline transport conditions in Greater Cambridge to support the development of the Greater Cambridge Local Plan to 2041. The local plan will set out the planning policy basis for Cambridge City and South Cambridgeshire District Councils.

The main aim of the transport evidence base is to identify the opportunities for encouraging a shift to more sustainable transport modes and as well as to identify the main strengths and weaknesses of the transport networks in the plan area.

In order to develop this understanding across all aspects of the transport networks which affect the end user, the following approach was adopted:

1. Demand: Where do people want to travel from and to?
2. Connectivity: What connectivity options are available to facilitate these movements?
3. Future transport provision: Known transport schemes in development.

The remainder of the report is structured accordingly and concludes with a summary section which identifies the main themes emerging from this assessment.

2. Demand

2.1. Introduction

The level of transport demand takes into account the existing distribution of land uses and trip generators in and around the Greater Cambridge area and the need for goods and people to travel between them.

2.2. Area demographics

2.2.1. Population Growth

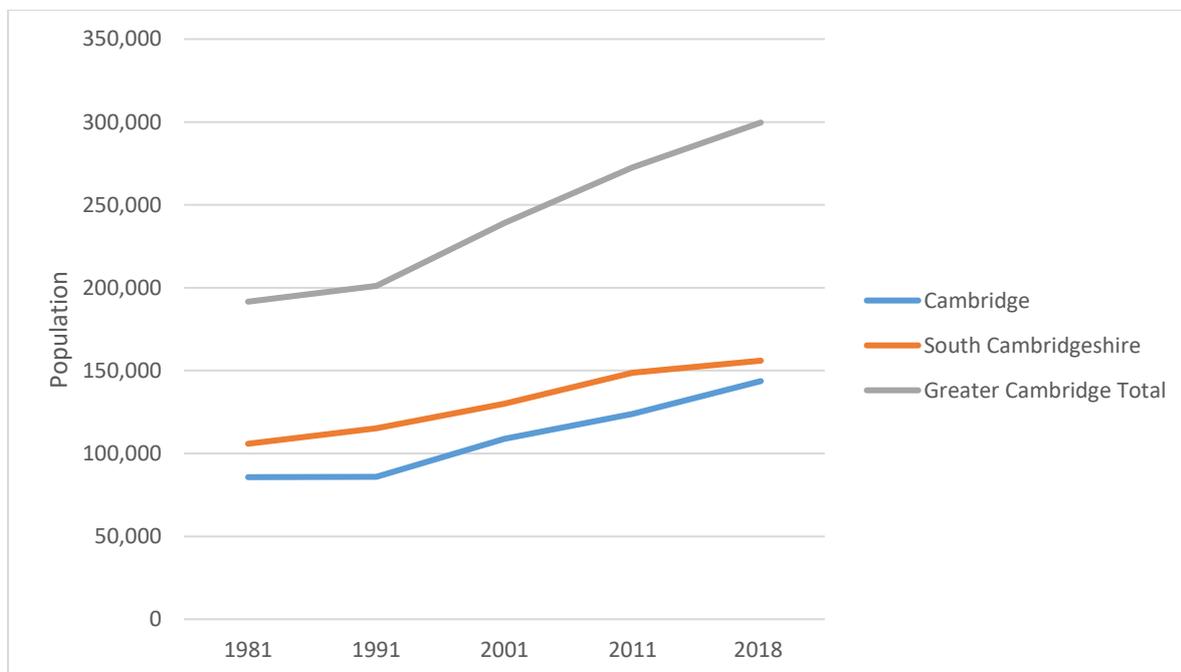
The Greater Cambridge population has been increasing. Table 1 and Figure 2 show that the Greater Cambridge population has increased by around 108,000 people since 1981, driven in large part by the “Cambridge phenomenon” and the emergence and continued growth of clusters of high tech / biotech industries in and around the city.

Table 1: Greater Cambridge Population Growth

Year	Cambridge	South Cambridgeshire	Greater Cambridge Total
1981	85,708	105,879	191,605
1991	85,943	115,147	201,090
2001	108,863	130,108	238,971
2011	123,867	148,755	272,622
2018	143,653	156,000	299,653

Source: Census data and Cambridge Insight Data

Figure 2: Greater Cambridge Population

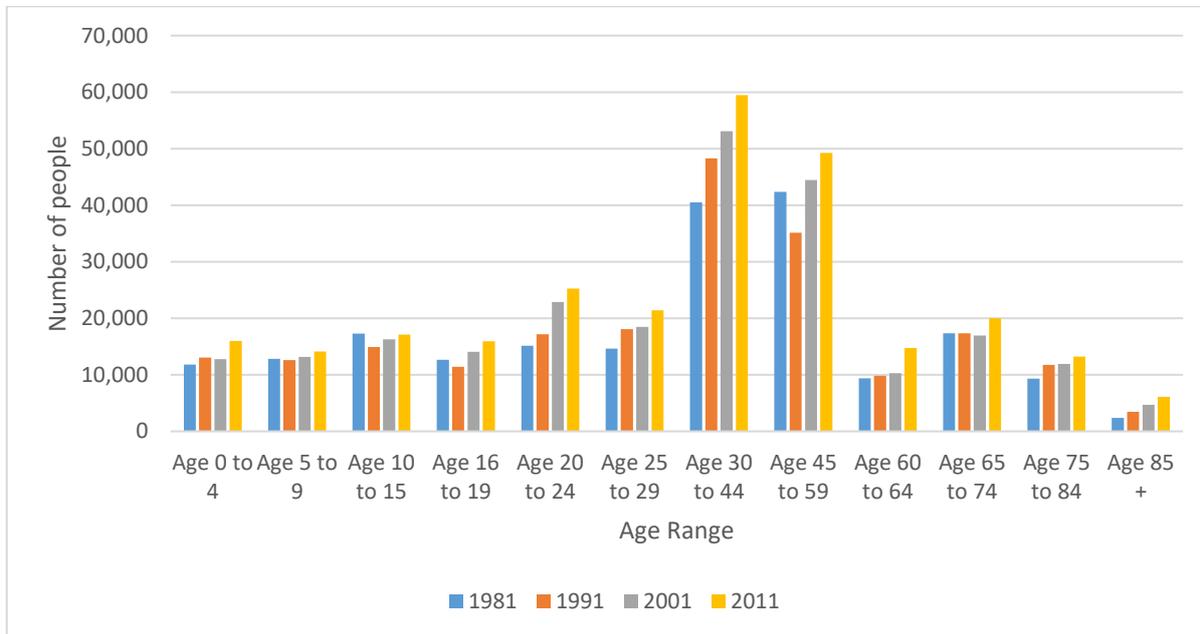


Source: Census data and Cambridge Insight Data

2.2.2. Age Distribution

Key to the economic prosperity is the age structure of the population Figure 3 shows the age structure of the Greater Cambridge population between 1981 and 2011.

Figure 3: Greater Cambridge Age Distribution



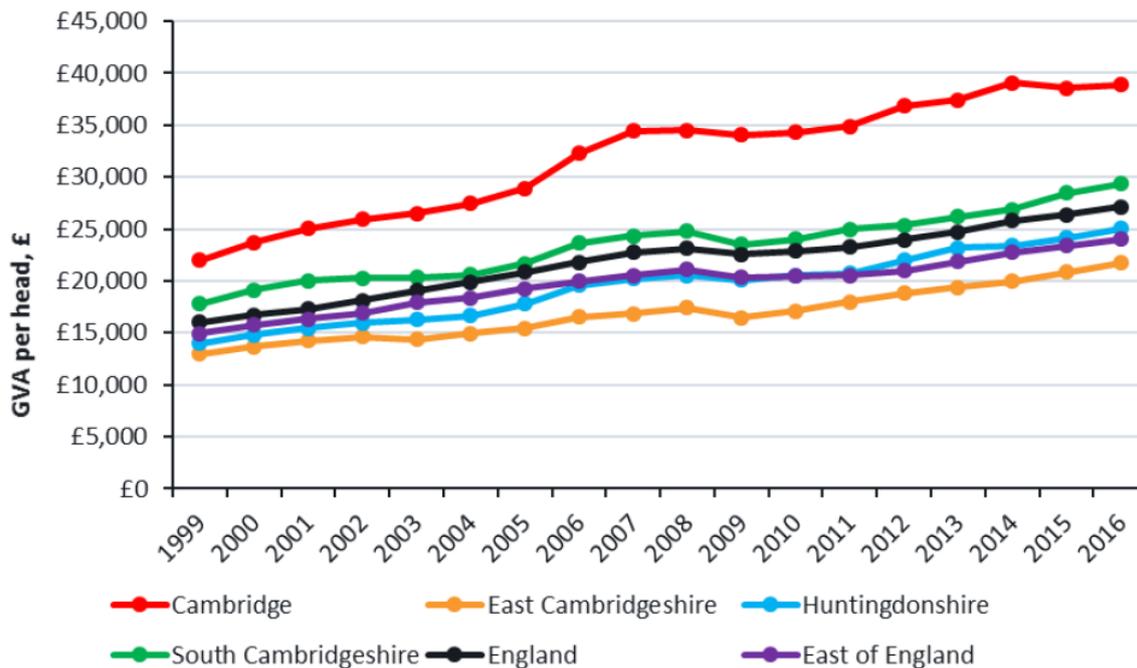
Source: Census Data

From the information in Figure 3 it is possible to see that the age distribution has remained relatively consistent over the last 40 years, with the majority of the population in the economically active age range (16 to 64 years) although the 2011 census indicates that there has been a slight rise in the proportion of residents in the 60 and 65 age categories.

2.2.3. Economic Performance

The large economically active population and the large growth in the knowledge intensive industries within Greater Cambridge has directly influenced the region’s Gross Value Added (GVA) per head of population, which can be seen in Figure 4 below.

Figure 4: Regional, Balanced, Gross Value Added (GVA) per head, By Local Authority area



Source: Office for National Statistics, Regional gross value added (balanced) reference tables

Figure 4 shows that the GVA per head of population for both Cambridge City and South Cambridgeshire is higher than the national average for the whole period between 1999 and 2016. However, whilst South Cambridgeshire’s is shown to be only slightly higher than the national average and has followed the same profile, Cambridge’s GVA per head has been significantly higher than the national average and has followed a different profile. This is an indicator that Greater Cambridge’s prosperity is driven by the knowledge based industries in and around Cambridge.

2.2.4. Car Ownership

Table 2 shows how car ownership in Greater Cambridge compares to Cambridgeshire as a whole and the wider East of England region. This information comes from the 2011 census, which remains the only comprehensive and robust dataset for commuting patterns available.

Table 2: Car Ownership Levels (per household)

Area	No cars or vans	One car or van	Two cars or vans	Four cars or vans	Four+ cars or vans	Total cars or vans	Ave cars or vans
Cambridge	15,702	21,764	7,568	1,311	369	42,445	0.91
South Cambridgeshire	6,571	24,225	21,950	5,220	1,994	92,794	1.55
Greater Cambridge	22,273	45,989	29,518	6,531	2,363	135,239	1.27
Cambridgeshire	43,588	106,212	76,970	17,830	6,641	343,690	1.37
East England	449,358	1,039,677	703,968	166,426	63,606	3,231,763	1.33

Source: Census 2011

From the information in Table 2 we can see that South Cambridgeshire has the highest level of car ownership in the Greater Cambridge area with an average of 1.55 cars per household, whilst Cambridge has the lowest with an average of 0.91 cars per household. This reflects the more rural nature of South Cambridgeshire and the less frequent Public Transport available in South Cambridgeshire meaning that there is a greater reliance on cars in rural locations.

The level of car ownership in Greater Cambridge of 1.27 cars per household is slightly lower than the Cambridgeshire average (1.37) and the wider East of England region (1.33) which is due mostly to the low levels of car ownership in the City of Cambridge.

2.3. Trip Generation

2.3.1. Total Commuter Trips

Tables 3 and 4 show the top five origins and destinations from the 2011 census data for commuter trips into and out of Cambridge, South Cambridgeshire and Greater Cambridge.

Table 3: Commuter Trips, top inflows

Cambridge	Top Inflows					
	South Cambs.	East Cambs.	Huntingdonshire	St Edmundsbury	Forest Heath	Total Inflow from all areas
	23,367	7,206	4,716	2,858	1,852	51,240
South Cambs.	Top Inflows					
	Cambridge	Huntingdonshire	East Cambs.	St Edmundsbury	North Herts.	Total Inflow from all areas
	8,272	5,830	4,554	2,302	2,100	34,916
Greater Cambridge	Top Inflows					
	East Cambs.	Huntingdonshire	St Edmundsbury	North Herts.	Forest Heath	Total
	11,760	10,546	5,160	3,445	3,277	54,517

Source: Census 2011 and Cambridgeshire County Council calculations

From Table 3 above we can see that approximately 46% of employment trips into Cambridge come from South Cambridgeshire. Of the remaining in-commuters to Cambridge 23% come from either Huntingdonshire or East Cambridgeshire with the remaining 33% coming from outside of Cambridgeshire.

For South Cambridgeshire 24% of in-commuters come from Cambridge and 30% come from either Huntingdonshire or East Cambridgeshire with the remaining 46% coming from outside of Cambridgeshire. This indicates that more in-commuters in South Cambridgeshire come from outside Cambridgeshire rather than Cambridge.

From the figures for Greater Cambridge as a whole it is possible to see that 41% of commuters come from either Huntingdonshire or East Cambridgeshire, a further 1% come from Fenland district with the majority of the remaining 58% coming from outside of Cambridgeshire.

Table 4: Commuter Trips, Top Outflows

Cambridge	Top Outflows					
	South Cambs.	City of London	Huntingdonshire	East Cambs.	Camden	Total Outflow to all areas
	8,272	1,018	855	667	431	16,388
South Cambs.	Top Outflows					
	Cambridge	Huntingdonshire	North Herts.	Uttlesford	City of London	Total Outflow to all areas
	23,367	2,690	1,812	1,178	1,112	39,701
Greater Cambridge	Top Outflows					
	Huntingdonshire	City of London	North Herts.	East Cambs.	Uttlesford	Total Outflow to all areas
	3,545	2,130	2,087	1,709	1,570	24,450

Source: Census 2011 and Cambridgeshire County Council calculations

From Table 4 above we can see that approximately 50% of out-commuting trips from Cambridge go to South Cambridgeshire. Of the remaining out-commuters from Cambridge 9% go to either Huntingdonshire or East Cambridgeshire with the remaining 41% traveling to locations outside of Cambridgeshire including approximately 6% of residents commuting to London.

For South Cambridgeshire 59% of out-commuters go to Cambridge and 7% go to either Huntingdonshire with the remaining 36% traveling to locations outside of Cambridgeshire of which approximately 3% commute to London.

From the figures for Greater Cambridge as a whole it is possible to see that 21% of commuters travel to locations within wider Cambridgeshire with the remaining 79% traveling to locations outside of Cambridgeshire. 9% London.

2.3.2. Commuting Mode Shares

The following section sets out the mode share of travel to work journeys within, to, and from Greater Cambridge. It uses 'method of travel to work' data sets from the 2011 Census. This data includes all residents aged 16 and over in employment the week before the Census in April 2011 that travel to work (so excludes those that were recorded as working mostly from home).

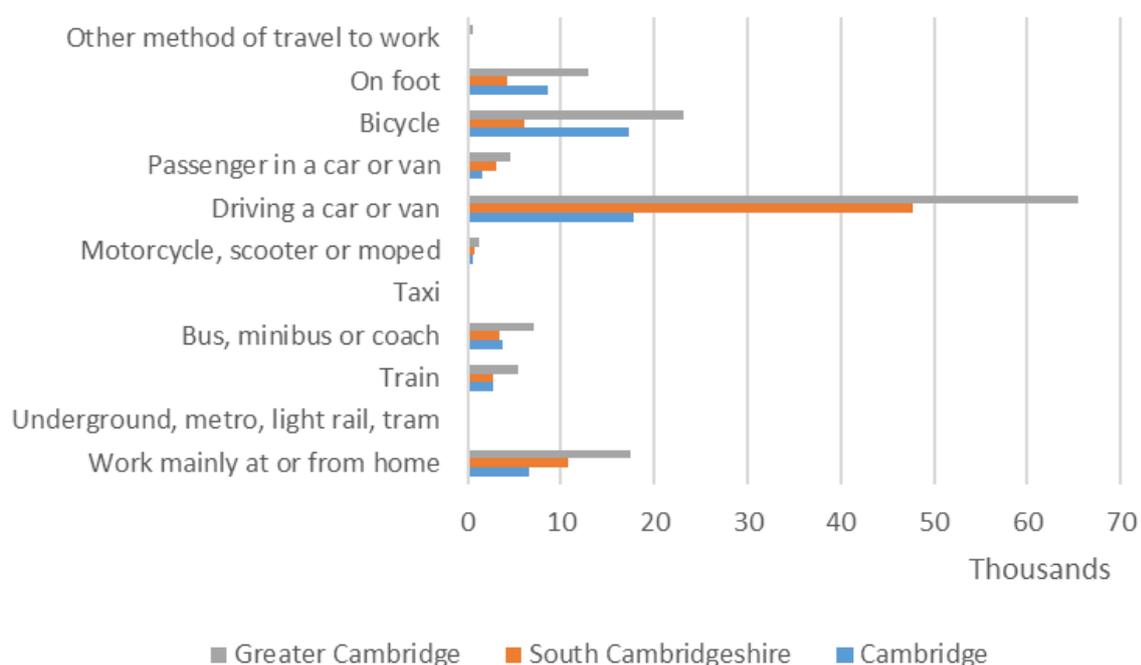
Table 5: Greater Cambridge Mode Share

Mode	Cambridge Number	Cambridge %	South Cambridgeshire: Number	South Cambridgeshire: %	Greater Cambridge Number	Greater Cambridge %
Underground, metro, light rail, tram	129	0.24%	118	0.17%	247	0.20%
Train	2,755	5.21%	2,729	3.99%	5,484	4.52%
Bus, minibus or coach	3,781	7.15%	3,380	4.94%	7,161	5.91%
Taxi	188	0.36%	113	0.17%	301	0.25%
Motorcycle, scooter or moped	487	0.92%	771	1.13%	1,258	1.04%
Driving a car or van	17,817	33.71%	47,667	69.73%	65,484	54.03%
Passenger in a car or van	1,623	3.07%	3,021	4.42%	4,644	3.83%
Bicycle	17,205	32.56%	6,011	8.79%	23,216	19.15%
On foot	8,629	16.33%	4,279	6.26%	12,908	10.65%
Other method of travel to work	233	0.44%	269	0.39%	502	0.41%

Source: Census 2011

From the information in Table 5 it is possible to see that at the time of the 2011 census within Greater Cambridge approximately 58% of trips were made by car or taxi either as a driver or passenger whilst approximately 30% of trips were made by non-motorised vehicles. Analysis of the two authority areas indicates that 49% of journeys to work were by active mode in Cambridge compared to 13% in South Cambridgeshire with Public Transport accounting for 13% in Cambridge and 9% in South Cambridgeshire. This information is presented in Figure 5 below which clearly shows that car usage is the largest mode share for Greater Cambridge and South Cambridgeshire but in Cambridge the car mode share is similar to that of cycling.

Figure 5: Method of Travel



Source: Census 2011/ Cambridgeshire County Council

2.3.3. Distance Travelled to work

The information set out in Table 6 below sets out the distances travelled to work by residents of Greater Cambridge.

Table 6: Distance Travelled to Work

	Cambridge	South Cambridgeshire	Greater Cambridge
Less than 2km	32%	12%	21%
2km to less than 5km	39%	15%	26%
5km to less than 10km	8%	26%	18%
10km to less than 20km	7%	27%	18%
20km to less than 30km	3%	7%	5%
30km to less than 40km	1%	3%	2%
40km to less than 60km	2%	3%	3%
60km and over	7%	7%	7%
Average distance (km)	12.6	17.4	15.3

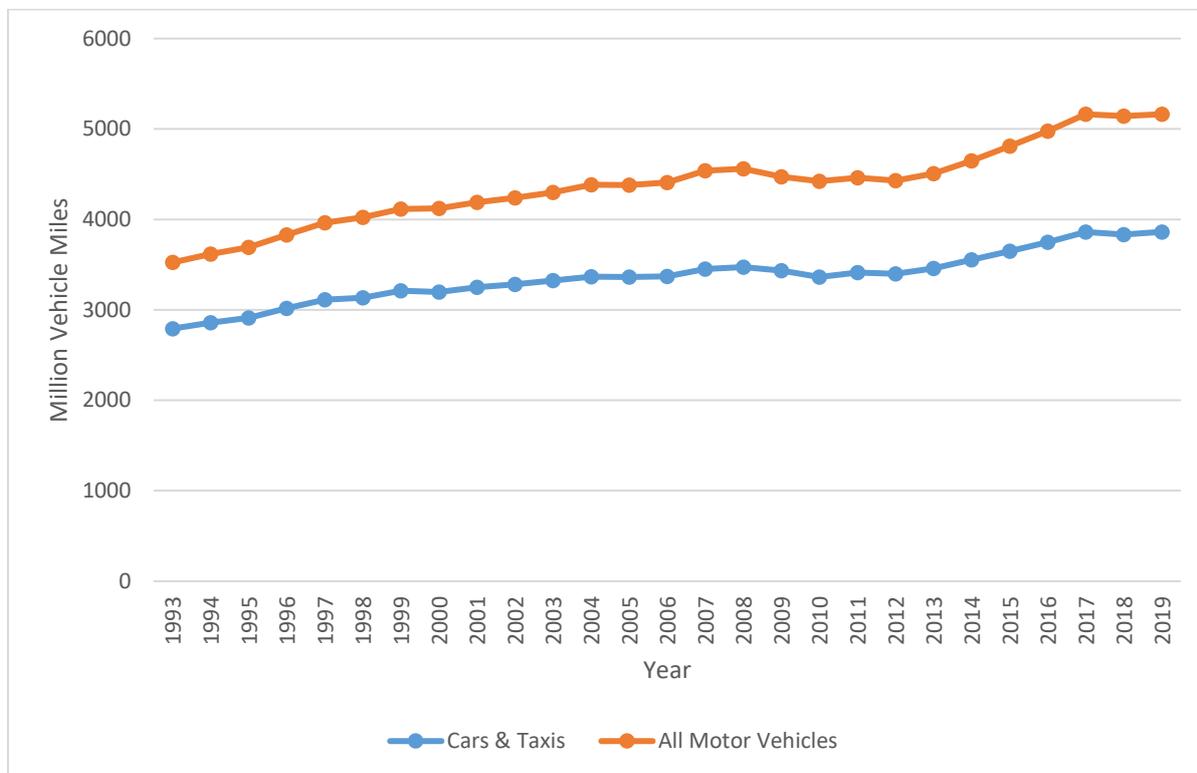
Source: Census 2011/ Cambridgeshire County Council

From the information in Table 6 we can see that 71% of the population of Cambridge travel less than 5km to work compared to 27% in South Cambridgeshire which highlights that the major employment locations are located closer to Cambridge. The details of the employment locations are set out in section 3.5.

2.3.4. Traffic Volumes on the Strategic and Main Road networks

Figure 6 shows the annual traffic by vehicle type in Cambridgeshire. In 2019, a total of 5.16 billion vehicle miles were travelled, of which 3.86 billion miles were made by cars and taxis, which equates to 75% of the total.

Figure 6: Annual Traffic by Vehicle Type in Cambridgeshire by Vehicle Miles



Source: <https://roadtraffic.dft.gov.uk/local-authorities/97>

From the information in Figure 6 above it is possible to see that the volume of traffic has gradually increased between 1993 and 2019 with the level of cars and taxis increasing in line with the increase shown for all traffic.

The composition of motor vehicle traffic on roads that are part of the Strategic Road Network and Main Road Network is set out in Table 7 below.

Table 7: Two-way Annual Average Daily Flow on the major routes 2019

	Pedal Cycles	Powered two Wheelers	Cars & Taxis	Bus & Coach	LGV	HGV	Total
M11 between A11 and A14	0	8,045	42,178	155	232	8,309	58,919
A10 between Royston and Cambridge	84	1,413	10,149	63	103	335	12,147
A10 between Cambridge and Ely	7	2,421	14,658	73	209	1,666	19,034
A11 between M11 and A14	5	6,675	33,486	110	299	2,888	43,462
A14 between Suffolk border and M11	0	7,539	38,530	77	200	7,454	53,800
A14 between M11 and Swavesey	1	7,722	38,197	156	245	9,282	55,602
A428 between A14 and St Neots	76	3,078	16,798	65	146	1,863	22,026
A505 between Royston and the A11	23	2,679	14,983	72	123	1,023	18,902
A1303 between the M11 and the A428	26	2,472	15,839	155	192	801	19,485
A1307 between the A11 and Haverhill	10	2,349	14,740	91	143	1,005	18,336

Source: <https://roadtraffic.dft.gov.uk/local-authorities/97>

From the information in Table 7 we can see that the vast majority of trips are made by car or taxi whilst very few trips are made by public transport even on routes where public transport services exist.

However it is important to note that due to the location of the study area on the strategic route from the eastern ports to the midlands and beyond, a significant proportion of the traffic on these routes is through traffic that is outside the scope of the local plan to control.

2.4. Demand Summary

- The Greater Cambridge population is currently approximately 300,000 people with a large percentage of the population within the economically active age range (16-64).
- The GVA in Cambridge City and South Cambridgeshire is higher than the national average, indicating the prosperity of the Greater Cambridge area.
- Car ownership is higher in South Cambridgeshire than in Cambridge City due to the more rural nature of the district. South Cambridgeshire's car ownership levels are higher than the average for both Cambridgeshire and the East of England.

- In total 54,517 people commute into Greater Cambridge from outside with 41% of these coming from Huntingdonshire and East Cambridgeshire
- A total of 24,450 people commute out of Greater Cambridge with Huntingdonshire, the city of London and North Hertfordshire amongst the top destinations.
- The Greater Cambridge travel to work mode share shows that 51% of the population drives a car or a van, 13% use public transport and 43% walk or cycle.
- Cars and taxis account for around 75% of trips on the Greater Cambridge Road network.

Connectivity

3. Connectivity

3.1. Introduction

This section reviews the existing transport networks currently available in and around Greater Cambridge.

3.2. Public Transport Services

Greater Cambridge benefits from a network of buses, guided busways, park and ride sites and Rail services. This section highlights the current public transport network providing connectivity in Greater Cambridge.

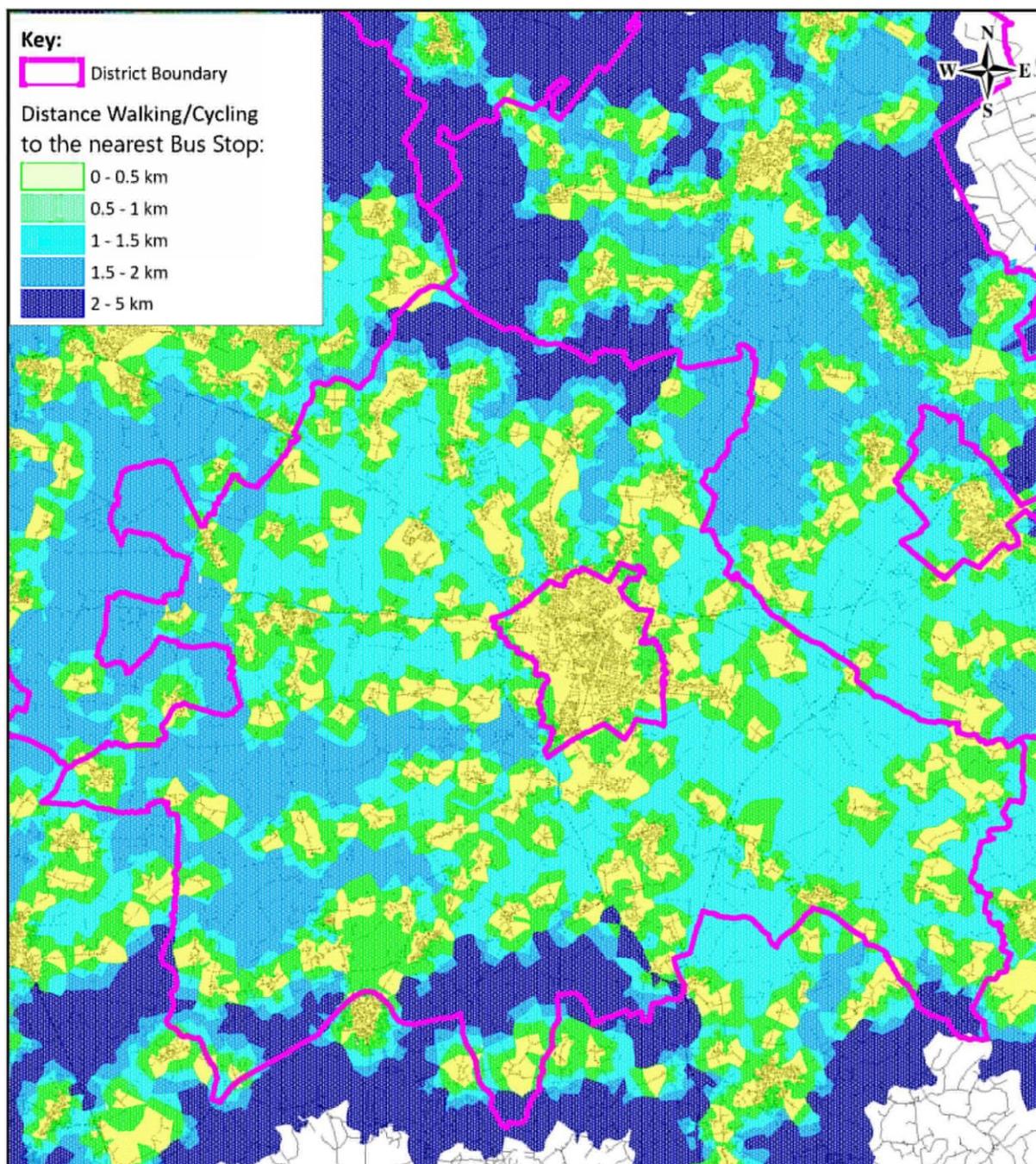
3.2.1. Bus Services

There are five bus operators who run registered commercial bus services within Greater Cambridge, with Stagecoach and Whippet providing the most services across the county. The bus network can be considered the most accessible public transport available with direct connections to towns and rural villages.

3.2.1.1. Bus Connectivity

Key to encouraging use of public transport for journeys is the accessibility of residents to reliable bus services. It is generally agreed that people would be willing to walk approximately 500m to access a bus stop. The resulting bus connectivity in Greater Cambridge is shown in Figure 7 below. While Figure 8 shows the Cambridge Area in more detail.

Figure 7: Bus Accessibility in Greater Cambridge

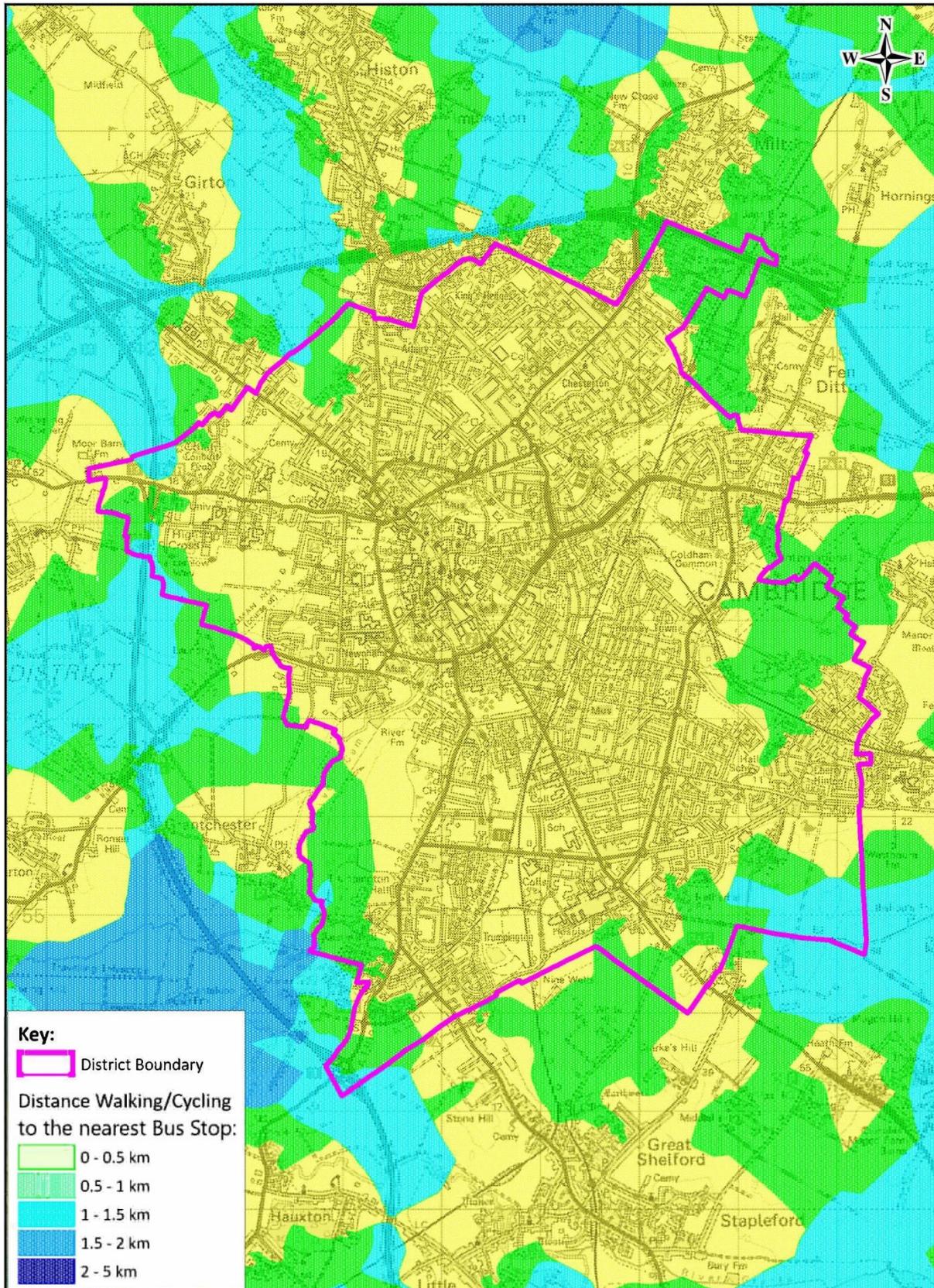


Source: Cambridgeshire County Council

From the information in Figure 7 it is possible to see that the vast majority of the settlements in South Cambridgeshire are within 500m from a bus stop. However, the frequency of many of these services means that they are not an attractive mode of transport for regular journeys such as to work. It is also clear that the majority of the routes that currently exist focus on the centre of Cambridge and therefore for people looking to access the major employment areas on the edge of Cambridge by public transport they would have to change routes at least once which can deter use of public transport. Figure 8 below shows that all of the existing developed area in the city of Cambridge is within 400m however as previously noted the routes focus on the centre

of Cambridge meaning that residents would have to access more than one service to cross the city to access the major employment areas.

Figure 8: Bus Accessibility in Cambridge



Source: Cambridgeshire County Council

From these figures it is clear to see that there is a good coverage of the main areas that commute in to Greater Cambridge and very good coverage in Cambridge itself but the journey to work indicated only 13% of journeys are made by bus. As mentioned above the current model where the majority of the routes focus on the centre of Cambridge must be an important factor in this but this is not enough to fully explain the low level of bus use for journeys which needs to be considered in the choice of development locations.

3.2.1.2. Bus Frequencies

The details of the services offered in Greater Cambridge are set out in Table 8 below.

Table 8: Bus Frequencies in Greater Cambridge

Service	Operator	Weekday Frequency	Saturday Frequency	Sunday frequency
Citi 1 - Fulbourn- Cherry Hinton- Addenbrooke's	Stagecoach in Cambridge	Every 10 minutes	Every 20 minutes	Every 30 minutes
Citi 2 - Addenbrooke's- City Centre - Science Park	Stagecoach in Cambridge	Every 10 minutes	Every 20 minutes	Every 30 minutes
Citi 3 - Fison Road - City Centre - Rail Station - Cherry Hinton	Stagecoach in Cambridge	Every 10 minutes	Every 20 minutes	Every 30 minutes
Citi 4 - Cambridge - Hardwick – Cambourne	Stagecoach in Cambridge	Every 20 minutes	Every 20 minutes	Every hour
Citi 5 - Cambridge - Bar Hill - Longstanton - Swavesey (- Fenstanton)	Stagecoach in Cambridge	Every 20 minutes	Every 20 minutes	Every Hour
Citi 6 - Cambridge - Girton – Oakington	Stagecoach in Cambridge	Every 30 minutes	Every 30 minutes	Every Hour
Citi 7 - Cambridge - Sawston - Duxford - Saffron Walden	Stagecoach in Cambridge	Every 20 minutes	Every 20 minutes	Every 30 minutes
Citi 8 - Cambridge - Impington - Histon – Cottenham	Stagecoach in Cambridge	Every 20 minutes	Every 20 minutes	Every 30 minutes
1A – St Ives – Fenstanton – Bar Hill	Dews Coaches	1 service an hour	No service	No service
7A- Trumpington P&R – Hinxton – Whittlesford – Trumpington P&R	A2B Bus & Coach Ltd	Every 30 minutes	Every 30 minutes (between selected hours)	Every 30 minutes
8 - Cambridge - Dry Drayton - Papworth Everard	Whippet Coaches Ltd	3 services a day	3 services a day	No service
9 - Cambridge - Waterbeach - Ely - Littleport	Stagecoach in Cambridge	1 service per hour	1 service per hour	No service
11 - Cambridge - Newmarket - Bury St Edmunds	Stagecoach in Cambridge	Every hour	Every hour	No service
12 - Cambridge - Newmarket - Ely	Stagecoach in Cambridge	Every hour	Every hour	No service

Service	Operator	Weekday Frequency	Saturday Frequency	Sunday frequency
13 - Cambridge - Linton - Haverhill	Stagecoach in Cambridge	Every 30 minutes	Every 30 minutes (during selected times)	Every hour
13a - Cambridge - Haverhill	Stagecoach in Cambridge	Every 30 minutes	Every 30 minutes (during selected times)	Every hour
13B - Haverhill - Linton - Cambridge	Stagecoach in Cambridge	Every 30 minutes	Every 30 minutes (during selected times)	Every hour
13C - Haverhill - Linton - Cambridge	Stagecoach in Cambridge	Every 30 minutes	Every 30 minutes (during selected times)	Every hour
15- Haslingfield - Bassingbourn - Royston	C G Myall & Son	1 service a week (Wednesday)	No service	No service
16A - Cambridge - Long Rd - Teversham - Fulbourn - Balsham - Great Thurlow	Stagecoach in Cambridge	2 Services a day	1 Service a day	No service
18 - Cambridge - Cambourne	Stagecoach in Cambridge	Every hour	Every hour	No service
18 - Newmarket- Fulbourn	A2B Bus and Coach	2 services a day (Tuesday and Friday only)	No service	No service
19 - Cambridge – Horningsea – Landbeach	Stagecoach in Cambridge	1 service a day	No service	No service
25 - Addenbrooke's Hospital - Trumpington	Stagecoach in Cambridge	Every 30 minutes	Every 30 minutes	No service
31- Cambridge - Stapleford - Fowlmere	A2B Bus and Coach	Every 1 hour and 30 minutes	Every 1 hour and 30 minutes	No service
32 - Trumpington P&R – Hauxton	A2B Bus and Coach	Every 30 minutes (during selected times)	Every 30 minutes (during selected times)	Every 30 minutes (during selected times)

Service	Operator	Weekday Frequency	Saturday Frequency	Sunday frequency
46 - Newmarket - Dullingham - Linton	Big Green Bus Company	1 service a week (Tuesday)	No service	No service
47- Brinkley - Dullingham - Newmarket	Big Green Bus Company	1 service a day	No service	No service
75 - Cambridge - Orwell - Wrestlingworth	A2B Coaches	Every 1 hour and 30 minutes (during selected times)	Every 1 hour and 30 minutes (during selected times)	No service
94 - Milton - Impington Village College	Stagecoach in Cambridge	1 service a day	No service	No service
96 - Swavesey - Longstanton	Stagecoach in the Fens Ltd	1 service a day	No service	No service
101 - Whittlesford - Duxford - Saffron Walden	C G Myall & Son	1 service a week (Tuesday)	No service	No service
110 - Ely - Cottenham – Impington	Big Green Bus Company	1 service a day	1 service a day	No service
114 - City Centre - Grafton - Beehive - Addenbrooke's	A2B Travel Group	Every 1 hour and 15 minutes (during selected times)	Every 1 hour and 15 minutes (during selected times)	No service
117 - Cambridge City Centre - Fen Estate	A2B Travel Group	1 service per hour (during selected times)	No service	No service
127 - The Mordens – Bassingbourn – Meldreth – Royston	A2B Travel	Every 2 hours (during selected times)	Every 2 hours (during selected times)	No service
132- Cambridge - Duxford - Saffron Walden	C G Myall & Son	No service	No service	Every hour (during selected times)
199 - Cambridge - Newnham	C G Myall & Son	2 services a week	No service	No service

Service	Operator	Weekday Frequency	Saturday Frequency	Sunday frequency
206 - Cambridge - Impington Village College	Stagecoach in Cambridge	1 service a day	No service	No service
C2 - St Neots - Longstowe - Orwell - Arrington - Croydon - The Hatleys	C G Myall & Son	1 service a week (Thursday)	No service	No service
H - Addenbrooke's – Madingley Road Park & Ride – Cambourne – Papworth	Stagecoach in Cambridge	3 services a day	No service	No service
U - Eddington - Addenbrooke's Hospital	Whippet Coaches Ltd	Every 20 minutes	Every 20 minutes	Every 30 minutes (in peak times)
X3 - Cambridge - Papworth Everard - Huntingdon	Whippet Coaches Ltd	Every hour and half (during selected times)	Every 2 hours	No service
X5- Cambridge - St Neots - Oxford	Stagecoach Bedford	Every 30 minutes	Every 30 minutes	Every hour
X8 - Cottenham – Cambridge	Stagecoach in Cambridge	2 services a day	2 services a day	No service
X9 - Cambridge – Waterbeach – Ely – Littleport	Stagecoach in Cambridge	Every hour	Every hour	No service
X11 - Cambridge – Newmarket – Bury St Edmunds	Stagecoach in Cambridge	4 services a day	4 services a day	No service
X13 - Cambridge - Linton - Haverhill	Stagecoach in Cambridge	Every 30 minutes	Every 30 minutes	Every hour

Source: Cambridgeshire County Council

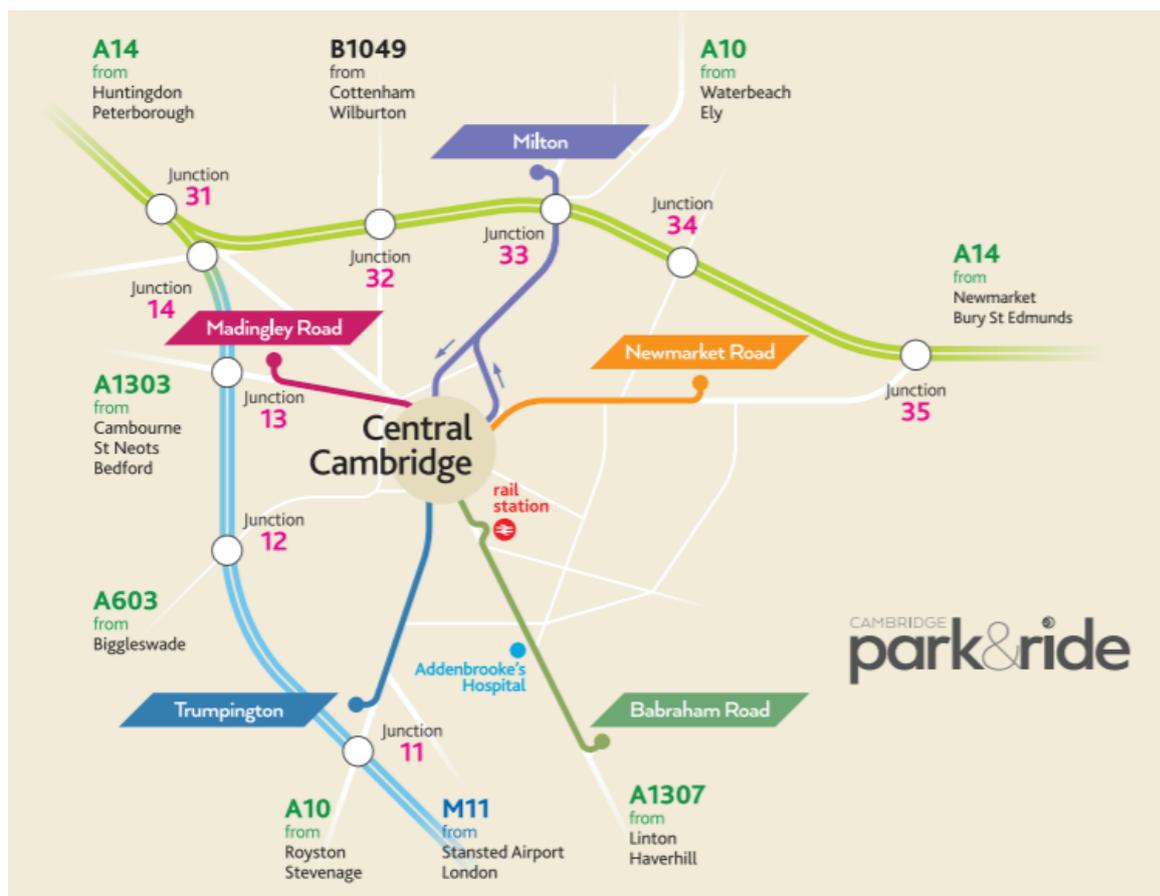
From the information in Table 8 it is possible to see that within Cambridge City the Citi services offer the most frequent services with a bus every ten or twenty minutes during weekdays. Many of the services which provide links to South Cambridgeshire and other Cambridgeshire districts operate a reduced service compared to the Citi routes with some routes having a service per hour. All of the bus services across Greater Cambridge have a reduced service on weekends with most routes not operating on Sundays.

The frequency of these bus journeys is one of the major reasons that the bus mode share for journeys to work is so low in Greater Cambridge as the low frequency of services means that people’s arrival and departure times are limited. In addition the service times do not necessarily coincide with the start and end of the working day and certainly don’t allow shift workers to make use of the existing bus services.

3.2.2. Park and Rides

Cambridge has five park and ride sites located around the outskirts of the city. These sites work to reduce the number of cars entering the city centre. The five main park and ride sites and the bus routes can be seen in Figure 9.

Figure 9: Cambridge City Park and Ride Network



Source: <http://cambridgeparkandride.info/index.shtml>

In addition to the five sites shown above there is also a Park & Ride site located at Longstanton which is on the Cambridge Guided Busway

Table 9: Park and Ride Buses Frequency

Service	Operator	Weekday Frequency	Saturday Frequency	Sunday Frequency
Madingley Road Park & Ride	Stagecoach in Cambridge	Every 10 minutes	Every 10 minutes	Every 15 minutes
Newmarket Road Park & Ride	Stagecoach in Cambridge	Every 10 minutes	Every 10 minutes	Every 15 minutes
Trumpington Park & Ride	Stagecoach in Cambridge	Every 10 minutes	Every 10 minutes	Every 15 minutes
Babraham Road Park & Ride	Stagecoach in Cambridge	Every 10 minutes	Every 10 minutes	Every 15 minutes
Milton Park & Ride	Stagecoach in Cambridge	Every 10 minutes	Every 10 minutes	Every 15 minutes
Longstanton Park & Ride	Stagecoach in the Fens Ltd	Every 15 minutes	Every 15 minutes	Every 30 minutes

Source: Cambridge Park and Ride

Table 10: Cambridge Park and Ride Capacity

Site	Capacity
Babraham Road	1,458
Madingley Road	930
Milton	792
Newmarket Road	873
Trumpington	1,600
Longstanton	350

Source: Cambridgeshire County Council

The current capacity of all of the park and rides is 6,025 parking spaces as shown in Table 10. In 2018 there were over 3.24 million park and ride passenger journeys which indicates that the park and rides offer a viable option for trips into Cambridge and the Biomedical Campus.

3.2.3. Busway

The Cambridgeshire Guided Busway is a segregated busway connecting Cambridge to St Ives with journeys continuing to Huntingdon on road as shown in Figure 10. The guided busway network is unique to Cambridge in the UK and provides excellent connections to Cambridge and Trumpington with wider public transport connectivity to bus routes linking to Peterborough and Royston amongst other destinations.

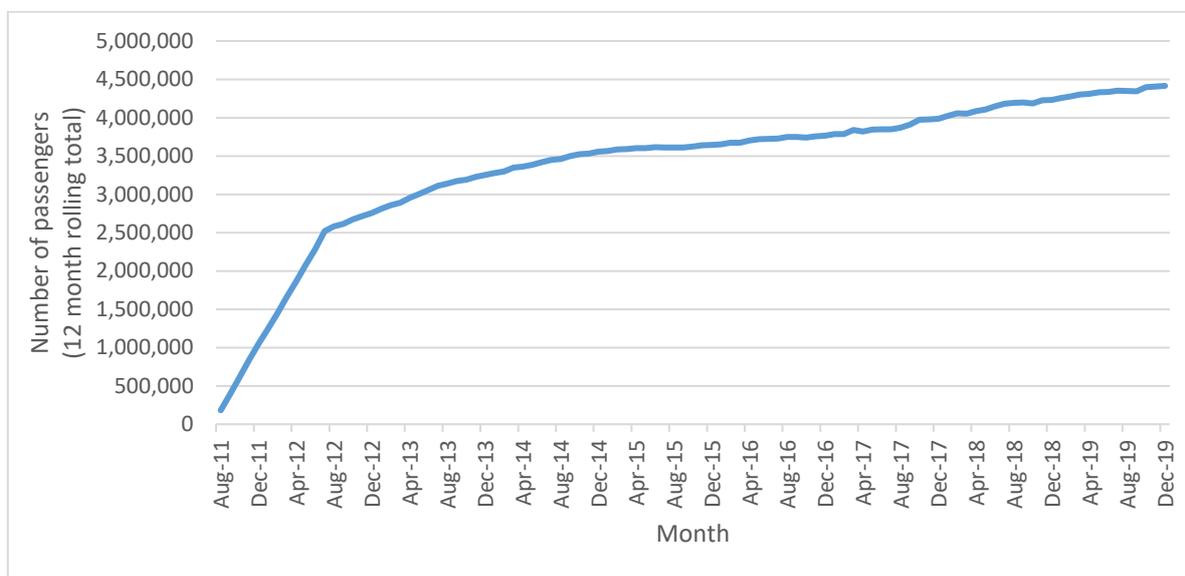
Figure 10: Cambridgeshire Guided Busway Network Map



Source: The Busway

Figure 11 below shows the growth in patronage on the guided busway since it opened in August 2011.

Figure 11: Cambridgeshire Guided Busway Passenger Numbers



Source: Cambridgeshire County Council

From the information in Figure 11 it is possible to see that patronage levels rose rapidly to June 2012 and has continued to increase gradually since. The latest figures available indicate that the busway carried 4.4 million passengers in 2019, which represented a 4% increase compared to 2018.

3.2.3.1. Busway Frequencies

The Cambridgeshire Busway services operate between 6am and midnight on Monday to Saturday. Reduced hours on Sunday operate between 9am and 7pm. Table 11 provides an overview of the frequency of the guided busway services.

Table 11: Cambridgeshire Guided Busway Frequency

Routes	Operator	Weekend Frequency	Saturday Frequency	Sunday Frequency
The Busway A	Stagecoach in the Fens Ltd	Every 15 minutes	Every 15 minutes	Every 30 minutes
The Busway B	Stagecoach in the Fens Ltd	Every 15 minutes	Every 15 minutes	Every 30 minutes
R - Trumpington P&R - Cambridge Rail Station	Stagecoach in the Fens Ltd	Every 10 minutes	Every 15 minutes	Every 15 minutes
D - Cambridge - Longstanton - St Ives	Stagecoach in Cambridge	Every hour	Every Hour	Every 30 minutes

Source: The Busway

The Busway offers a reliable direct route into Cambridge linking up with the major employment areas at the Science Park and the Biomedical Campus, and provides a viable alternative to the private car for employees looking to access the site.

3.2.4. Rail Network

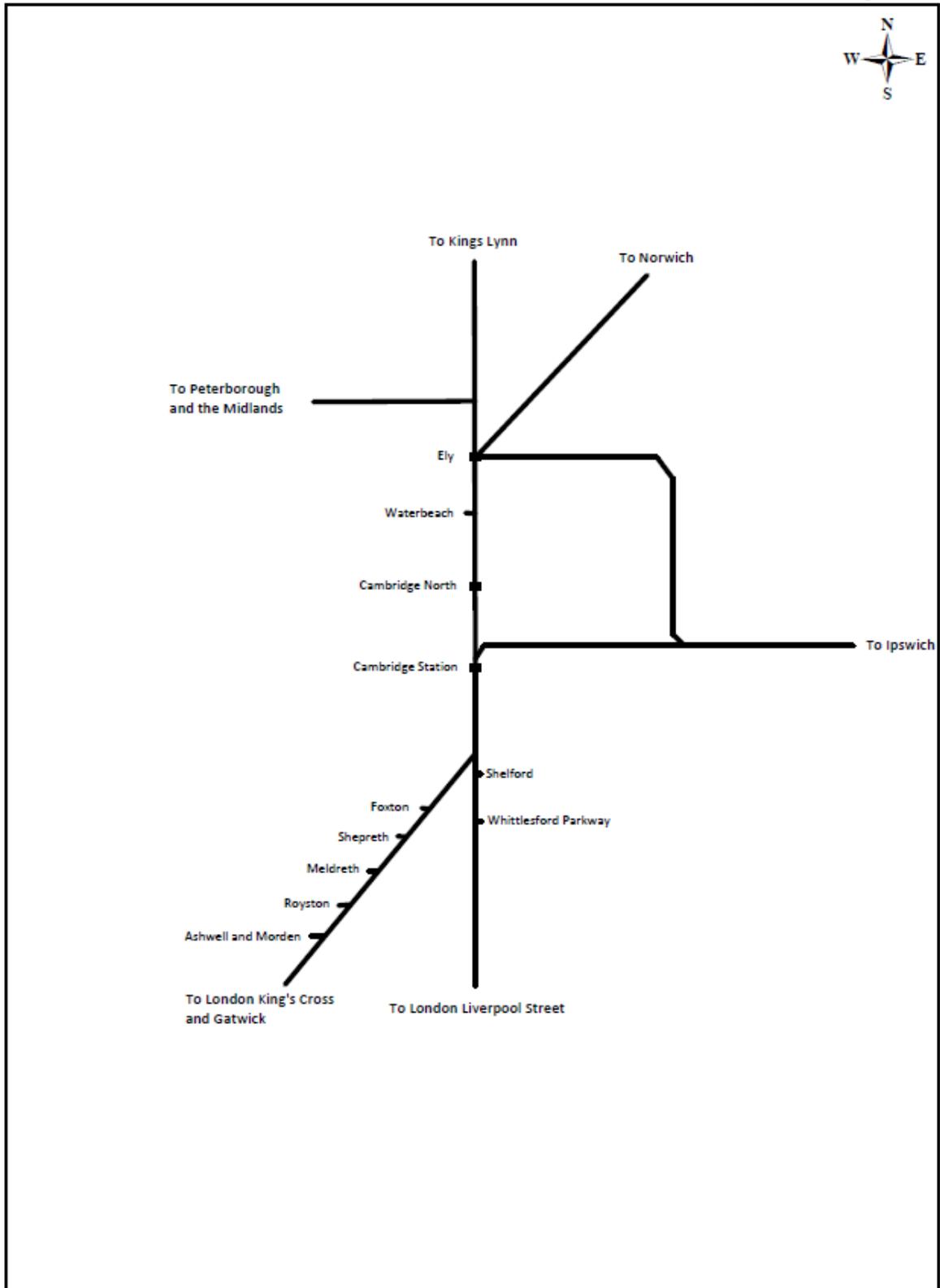
Greater Cambridge has 9 train stations. These are as follows:

- Cambridge
- Cambridge North
- Waterbeach
- Foxton
- Shepreth
- Meldreth
- Ashwell & Morden
- Shelford
- Whittlesford Parkway

Figure 12 shows the current rail network that serves Cambridge and the stations in Greater Cambridge and the links to locations served. The current network offers direct services from Cambridge to London Kings Cross, London Liverpool Street, Gatwick Airport, Stansted Airport, Norwich, Ipswich, Ely, Kings Lynn, Brighton and Peterborough.

Figure 12: Regional Rail Network Serving Greater Cambridge

Cambridgeshire County Council



Scale (at A4): 1:14000 Centred at: 544532,259369 Date: 26/10/2020 © Crown copyright and database rights 2020 OS 100023205

Source: Cambridgeshire County Council

3.2.4.1. Rail Frequencies

Table 12 shows the direct services accessible from Greater Cambridge Stations. Greater Cambridgeshire is well connected by rail with peak hour services offering a frequency of up to six services an hour to Ely, eight services an hour to London and half hourly services to Stansted, Peterborough and Brighton.

Table 12: Greater Cambridgeshire Rail Frequencies

Station	Destination	Service Level (Trains per hour)			
		Weekday	Weekday off peak	Saturday	Sunday
Cambridge	London Kings Cross / St Pancras	Up to 6	Up to 6	4	3
	London Liverpool Street	2 to 3	2	2	2
	Cambridge North	6 to 7	6 to 7	3	3
	Ipswich	1	1	1	1 service every 2 hours
	Norwich	1	1	1	1
	Stansted Airport	2	2	2	2
	Brighton	2	1 to 2	1	1
	Birmingham New Street	1	1	1	1
	Peterborough	1 to 2	1 to 2	1	1
	Kings Lyn	2	1	1	1
	Ely	6	4	6	3
Cambridge North	London Kings Cross	1 to 2	1 to 2	1 to 2	1
	Cambridge	6 to 7	6 to 7	6	3
	London Liverpool Street	3	3	1	1
	Ely	5	5	5	3
	Norwich	1	1	1	1
	Kings Lynn	1	1	1	1

Station	Destination	Service Level (Trains per hour)			
		Weekday	Weekday off peak	Saturday	Sunday
Waterbeach	Peterborough	1 to 2	1 to 2	1	1
	London Kings Cross	3	1	1	1
	Kings Lynn	2	1	1	1
Foxton	London Kings Cross	2	2	1 to 2 in peak period, 1 in off peak	1
	Cambridge	2	2	1	1
	Cambridge North	1	1	No service	No service
Shepreth	London Kings Cross	2	2	1 to 2 in peak period, 1 in off peak	1
	Cambridge	2	2	1	1
	Cambridge North	1	1	No service	No service
Meldreth	London Kings Cross	2	2	1 to 2 in peak period, 1 in off peak	1
	Cambridge	2	2	1	1
	Cambridge North	1	1	No service	No service
Ashwell & Morden	London Kings Cross	3 to 4	3 to 4	2 to 3 in peak period, 1 in off peak	1
	Cambridge	3	3	2 to 3 in peak period, 1 in off peak	1
	Cambridge North	1	3	2 to 3 in peak period, 1 in off peak	1
	Brighton	2	2	1	1
Shelford	London Liverpool Street	2	1	1	1

Station	Destination	Service Level (Trains per hour)			
		Weekday	Weekday off peak	Saturday	Sunday
Whittlesford Park Way	Cambridge	2	2	1	1
	Cambridge North	1	1	1	1
	London Liverpool Street	3 to 4	3	3	3 in peak period, 1 in off peak
	Cambridge	2	2	1	1
	Cambridge North	1	1	1	1

Source: Greater Anglia / Great Northern / National Rail

3.2.4.2. Rail Station Usage

Rail usage has seen large growth in Cambridgeshire and the Greater Cambridge area over the last 20 years, as shown in Table 13. Rail growth and connectivity is key to ensure Cambridgeshire's economy continues to grow.

Table 13: Annual Passenger Usage

Station (Cambridge or South Cambridgeshire unless noted)	Annual passenger usage (2018-19)		Growth from (2017-18)
	Entries and exits	Interchange	
CAMBRIDGE	11,983,320	555,666	3.9%
Cambridge North	812,972	1,892	66.3%
Foxton	101,900	-	-0.2%
Shepreth	115,600	-	1.1%
Meldreth	295,470	-	-4.0%
Royston (Hertfordshire)	1,467,154	21,255	-0.7%
Ashwell and Morden	156,490	-	2.7%
Shelford	207,478	-	1.4%
Whittlesford Parkway	558,134		3.6%
Great Chesterford (Essex)	110,120	-	0.9%
Audley End (Essex)	979,414	8458	-3.2%
Waterbeach	407,650	-	-5.2%
Ely (East Cambridgeshire)	2,386,744	466,015	4.6%
Dullingham (East Cambridgeshire)	41,832	-	7.2%
Newmarket (Suffolk)	355,068	-	-1.0%

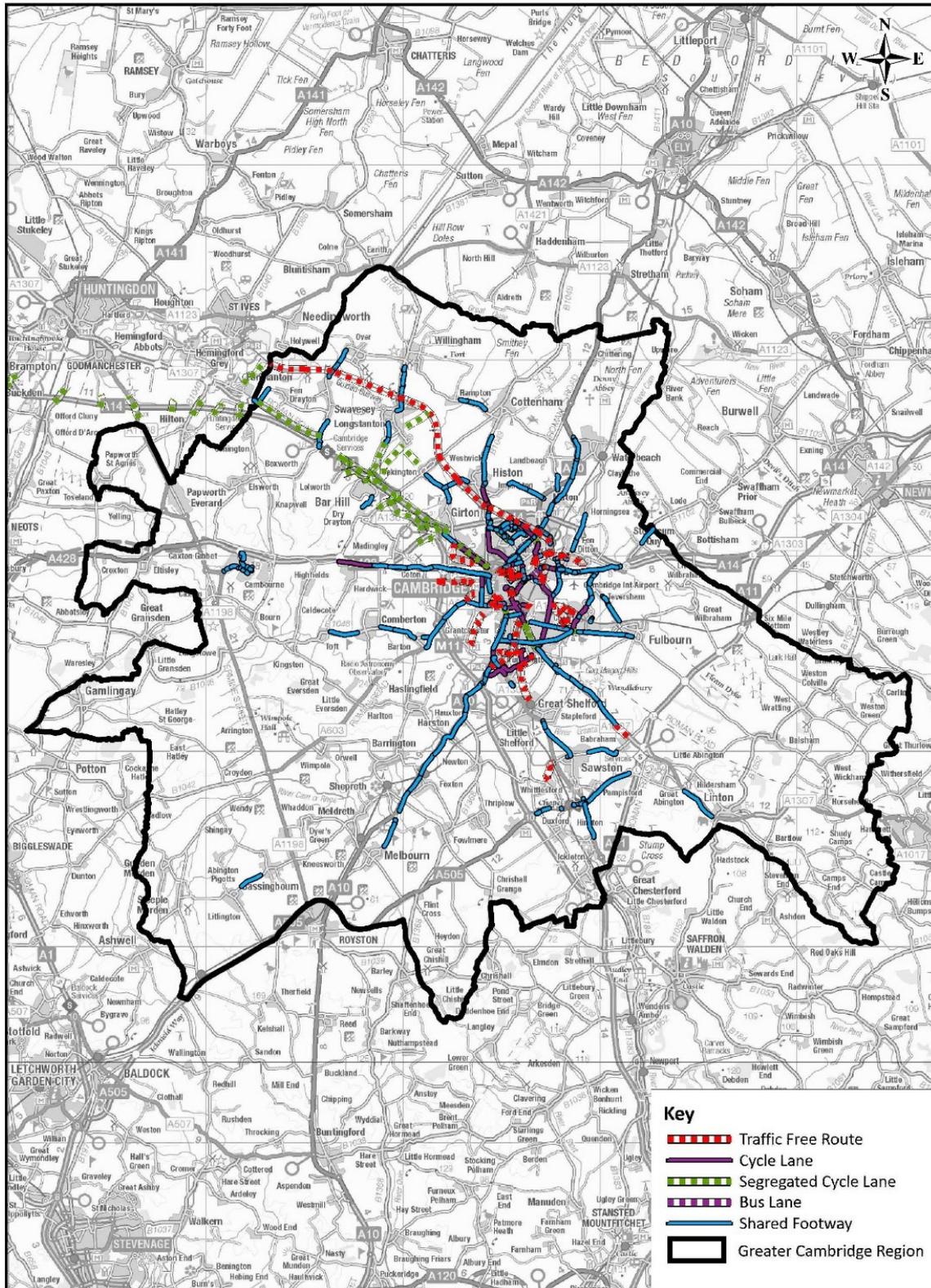
Source: Transport Strategy for Cambridge and South Cambridgeshire

The most recent addition to the rail network in Greater Cambridge is Cambridge North Station which opened in May 2017. This station is a 20 minute walk from the Cambridge Science Park in the north of the city and also offers a direct connection to the Cambridgeshire Guided Busway for interchange.

3.3. Cycle Network

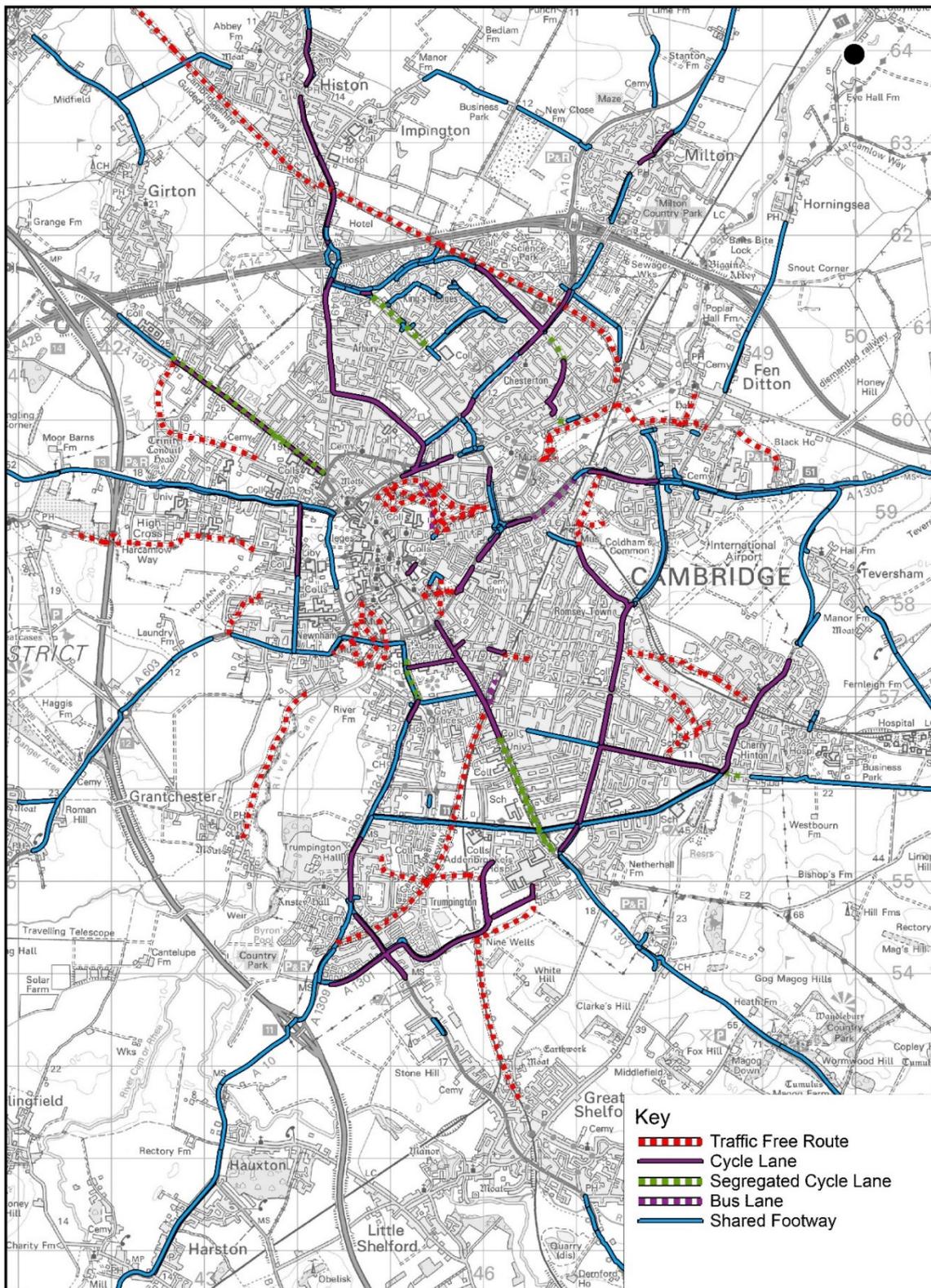
The existing cycle network within Greater Cambridge is shown in figure 13 while the network in Cambridge is shown in Figure 13.

Figure 13: Greater Cambridge Cycle Network



Source: Cambridgeshire County Council

Figure 14: Cambridge City Cycle Network



Source: Cambridgeshire County Council

Table 14: Greater Cambridge Cycle Network length

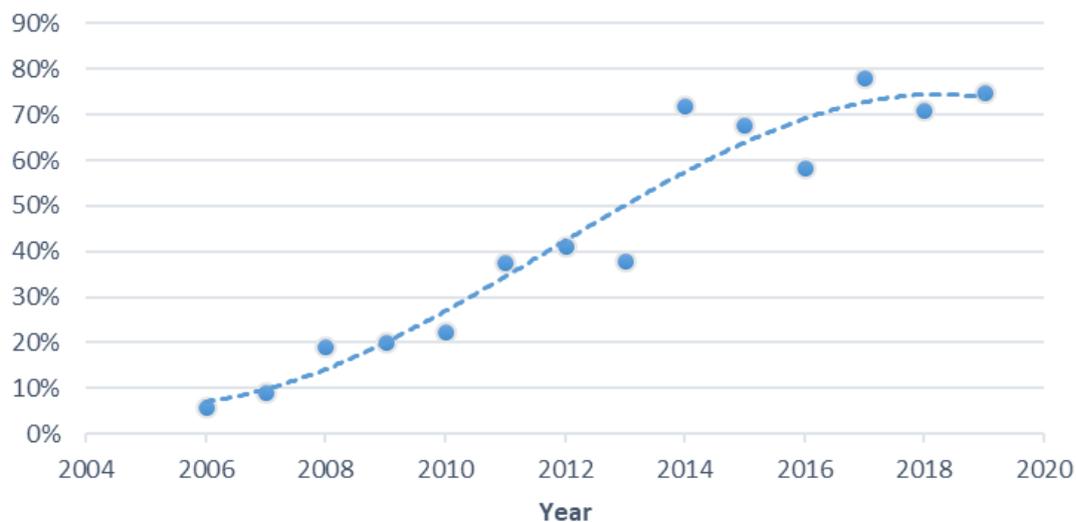
Classification Type	Total Length (Miles)
Traffic Free	31.8
Cycle Lane	31.3
Segregated Cycle Lane	27.4
Bus Lane	3.6
Shared Use Footway	83.1

Source: Cambridgeshire County Council - Cycle Team

Data from the 2011 National census shows that 30% of journeys to work by Cambridge residents are by cycle. For Cambridgeshire as a whole the figure is 9.7%, which is much higher than the average of 3% for England.

Cambridgeshire County Council has cycle counters set up around the county. The River Cam Screenline monitoring which takes place every April shows there has been an increase in the level of cycling in the city up to 2017 but there are signs that this was starting to level off in 2018 as shown in Figure 15.

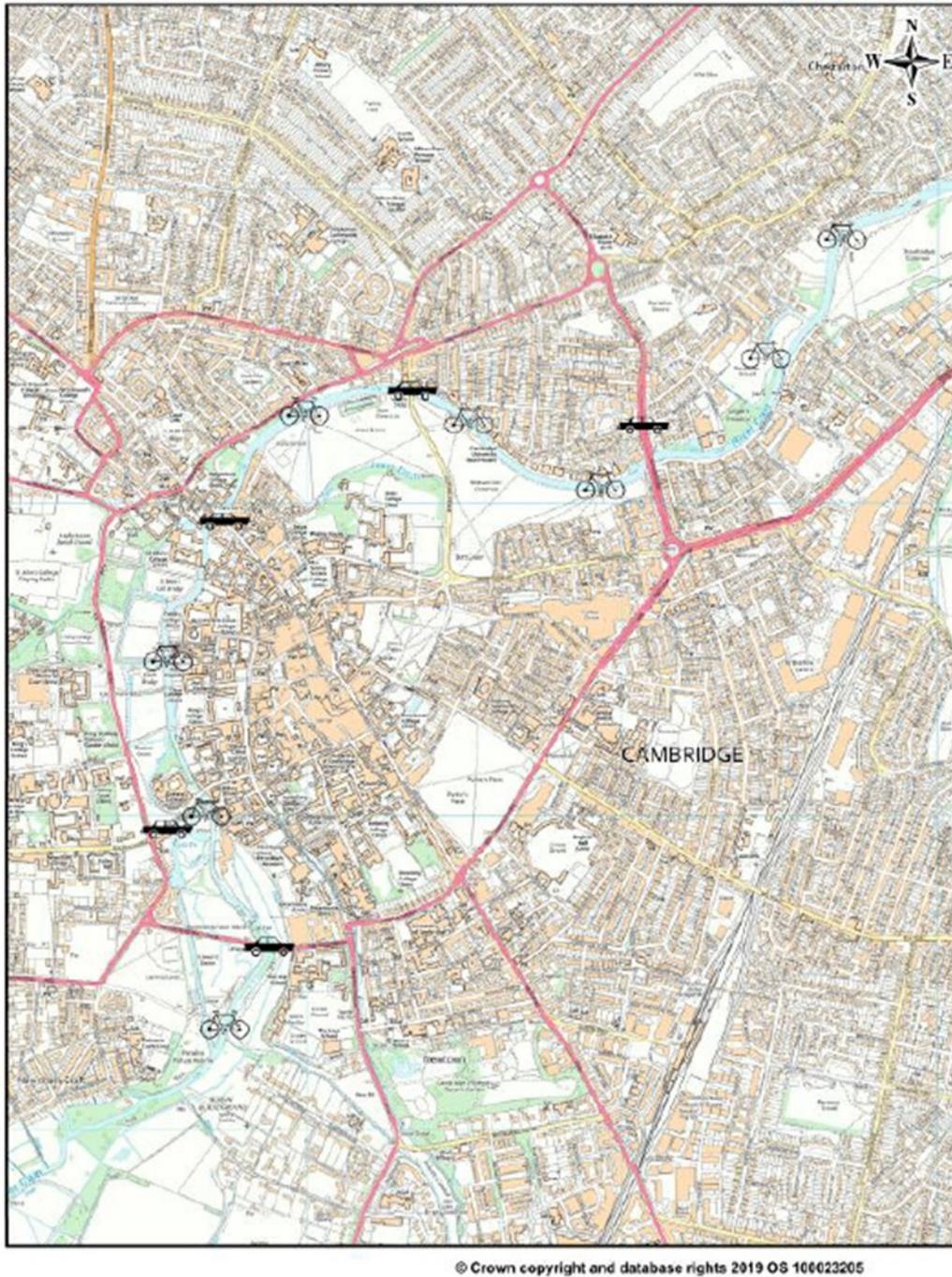
Figure 15: Cambridgeshire Cycle Flows across the River Cam screenline



Source: Cambridgeshire County Council - Business Intelligence team

Figure 16 below show the locations of the cycle monitors along the River Cam that are reported above.

Figure 16: River Cam Screenline



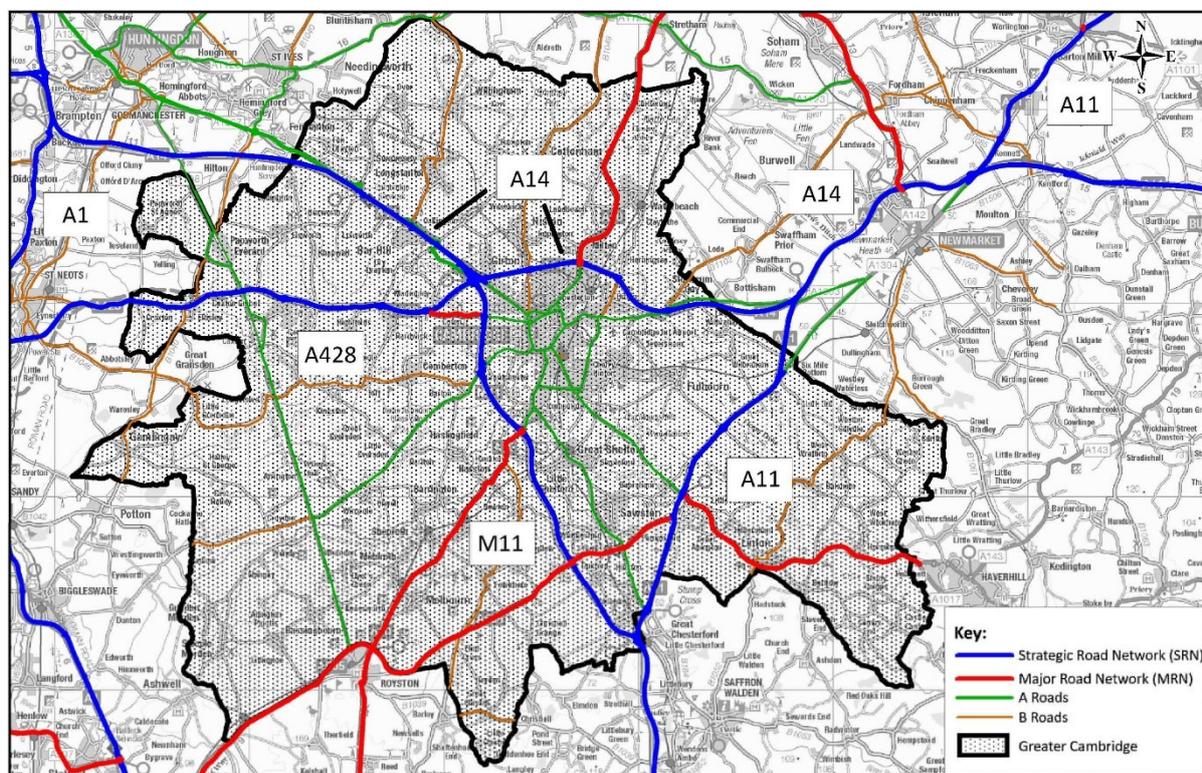
Source: Cambridgeshire County Council Traffic Monitoring Report 2018 (Figure 2.3)

3.4. Highway Network

3.4.1. Highway Connectivity

Greater Cambridge has good connections to the national and regional strategic road network. The main strategic routes are shown in the location map in Figure 17.

Figure 17: Highway network



Source: Cambridgeshire County Council

The routes that form part of either the Strategic Road Network (SRN) or Main Road Network (MRN) in Greater Cambridge are:

- The M11 (SRN) is a north south link between Cambridge, Stansted Airport and London. It passes to the west of Cambridge and ends at Girton where it meets the A14 and A428.
- The A10 (MRN) is a north south link linking London to Kings Lynn via Cambridge. In Greater Cambridge, it links Ely and Royston to Cambridge.
- The A11 (SRN) links Norwich to London, and passes through the east of Greater Cambridge between the A14 at Newmarket and the M11 at Great Chesterford.
- The A14 (SRN) is an east west link and links Greater Cambridge with the Midlands, the East Coast ports, and the north of England via the A1, M1 and M6 and is part of the Trans European Network - Transport (TEN-T).
- The A428 (SRN) links Cambridge to the A1 at St Neots, and provides onwards connection via the A421 to Bedford, Milton Keynes, Oxford.
- The A505 (MRN) is an east west link running from the A11 at Granta Park to the A1, Luton and the M1. It links a number of towns in Hertfordshire to Cambridge.

- The A1303 (MRN) between the A428 and the M11 to the west of Cambridge, providing for movements that cannot be made on the strategic road network.
- The A1307 (MRN) south west of Cambridge links Haverhill and the A11.
- The A1307 (MRN) de-trunked A14 and local access road to Huntingdon.

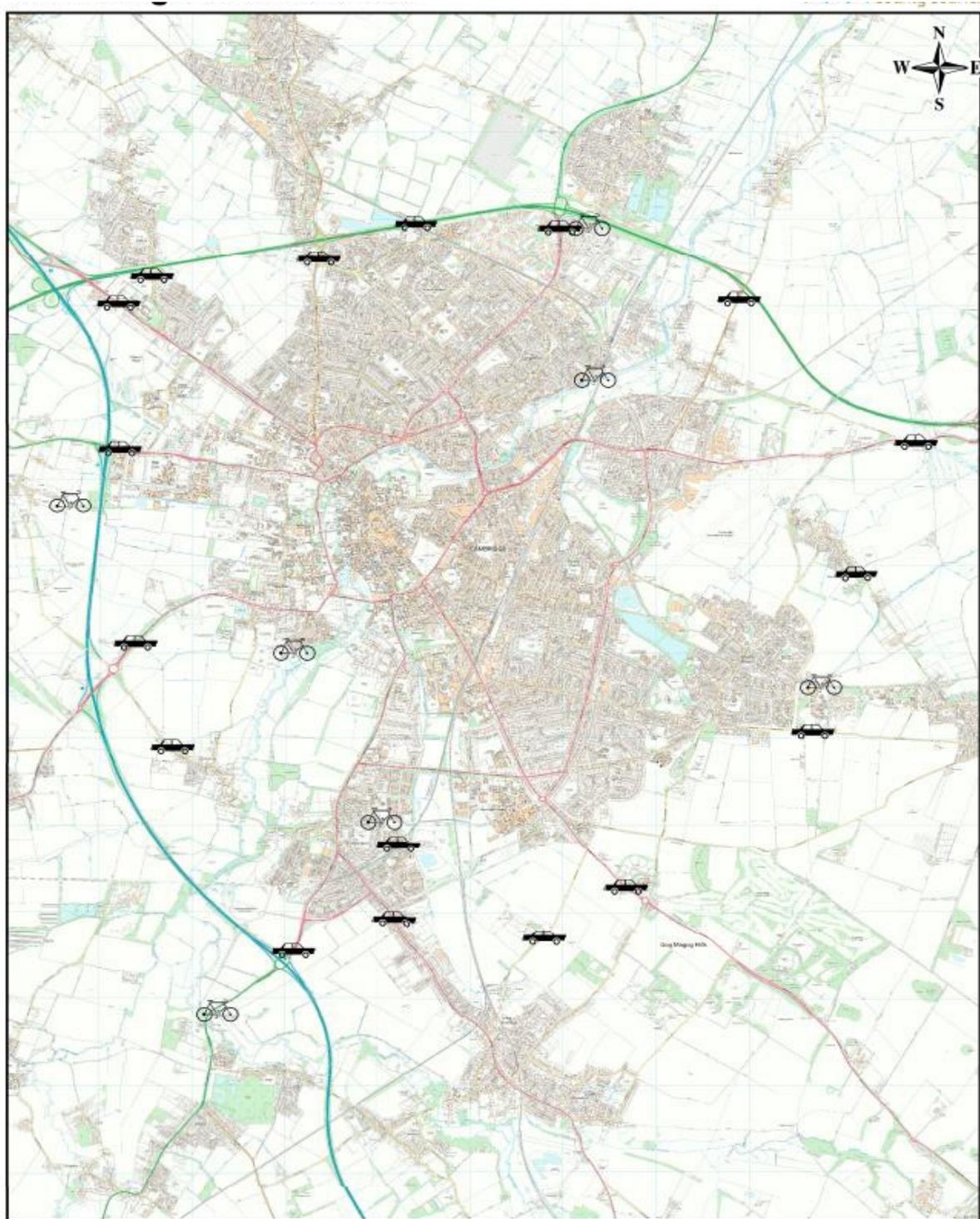
In addition to the strategic routes running through Greater Cambridge listed above, there are several other A and B class roads in the Greater Cambridge area (excluding those within Cambridge itself) these are as follows;

- The A603 running from Cambridge to the A1198 north of Bassingbourn.
- The A1198 running from Huntingdon to the south of Cambridgeshire via the A428 Caxton Gibbet junction, providing links to Camborne, Royston and beyond.
- The A1301 running from Cambridge to the A11 at Great Chesterford.
- The A1303 running from Cambridge to Newmarket parallel to the A14.
- The B1046 running from Barton to St Neots and provides links to Bourn and Comberton.
- The B1049 provides links from Wilburton to the A14 via Cottenham and Histon.
- The B1050 running from Earith to the A14 near Longstanton provides links through Willingham and Northstowe.
- The B1052 running from Newmarket to Linton.
- The B1102 between the A142 at Fordham and the A1303 / A14 at Quy.
- The B1368 from Hauxton to the south via Newton and Fowlmere.
- The B1040 linking the A1141 to A1307 via St Ives.

3.4.2. Traffic Flows

Cambridgeshire County Council undertakes annual monitoring counts within Cambridge and the major market towns. Within the Greater Cambridge area the only monitoring done is on two screen lines in Cambridge. These are the River Cam Cordon shown in Figure 16 above and the Cambridge Radial Cordon shown in Figure 18 below.

Figure 18: Cambridge Radial Cordon Traffic Count Locations



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Source: Cambridge City Traffic Monitoring Report 2018 (Page 8)

Data has been collected on both the Cambridge cordons over many years providing an indication of the trends in the level of trips across both cordons.

3.4.2.1. River Cam Cordon

The 2019 River Cam Cordon indicates that of the 123,573 trips that crossed the river Cam Cordon 66,613 were pedestrians or Cyclists which represents 64% of trips crossing the cordon.

Table 15: Vehicles Crossing the River Cam Cordon April 2019

Vehicle Type	Vehicles: 12 Hr Flows	Vehicles: Modal Split
Motor Cycles	1,337	1%
Cars & Taxis	46,321	37%
Light Goods	6,564	5%
Heavy Goods	1,179	1%
Bus & Coach	1,559	1%
All Motor Vehicles	56,960	46%
Pedal Cycles	35,511	29%
Pedestrians	31,102	25%
Total (All modes)	123,573	100%

Source: Cambridge City Traffic Monitoring Report 2019

The information in Table 16 shows how the number of trips across the River Cam cordon has changed since 2009, for the purposes of this exercise 2009 is assumed to be 100% so the subsequent years show how the number of trips by each mode has changed.

Table 16: Traffic Growth on the Urban River Cam Cordon

Vehicle Type	Index (2009 = 100)						Change 2018 to 2019
	2009	2015	2016	2017	2018	2019	
Motor Cycles	100	86	93	65	96	124	30%
Cars & Taxis	100	94	93	96	92	93	1%
Light Goods	100	106	106	106	103	95	-8%
Heavy Goods	100	87	94	101	71	112	57%
Bus & Coach	100	99	87	89	81	83	2%
All Motor Vehicles	100	95	95	97	93	94	1%
Pedal Cycles	100	137	142	147	136	152	12%

Source: Cambridge City Traffic Monitoring Report 2019

From the information in Table 16 it is possible to see that the volume of cycle trips crossing the River Cam Cordon has gone up by 52% since 2009 whilst car and taxi trips have dropped by 7%. When considering the changes between 2018 and 2019 it can be seen that the largest percentage change was in the number of Heavy Goods Vehicles and Motor Cycles. Car traffic saw a 1% increase over 2018 levels whilst cycling saw a 12% increase since 2018. This indicates that of the new trips made in 2019 the largest modes shift was to motorcycle and then pedal cycle.

3.4.2.2. Cambridge Radial Cordon

Table 17 shows the number and type of vehicles crossing the Cambridge radial cordon. In April 2019.

Table 17: Vehicles Crossing the Cambridge Radial Cordon - April 2019

Vehicle Type	Vehicles: 12 Hr Flows	Vehicles: Modal Split
Motor Cycles	1,461	1%
Cars & Taxis	173,289	79%
Light Goods	21,084	10%
Heavy Goods	4,615	2%
Bus & Coach	1,784	1%
All Motor Vehicles	202,233	92%
Pedal Cycles	12,200	6%
Pedestrians	4,790	2%
Total (All modes)	219,223	100%

Source: Cambridge City Traffic Monitoring Report 2019

The information in Table 17 shows there were a total of 219,223 trips across the radial cordon in April 2019 of which 202,233 were by motor vehicle which accounts for 92% of trips.

Table 18: Traffic Growth on the Cambridge Radial Cordon

Vehicle Type	Index (2009 = 100)						Change 2018 to 2019
	2009	2015	2016	2017	2018	2019	
Motor Cycles	100	92	99	79	77	66	0.1%
Cars & Taxis	100	110	110	109	107	110	2%
Light Goods	100	103	102	112	113	99	12%
Heavy Goods	100	153	157	129	129	122	5%
Bus & Coach	100	104	103	79	79	76	3%
All Motor Vehicles	100	110	110	108	108	108	-0.04%
Pedal Cycles	100	165	185	170	170	173	-2%

Source: Cambridge City Traffic Monitoring Report 2019

From the information in Table 18 it is possible to see that the volume of cycle trips crossing the Radial Cordon has gone up by 73% since 2009 and car and taxi trips have also gone up but by just 10%. When considering the changes between 2018 and 2019 it can be seen that the largest percentage change was in the number of Light Goods Vehicles which saw a 12% increase over 2018 levels whilst cycling saw a 2% drop compared to 2018.

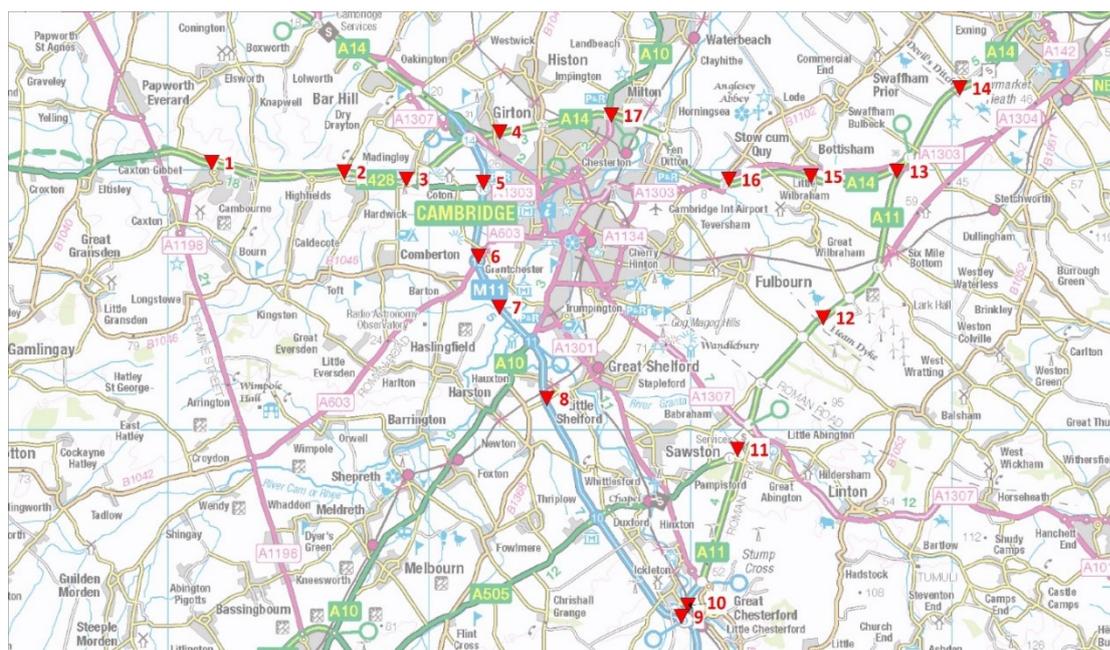
It is interesting to note the very different mode split for trips crossing the two Cambridge cordons with more cycle and walking trips in the central area and higher numbers of LGV's in the outer area. This highlights the differences between the central and outer

areas of Cambridge and indicates that people are more inclined to walk or cycle for trips in the centre compared to the outer areas of the city. The details of the existing cycle networks are set out in section 3.3 of this report.

3.4.2.3. Strategic Road Network

Highways England collects traffic counts along the full extent of the Strategic Road Network, this information has been analysed for the links within the Greater Cambridge area. The location of the counters within Greater Cambridge are shown in Figure 19 below;

Figure 19: Greater Cambridge Two-Way Annual Average Daily Flow Count Locations



Source: Cambridgeshire County Council

Table 19 below shows the two-way Annual Average Daily Flows (AADF) in 2019. Annual Average Daily Flow is the average flow on an average day (Sunday to Saturday inclusive), throughout the year, and is expressed as a 24-hour flow.

Table 19: Greater Cambridge Two-Way Annual Average Daily Flows (AADF) in 2019

Reference	Location	AADF
1	A428 - Camborne	35,860
2	A428 - Hardwick	21,206
3	A428 - Madingley	18,508
4	A14 - Girton	72,760
5	M11 (between J13 and J14)	59,080
6	M11 (between J12 and J13)	79,151
7	M11 (between J11 and J12)	68,216
8	M11 (between J10 and J11)	56,253
9	M11 (between J9 and J10)	44,627
10	M11 (between J9 and J9a)	25,874
11	A11 (between A1307 and A505)	57,248
12	A11 (between A1307 and A1304)	47,315
13	A11 (between A14 and A1304)	40,154
14	A14 (between J37 and J36)	72,425
15	A14 (between J36 and J35)	41,412
16	A14 (between J35 and J34)	50,966
17	A14 (between J34 and J33)	62,420

Source: <http://webtris.highwaysengland.co.uk> and <https://roadtraffic.dft.gov.uk>

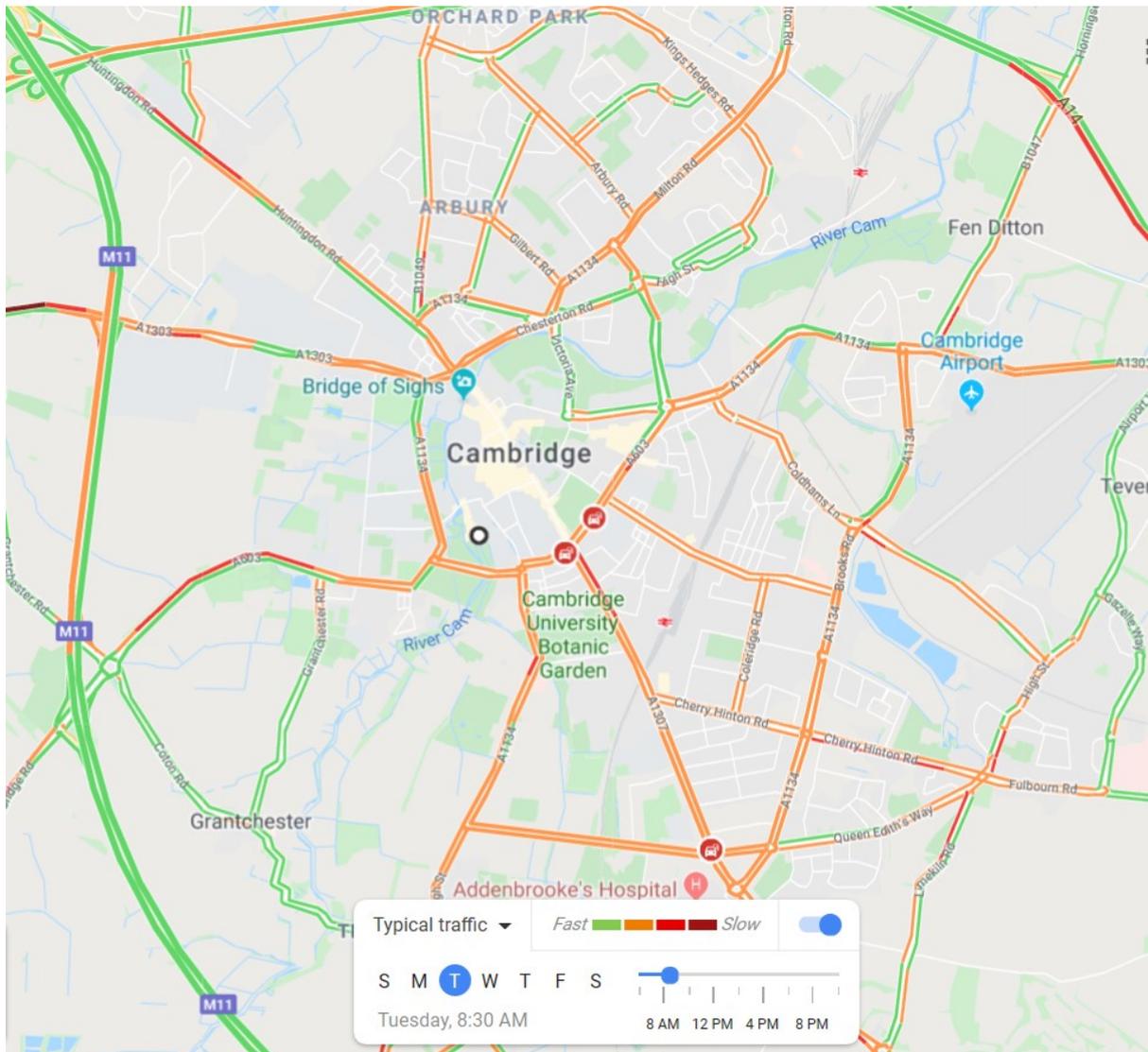
The highest flows on the strategic network were observed on the M11 between Junction 13 and 11 to the west of Cambridge, this implies that approximately a third of traffic on this section of the M11 is accessing Cambridge as the flows either side of these junctions drops considerably.

3.4.3. Traffic Congestion

Congestion acts to limit the effectiveness of the transport network. For example, the average speed on all radial routes entering Cambridge during the peak hour is less than 60% of the 'free flow' speed (i.e. the speed that a motorist would travel at on a road if there were no congestion or other adverse conditions). The road network lacks resilience, particularly on the radial routes in to Cambridge and in the city centre, where the highway network is constrained by the urban environment. Congestion is detrimental for all road users. On average more than 20% of bus services within Greater Cambridge run late, in large part due to congestion which has knock on detrimental environmental and social impacts such as air quality, noise and safety for non-motorised users. Disruption caused by the A14 road works mean that there is no representative congestion data for 2019 in South Cambridgeshire.

Figure 20 shows the observed AM peak traffic congestion in Cambridge in 2019.

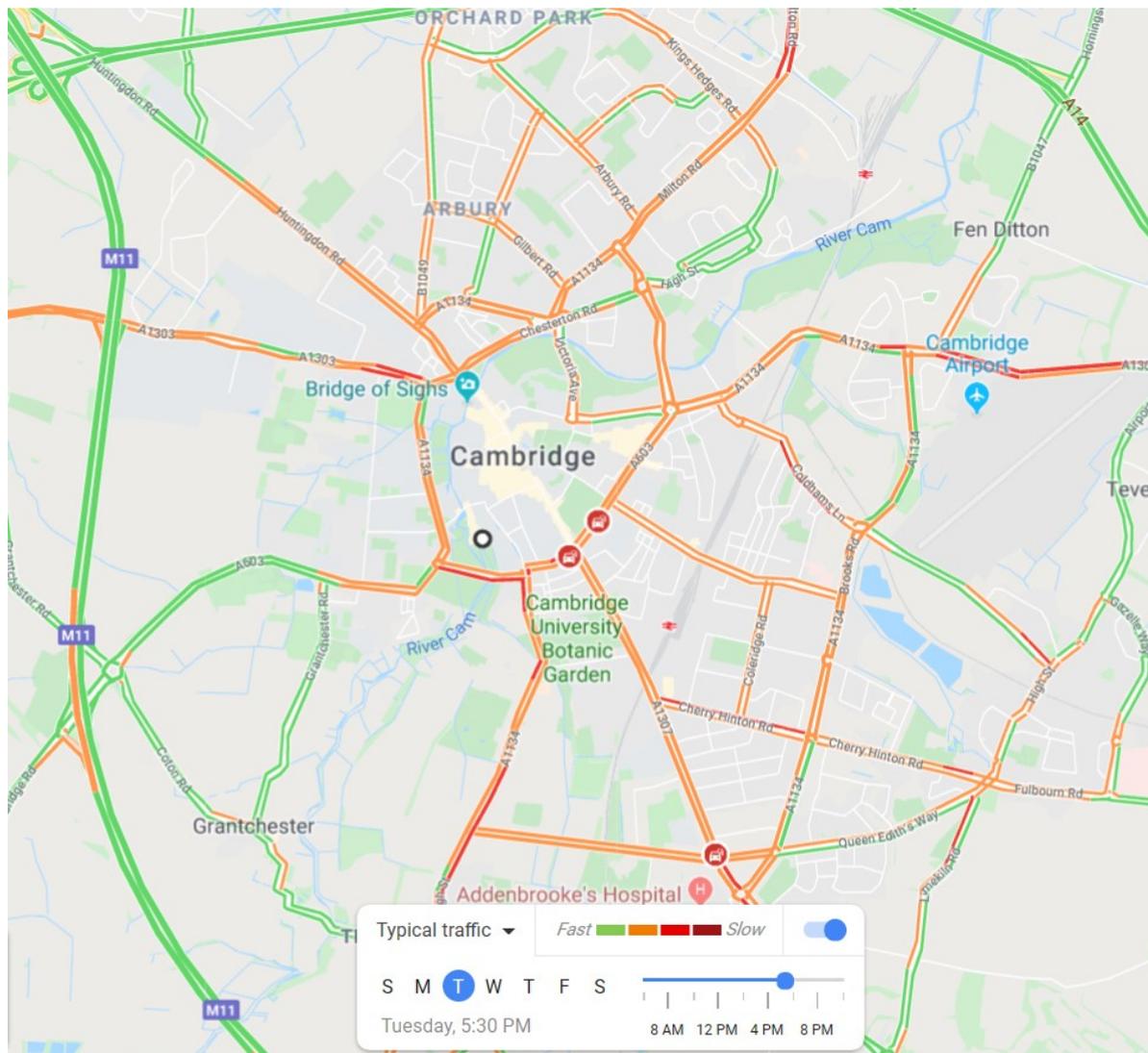
Figure 20: Observed AM Traffic Congestion in Cambridge City 2019



Source: Google Maps 2019

From the information in Figure 20 above it is possible to see that the vast majority of roads in Cambridge were show to be running slower than the free flow speed and in addition all the major arterial routes into the city were showing very slow to stationary traffic at 8:30 in the morning.

Figure 21: Observed PM Traffic Congestion in Cambridge City 2019



Source: Google Maps 2019

From the information in Figure 21 above it is possible to see that the vast majority of roads in Cambridge were shown to be running slower than the free flow speed, in addition there are several stretches of roads shown to be running very slow but the impacts at 5.30 pm are not as severe or as wide spread as in the AM peak.

3.5. Trip Attractors

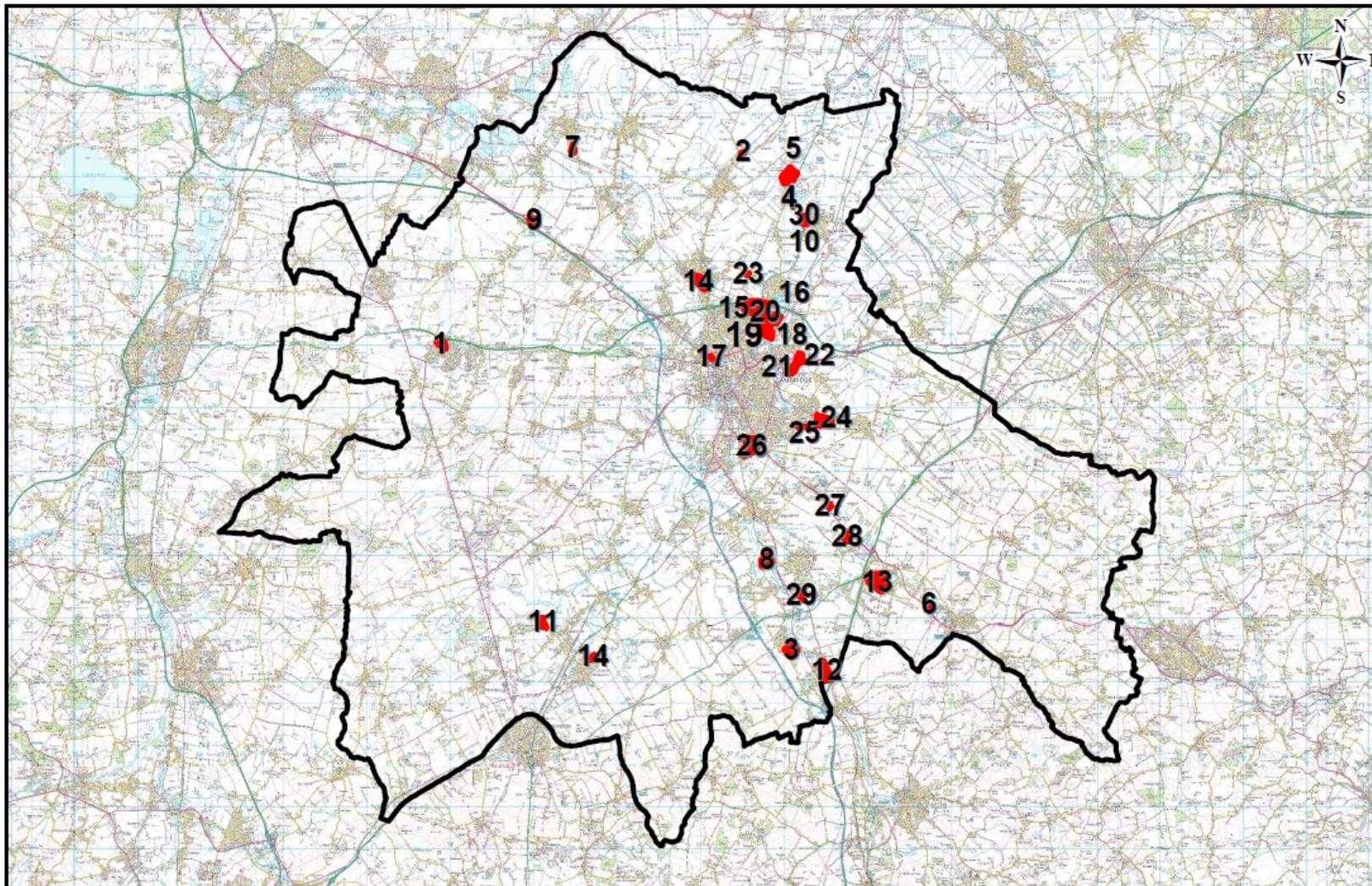
The research and technology industry is one of the key drivers of the local economy and is one of the main trip attractors bringing people to Greater Cambridge. Table 20 shows the major employment and research facilities within Greater Cambridge. The locations of these sites are shown on Figure 22.

Table 20: Major Employment Areas

Ref	Employment Area
1	Cambourne Business Park
2	Brookfield's Business Estate, Cottenham
3	Land at Hixton Road, South of Duxford
4	Cambridge Research Park
5	North of Cambridge Research Park
6	Daleshead Food Ltd, Linton
7	Norman way Industrial Estate, Over
8	Former Spicers Site, Sawston
9	Buckingway Business Park, Swavesey
10	Covent Drive/ Pembroke Avenue, Waterbeach
11	Eternit Site, Meldreth
12	Wellcome Trust Genome Campus, Hinxton
13	Granta Park, Great Abington
14	Regus Cambridge Vision Park
15	Cambridge Science Park
16	St Johns Innovation Park
17	Citi Base Cambridge
18	Cowley Road Industrial Park
19	Nuffield Road Industrial park
20	Cambridge Business Park
21	Marshalls of Cambridge
22	Marshalls Industrial Park
23	Evolution Business park
24	Capital Park, Cambridge
25	Peterhouse Technology park
26	Addenbrooke's Hospital / Cambridge Biomedical Campus
27	Copley Hill Business Park
28	Babraham Research Campus
29	Sawston Trade Park
30	Cambridge Innovation Park

Source: Cambridgeshire County Council

Figure 22: Major Employment Areas in Greater Cambridge



Scale (at A4): 1:240000 Centred at: 543808,255090 Date: 26/10/2020 By: fp611 © Crown copyright and database rights 2020 OS 100023205

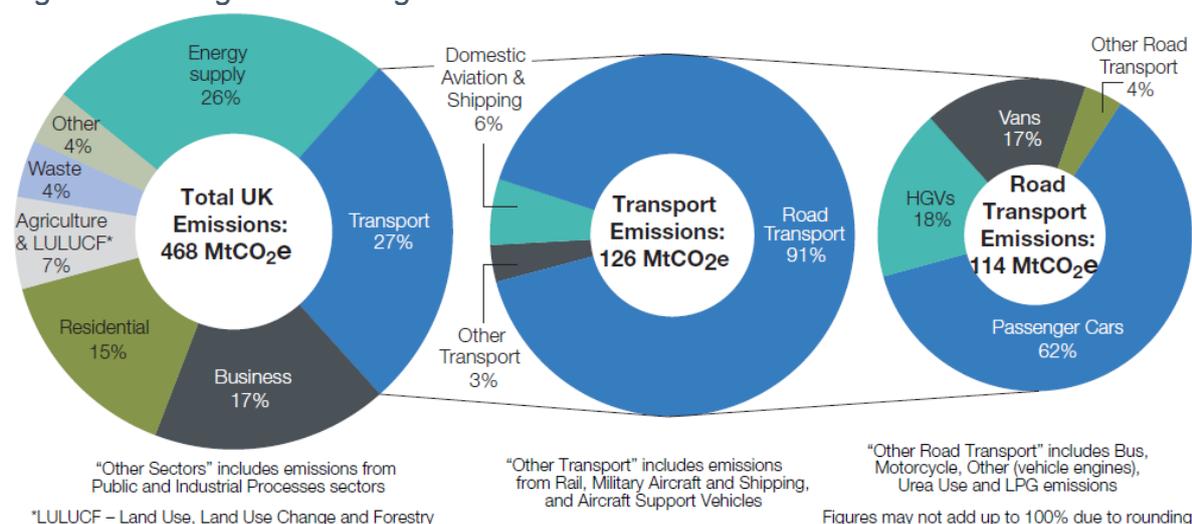
Source: Cambridgeshire County Council

As can be seen from Figure 22 many of the major trip attractors are in more remote locations which are less readily accessible via alternatives to the private car, especially commercial bus services for longer journeys. This is evidenced by the private services run by some of the major employment sites to facilitate access for their employees without the need to drive as part of their Travel Plans.

3.6. Environment Indicators

Road transport accounts for around 27% of air pollution in cities and towns, causing serious pollution. Due to the increase in the vehicle miles travelled, road traffic pollution is considered a major threat to clean air in the UK. Real world emissions of nitrogen oxides (NOx) from diesel vehicles are typically much higher than from petrol equivalents.

Figure 23: UK greenhouse gas emissions 1990-2016



Source: The Road to Zero. Next steps towards cleaner road transport (Fig1.3)

Among the air pollutants gasoline and diesel engines emit are NOx and Particulate Matter (PM). Nitrogen oxides have harmful direct effects on human health, and indirect effects through the damage they do to agricultural crops and ecosystems. PM is a generic term used to describe a complex mixture of solid and liquid particles of varying size, shape, and composition. The size of particles and the duration of exposure are key determinants of potential adverse health effects and the strongest evidence for effects on health is associated with fine particles (PM2.5 and PM10).

UK road transport NOx emissions are primarily from diesel vehicles. However, most road transport PM2.5 emissions are not from the tailpipe but from materials such as soot and other wind-blown dust formed from road abrasion or tyre and break wear.

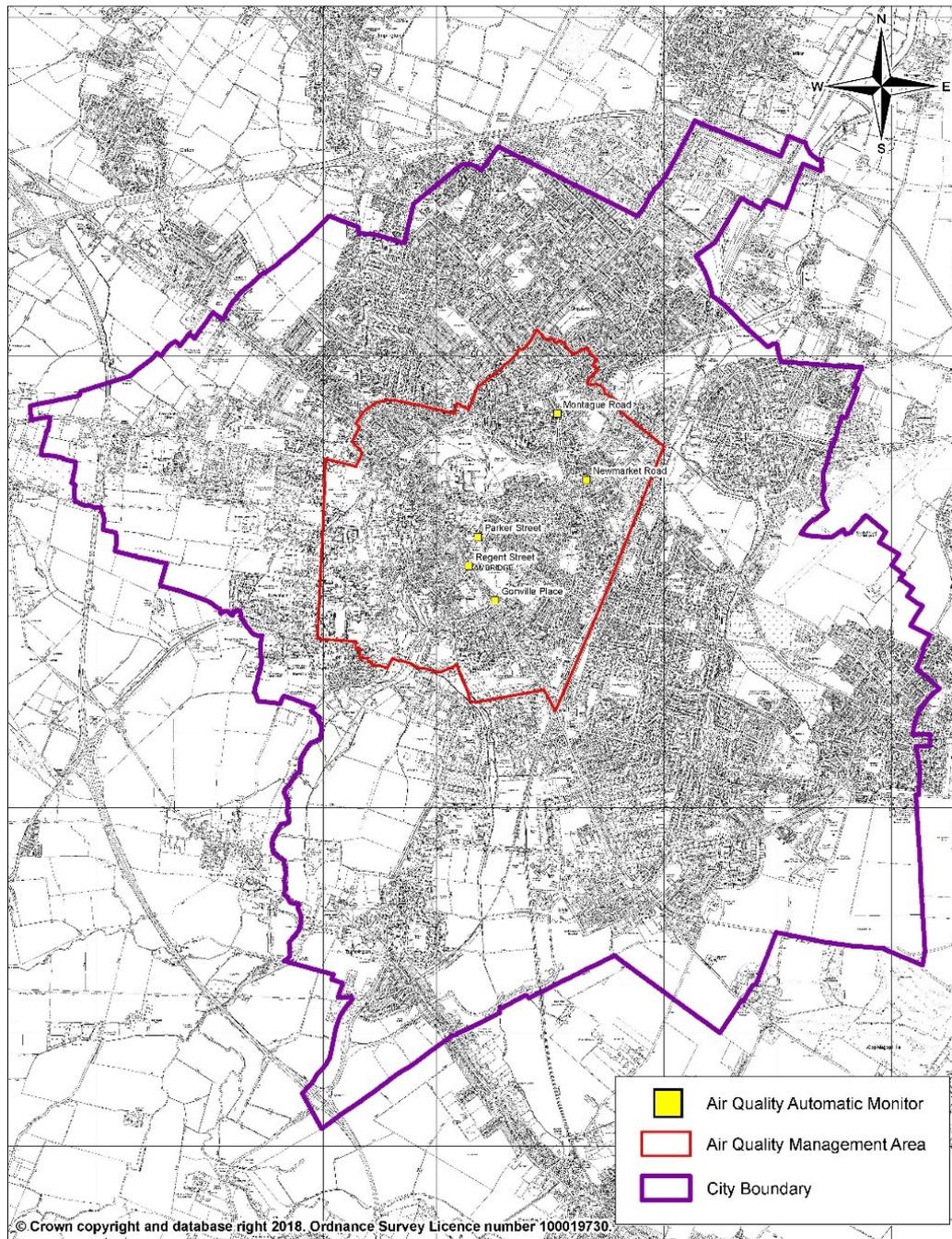
Cambridge City Council has an Air Quality Management Area (AQMA) in the City Centre as shown in Figure 25 whilst South Cambridgeshire District Council declared an AQMA along the A14 in 2008 (Figure 26).

The continuing increase in the level of traffic and congestion are the main challenge to air quality in the south of Cambridgeshire. In 2010, South Cambridgeshire, Cambridge City Council and Huntingdonshire District Council produced a joint Action

Plan because of the nature of the road network and spatial distribution of housing, recreation and employment in the region.

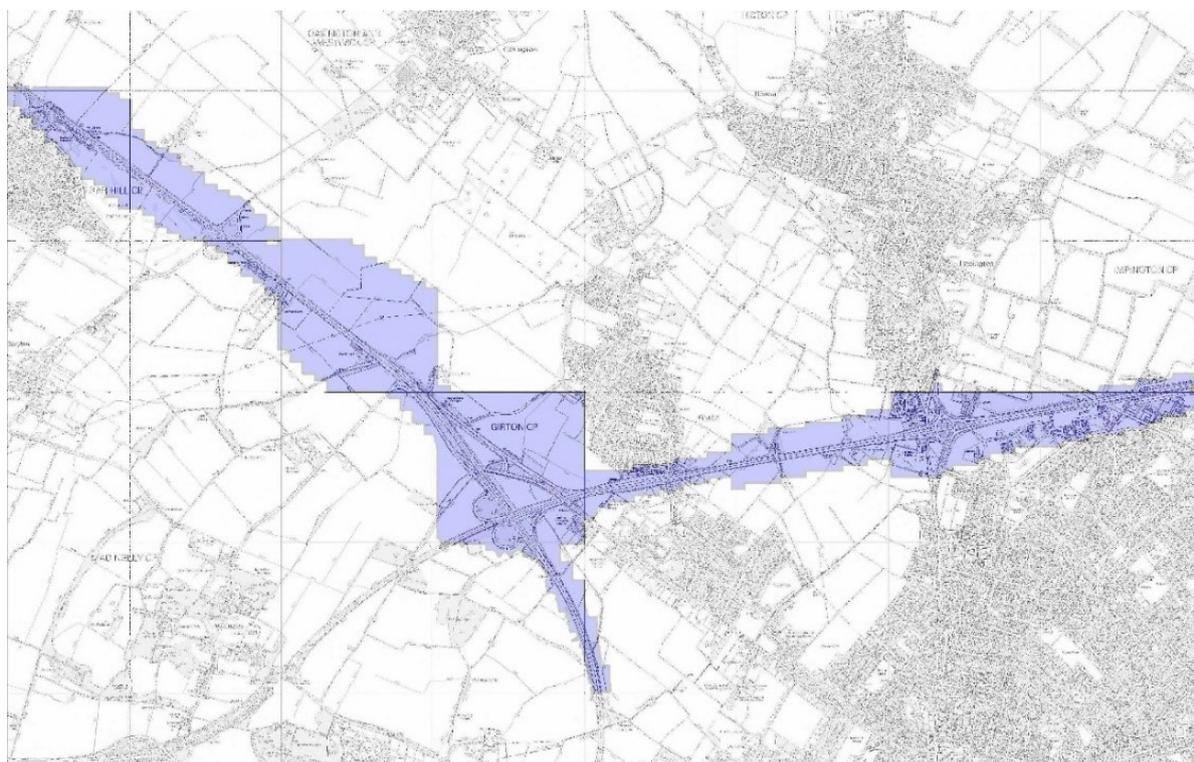
The Department for Environment, Food and Rural Affairs (Defra) concluded in 2018 that there was no evidence the A14 AQMA status should continue to be retained since no exceedances of objective levels had occurred within the AQMA since 2013. Defra therefore recommended that the AQMA should be considered for revocation. However, the Council will continue to monitor air quality in this area until the impacts of the A14 improvements are clear.

Figure 24: Cambridge City Air Quality Management Area



Source: <https://www.cambridge.gov.uk/air-pollution-levels-and-monitoring-them>

Figure 25: A14 Air Quality Management Area



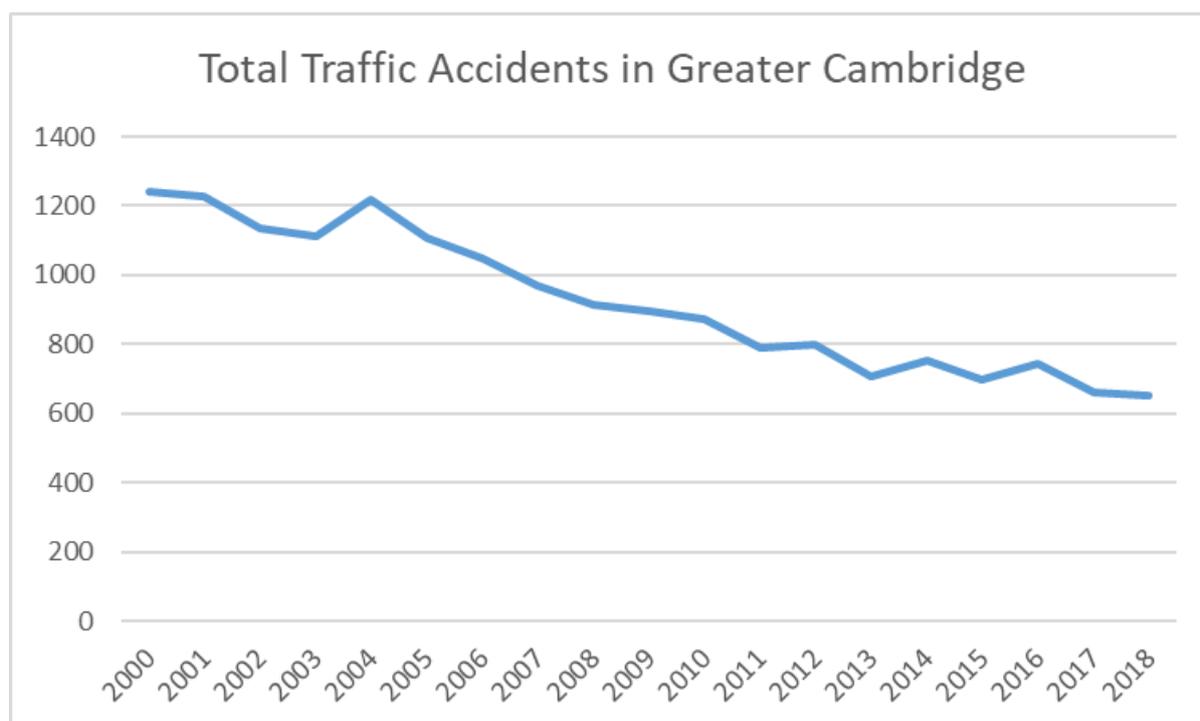
Source: <https://www.scams.gov.uk/environment/pollution/air-pollution/local-air-quality-management/>

3.7. Road Safety

The information in this section sets out details of the personal injury accident data recorded within Greater Cambridge for the period between 2000 and 2019. This data includes all accidents that involve personal injuries and covers all types of vehicles and pedestrians.

Figure 26 shows that there has been a decrease in the number of personal injury accidents recorded each year in Greater Cambridge since 2000.

Figure 26: Greater Cambridge Personal Injury Accidents



Source: Cambridgeshire County Council - Business Intelligence team

As Figure 26 indicates, the number of recorded accidents has decreased over the last 18 years, but it is also important to consider the severity of the accidents that have occurred. Table 21 below shows, the number of accidents in each of the categories, from this it is possible to see that the majority of accidents were recorded as slight.

Table 21: Severity of Personal Injury Accidents in Greater Cambridge

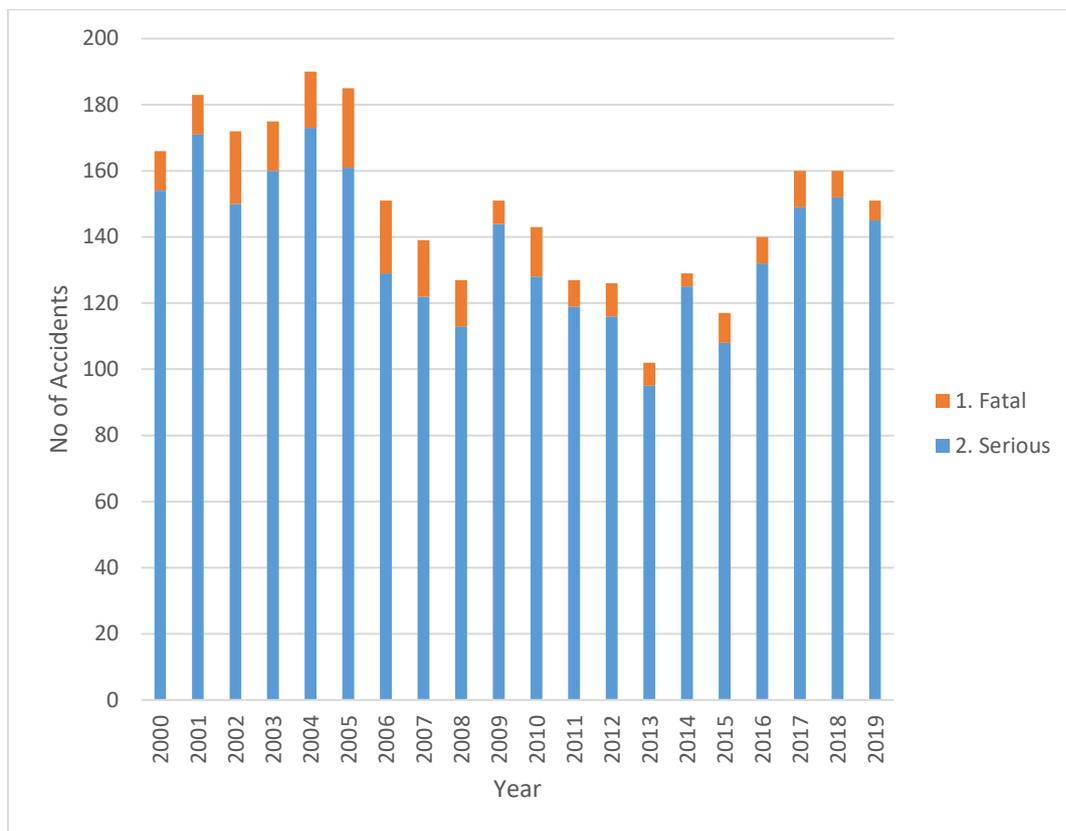
Severity / Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fatal	12	12	22	15	17	24	22	17	14	7
Serious	154	171	150	160	173	161	129	122	113	144
Slight	1,077	1,045	962	936	1,028	924	896	832	786	747
Total	1,243	1,228	1,134	1,111	1,218	1,109	1,047	971	913	898

Severity / Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fatal	15	8	10	7	4	9	8	11	8	6
Serious	128	119	116	95	125	108	132	149	152	145
Slight	728	661	672	603	622	581	604	517	490	490
Total	871	788	798	705	751	698	744	677	650	641

Source: Cambridgeshire County Council - Business Intelligence team

However, the key metric is the number of killed and seriously injured (KSI) accidents and therefore it is necessary to investigate these categories further. Figure 27 shows the changes in the number of KSI accidents recorded in Greater Cambridge per year.

Figure 27: Severity of Traffic Accidents in Greater Cambridge

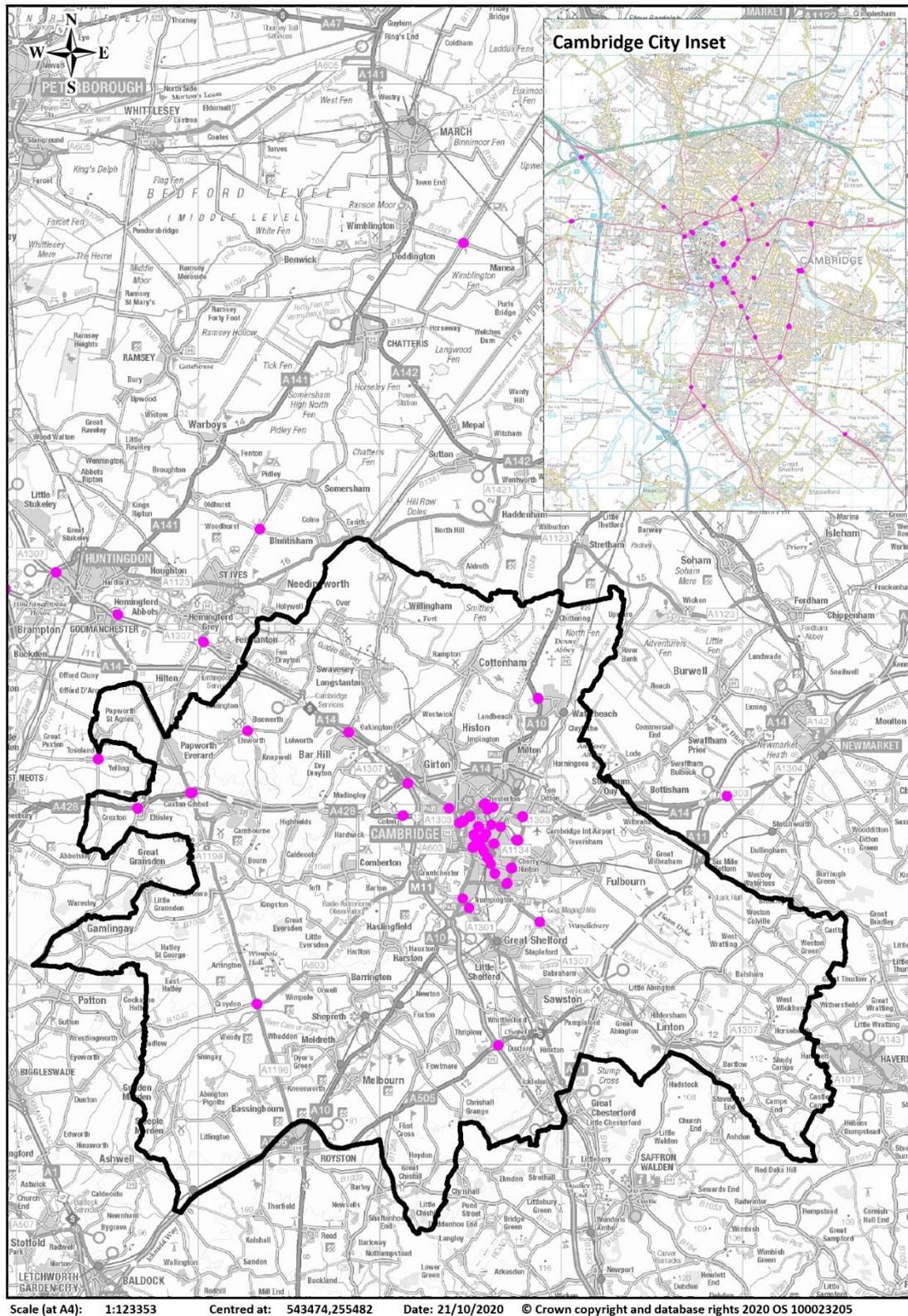


Source: Cambridgeshire County Council - Business Intelligence team

From the information in Figure 27 it is possible to see that over the period 2000 – 2005 the number of fatal accidents rose, since when the number of fatalities has remained fairly constant. The number of serious accidents fell between 2000 and 2008, but by 2013 the number of serious accidents has been rising, so that in 2019 the number of serious accidents was similar to that in 2000. The number of slight accidents between 2000 and 2019 has reduced significantly, and as a result the number of accidents KSI has increased as a percentage of total accidents.

The analysis of accidents tends to look for clusters, i.e. areas where there are groups of accidents, as this indicates there may be a consistent contributing factor that could be addressed. Figure 28 shows the identified accident cluster locations in Greater Cambridge in the period studied.

Figure 28: Accident cluster sites in Greater Cambridge 2017-2019



Source: Cambridgeshire County Council

3.8. Cycle Parking

Table 22 shows the capacity of the large formal cycle parks located around the city. Cambridge of course known for cycling has various small cycle stands located around the city. The formal cycle parks at the stations and large car parks have a capacity of over 4,250 spaces.

Table 22: Large Cycle Parks

Large Cycle Parks	Number of Spaces
Cambridge Station	2,850 spaces
Cambridge North Station	1,000 spaces
Grand Arcade	200+ spaces
Park Street	200+ spaces

Source: Greater Anglia / Cambridge City Council

In addition to the cycle parking spaces located around the city, the park and ride sites also have capacity for 381 cycle stands and 380 cycle lockers across all of the park and ride sites.

3.9. Car Parking

Table 23 shows the capacity of the pay and display car parks which are currently in operation in Cambridge City. In total there are 5715 spaces available. This does not include the five park and ride sites located around the edges of the city which have a capacity of 6,025 spaces.

Table 23: Pay and Display Car parks in Cambridge

Pay and Display Car Parks	Number of Spaces
Castle Hill	115 spaces
Lammas Land	76 spaces
Gwydir Street	50 spaces
Riverside	8 Spaces
Adam and Eve Street	50 spaces
Park Street	287 spaces
Grand Arcade	953 spaces
Grafton West	280 spaces
Grafton East	874 spaces
Queen Anne Terrace	570 spaces
Cambridge Station	352 spaces
Cambridge North Station	450 spaces
Addenbrooke's Hospital	1,050 spaces
Cambridge Leisure Park	600 spaces

Source: Cambridge City Council / NCP

Figure 29: Cambridge Car Parks



Scale (at A4): 1:35342 Centred at: 548599,256954 Date:19/11/2019 © Crown copyright and database rights 2019 OS 100023205

Source: Cambridgeshire County Council

3.10. Connectivity Summary

- The Greater Cambridge bus network provides 49 services.
- Bus use in Greater Cambridge accounts for just 13% of Journeys to work.
- Bus frequencies outside Cambridge drop with some services only having one or two per day meaning they are not viable for regular journeys. Also poor service frequency in the evenings and on weekends are common.
- Park and ride services provide a viable choice for trips into the Centre of Cambridge but still encourage car trips through South Cambridgeshire.
- The Guided busway has seen a significant growth in patronage since opening in 2011 and provides a viable option for those along the routes looking to access Cambridge
- Greater Cambridge has nine railway stations providing good north south connectivity to and from Cambridge.
- From Cambridge, direct services are available to London, Ipswich, Norwich, Kings Lynn, Peterborough, Stansted Airport, Birmingham, Gatwick Airport and Brighton. The other stations in Greater Cambridge all have direct services to London.
- The opening of Cambridge North station has opened up the Science Park and wider North East Cambridge area to access by rail
- The majority of the cycle facilities within Greater Cambridge are within Cambridge City but the region as a whole has 154.6 miles of cycle infrastructure.
- There has been a significant growth in cycle trips across both Cambridge screen lines over the last 15 years
- Recent years has seen an increase in HGV traffic crossing the River Cam Cordon whilst the largest increase in trips crossing the Cambridge radial cordon has been in cars and taxis
- 2018-2019 saw a 12% increase in LGV trips across the Cambridge radial cordon.
- The Greater Cambridge highway network has a large strategic road network with the M11, A14, A11 and A428 being major national routes.
- Congestion is an issue in Greater Cambridge. The average speed on all major roads entering Cambridge during the peak hour is less than 60% of the 'free flow' speed.
- There are 13 pay and display off road public car parks within Cambridge which provide 5,715 spaces, in addition to this the Cambridge Park and Ride sites offer 6,025 spaces.
- Trip attractors in the Greater Cambridge area for employment are located away from Cambridge city Centre meaning that public transport access is limited.
- Transport is one of the main contributors to poor air quality in the Greater Cambridge area.
- The number of personal injury accidents in Greater Cambridge has reduced over the period 2000-2018 but the proportion of those that result in serious or fatal injuries has increased.

4. Future Transport Provision

4.1. Introduction

The Greater Cambridge area is covered not just by the local authorities and Cambridgeshire County Council but also by the Cambridgeshire and Peterborough Combined Authority (CPCA) and the Greater Cambridge Partnership (GCP), both of whom have a programme of transport schemes that aim to bridge the gap in the existing provision. In addition, there are also transport schemes being developed which pass through Greater Cambridge, being led by organisations external to the area.

4.2. Cambridgeshire and Peterborough Combined Authority

The CPCA is the Local Transport Authority with responsibility for the Local Transport Plan. The CPCA has a number of schemes under development;

- Cambridge Autonomous Metro (CAM) - The CAM is proposed to provide a high-quality, fast and reliable mass transit link throughout the Greater Cambridge region and Cambridgeshire. The CAM will link up with existing stations in Cambridge, the proposed Cambridge South Station and major city fringe employment areas. The scheme would include 12km of 'twin bore' tunnelling under Cambridge city and two underground stations, one at the city centre, and one at Cambridge Station. The CAM would serve inner transport corridors in the Greater Cambridge area from the city to Cambourne, Granta Park, Waterbeach and Newmarket Road and Trumpington Park & Ride sites. It would also serve the regional area, with corridors extending to St Neots, Alconbury, Mildenhall and Haverhill. The CAM would extend in total to 142km.
- Cambridge South Station – This is proposed to serve the Cambridge Biomedical Campus (CBC) located at Addenbrooke's Hospital. The campus is a large trip generator with 17,250 staff and 14,500 patients and visitors each day. More growth is planned at the Biomedical Campus as shown in Figure 39.
- A10 Ely to Cambridge Junctions and Dualling - The A10 provides a strategic road link between Cambridge, Ely and the rest of the north eastern sub region of Cambridgeshire. The A10 Ely to Cambridge Junctions and Dualling project builds on the Greater Cambridge Partnership's A10 Ely to Cambridge Study and looks to take forward the strategic highway element of those proposals.

Further information about the above schemes is available at the CPCA's website: <https://cambridgeshirepeterborough-ca.gov.uk/>.

4.3. Greater Cambridge Partnership Schemes

The Greater Cambridge Partnership (GCP) is the local delivery body for a City Deal with central government, which is worth up to £1 billion over 15 years. The aim of the City Deal is to provide infrastructure improvements, supporting and accelerating the creation of the 44,000 new jobs and 33,500 new homes identified in the 2018

Cambridge and South Cambridgeshire Local Plans. The GCP has a list of committed schemes throughout Greater Cambridge for sustainable transport measures to improve transport accessibility and connectivity within the area.

- A428 Cambourne to Cambridge - This corridor is one of the key radial routes into Cambridge. It suffers from congestion during the network peak periods, particularly at the Cambridge end, on the A1303 Madingley Road at M11 Junction 13. Modelling for the Greater Cambridge Partnership (GCP) has demonstrated that the A1303 Madingley Road has seen significant increases in traffic over the last decade. The key current conditions on the corridor include; long delays on the eastbound A1303 up to M11 junction 13, and; significant journey time variability along the corridor, particularly eastbound in the morning peak and westbound in the evening peak. This Cambourne to Cambridge Better Public Transport scheme will provide a new reliable, public transport route to ease congestion, create sustainable travel choices, connect communities and support growth, and form a first phase of the CAM network.
- A1307 (Cambridge South East Transport Scheme - CSETS) The CSETS aims to provide better public transport, walking and cycling options for those who travel in the A1307 and A1301 area, improving journey times and linking communities and employment sites in the area south east of Cambridge. This scheme will form a first phase of the CAM network.
- M11 Junction 11 Park & Ride is a key entry point into Cambridge. With significant growth in housing and employment in the area, upgrading the existing transport infrastructure in this area is vital to reduce congestion and improve access into the city.
- Cambridge Eastern Access corridor provides the main access into the city from the east and consists of the A1134/A1303 Newmarket Road between Quy Interchange and Elizabeth Way and connects with the main Strategic Road Network at A14 Junction 35. Newmarket Road Park & Ride is located approximately 500m west of the junction with Airport Way and is accessed off the A1303. This scheme will form a first phase of the CAM network.
- Histon Road is a key route into Cambridge from the A14 and surrounding villages. However, due to the economic and population growth in Cambridge, Histon Road now suffers from peak-time traffic congestion and delays, impacting on the ability of businesses to operate effectively, and on the lives of those who live, work, and travel along Histon Road. As a result, the Greater Cambridge (GCP) Partnership is looking to redesign Histon Road to encourage the use of public transport, reduce congestion and air pollution, whilst encouraging the continued economic growth of the Greater Cambridge area.
- Milton Road is busy residential area in Cambridge which also acts as a key route between the city centre, the A14 and A10, as well as the nearby villages of Milton and Waterbeach. As a key arterial route, Milton Road has been identified as vital to the local economy. However, current levels of peak-time traffic congestion threaten the continued economic growth of the local area. With the population of Cambridge and South Cambridgeshire expected to grow by around 28% over the

next 15 years, improvements to Milton Road will need to be made to now, to accommodate the increasing number of journeys in the future.

- Madingley Road is a scheme to improve cycling provision along Madingley Road, the Greater Cambridge Partnership is looking to improve sustainable travel along this key route into the city.
- Waterbeach to Cambridge Public Transport Scheme: the Waterbeach to Cambridge project is considering options for improvements to infrastructure to ensure that planned employment and housing growth, such as at Waterbeach New Town, can be accommodated without increasing levels of traffic in Cambridge. This scheme will form a first phase of the CAM network.
- Chisholm Trail is a new walking and cycling route, creating a mostly off-road and traffic-free route between Cambridge Station and Cambridge North Station. It will link to Addenbrooke's Hospital and the Biomedical Campus in the south and to the business and science parks in the north. In all the full trail provides a 26 kilometre route from Trumpington and Addenbrookes to St Ives (via the Cambridge Guided Busway cycle track).
- Cross City Cycling is made up of five different projects across Cambridge. Each scheme aims to improve walking and cycling links to schools and employment centres. They will help to reduce congestion and improve air quality, health and road safety.
- Foxton Travel Hub - trains from Foxton reach Cambridge in 10 minutes. Trains could also serve a future Cambridge South station, which would provide easy access to the Cambridge Biomedical Campus and Addenbrookes hospital.
- Greater Cambridge Greenways identifies a number of missing links that could be provided on private land, generally on field edges. There are 12 Greenways planned in total:
- Rural Travel Hubs are small flexible transport interchanges at key locations in South Cambridgeshire, allowing more people to access sustainable transport networks.

Further information about the above schemes is available at the Greater Cambridge Partnership's website: <https://www.greatercambridge.org.uk/>

5.3 National Infrastructure Schemes

Two transport schemes being developed which will pass through Greater Cambridge, led by organisations external to the area, include:

- The A428 Black Cat to Caxton Gibbet Road Improvement Scheme will upgrade the A428 between the A1 Black Cat roundabout and A1198 Caxton Gibbet roundabout with a new 10-mile dual carriageway and a number of junction improvements. Highways England is responsible for the scheme, which is now heading towards the development consent process. Further information about this scheme can be found on Highways England's website: <https://highwaysengland.co.uk/our-work/a428-black-cat-to-caxton-gibbet/>
- The East West Rail Bedford to Cambridge Section will link the existing stations in Bedford and Cambridge with communities in Cambourne and the area south of St.

Neots. It will provide new links to Thameslink and Midland Mainline at Bedford the East Coast Mainline at Sandy/St Neots and the West Anglia Mainline in Cambridge. This will provide convenient additional inter-regional connectivity for people, making it easier to get to towns like Kettering, Leeds, Norwich and Nottingham. Further information about this scheme can be found on East West Rail Company's website: <https://eastwestrail.co.uk>

5. Conclusion

As seen in the evidence above, whilst there is good coverage for pedestrians, cyclists and Public Transport in Cambridge, the level of coverage in South Cambridgeshire is less comprehensive. Whilst there are numerous public transport services that serve the major areas of population within South Cambridgeshire, the routing or frequencies means that they are not attractive for regular journeys such as commuting.

Therefore there is a need to address the gaps in the existing transport networks. To this end the Cambridgeshire and Peterborough Combined Authority and the Greater Cambridge Partnership have developed a range of transport interventions designed to cater for the future growth aspirations in the Greater Cambridge area.

South Cambridgeshire District Council and Cambridge City Council
**Greater Cambridge Local Plan strategic spatial
options assessment: Green Infrastructure
Opportunity Mapping**

Prepared by LUC
November 2020

South Cambridgeshire District Council and Cambridge City Council
 Greater Cambridge Local Plan strategic spatial options assessment:
 Green Infrastructure Opportunity Mapping

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Chapter 1 – Executive summary

1.1 South Cambridgeshire District Council and Cambridge City Council (the Councils) have commissioned LUC to undertake a Green Infrastructure (GI) Opportunity Mapping project to ensure the forthcoming joint Local Plan is based on sound evidence and includes deliverable interventions to enhance the GI network.

1.2 The overall aims of the study are twofold: to provide a robust evidence base on the quantity and quality of existing GI assets and networks within Greater Cambridge, and through analysis and consultation, identify specific and deliverable opportunities to enhance and expand the network, supported by appropriate policies.

1.3 The baseline assessment has to date identified a series of broad enhancement zones under seven GI themes which are currently being mapped. These zones are being drawn together to identify areas within which there is potential to deliver new, or enhance existing GI assets to realise multiple benefits across these themes.

1.4 The Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing, and have asked consultants producing Local Plan evidence studies to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

1.5 The emerging Greater Cambridge Green Infrastructure Opportunity Mapping baseline assessment has informed this assessment; drawing upon the information gathered to date from spatial datasets, stakeholders, other emerging evidence bases, existing studies and strategies.

1.6 For this strategic spatial options review, we initially considered the various broad areas of supply making up the strategic spatial options. For each broad area of supply, the baseline evidence from the GI Opportunity Mapping study was examined, and a set of opportunities and risks were identified. Drawing on the assessment of the broad areas of supply, consideration was given to the potential implications for GI under each strategic spatial option.

1.7 Each option has been shown to offer different opportunities and potential risks in terms of GI; no one option clearly performing better than the others in terms of GI. Additional growth will put pressure on the existing GI network; the higher the level of growth, the greater the increased pressure. Development can also provide opportunities for GI such as new areas of GI for recreation or habitat provision, or enhancement of existing areas which already perform a specific function (such as important habitats); to improve the efficacy of this function.

1.8 The minimum growth option potentially provides more scope to locate development to minimise impacts on existing assets, or to focus development to where the greatest opportunities can be achieved. The higher growth options reduce flexibility in relation to being able to target the location of development in this way and will result in greater landtake. Where space is constrained, GI provision will need to be more innovative.

1.9 Whilst not easily simplified due to the complexities of GI, a high level summary of the implications for GI under each strategic spatial option is provided below:

- Strategic Spatial Option 1: Densification of existing urban areas - presents both risks and opportunities for GI. On the one hand, there is greater potential for piece-meal delivery of GI associated with multiple smaller developments and the added challenge of significant 'space' constraints. On the other hand, there are opportunities to deliver new GI where there may be existing deficiencies or challenges.

- Strategic Spatial Option 2: Edge of Cambridge - outside the Green Belt - provides opportunities to integrate a wider range of GI interventions associated with larger development. GI could also provide opportunities to address higher levels of deprivation in nearby areas. However, growth here presents risks to the existing GI network; particularly relating to increased recreational pressure on sites, and potential impacts on wetland assets to the east and north east.
- Strategic Spatial Option 3: Edge of Cambridge - Green Belt - provides an opportunity for urban extensions to cater for GI deficits in neighbouring urban areas. There are also opportunities associated with the requirement of the NPPF for the release of Green Belt sites to positively enhance the remaining Green Belt. There is some sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance and a potential risk of impacts on international designations.
- Strategic Spatial Option 4: Dispersal - new settlements – provides an opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning could accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources. Additional sustainable transport routes provide an opportunity to integrate GI connectivity and mitigate potential severance.
- Strategic Spatial Option 5: Dispersal – villages – increases the likelihood of piece-meal GI interventions associated with multiple smaller developments, as opposed to delivering strategic GI opportunities. This may lead to greater challenges in delivering integrated ecological networks unless an overarching vision is established and supported in planning policy and land-use decision making.
- Strategic Spatial Option 6: Public transport corridors – whilst potentially placing additional recreational pressure on key GI assets, larger scale developments on public transport corridors may provide opportunities to integrate a wider range of GI opportunities; including opportunities for landscape-led masterplanning and planning in active travel networks to increase GI connectivity. There are also opportunities to support network enhancement and expansion zones identified by Natural England Habitat Network mapping. Higher delivery scenarios introduce greater scale of delivery to villages on public transport corridors; potentially resulting in piece-meal GI interventions in these locations unless strategically planned.
- Strategic Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster) – provides opportunities make a strategic contribution to strengthening GI assets. Wider development across villages south of Cambridge will need to consider cumulative impact/s on the grassland and wetland habitats along and between the river, stream and dyke corridors.
- Strategic Spatial Option 8: Expanding a growth area around transport nodes - introduces potential impact/s on Eversden & Wimpole SAC and the numerous SSSI. There is a risk of development extending or exacerbating existing north-south severance; but also an opportunity to introduce GI connectivity across the A428 corridor. There is potential to further develop active transport connections linking GI assets.

1.10 The Councils will use the findings of this review alongside similar reviews for other emerging and existing evidence studies to test the strategic spatial options through the Sustainability Appraisal.

1.11 The realisation of the GI opportunities identified in this assessment will be reliant on a planning framework that has sufficient mechanisms in place to ensure that high quality GI is

delivered in step with development. This will need to be supported by guidance on what high quality GI looks like in Greater Cambridge and robust management plans that ensure that GI is managed and maintained into the future. This will need to be factored in to the viability of development.

Chapter 2 – Introduction

Introduction to evidence base

2.1 South Cambridgeshire District Council and Cambridge City Council (the Councils) have commissioned LUC to undertake a Green Infrastructure Opportunity Mapping project to ensure the forthcoming joint Local Plan is based on sound evidence and includes deliverable interventions to enhance the GI network.

2.2 The overall aims of the study are twofold: to provide a robust evidence base on the quantity and quality of existing GI assets and networks within Greater Cambridge, and through analysis and consultation, identify specific and deliverable opportunities to enhance and expand the network, supported by appropriate policies. GI assets serve to provide a range of ecosystem services for environmental, social and economic benefit, and this study will provide a clear understanding of strategic level opportunities to maximise these benefits, ensuring a resilient landscape; one that benefits both people and nature and is robust to external change such as climate change and flood risk.

2.3 The study is being developed collaboratively with relevant officers of the Councils, neighbouring authorities and local stakeholders, drawing on existing initiatives and the wider evidence base for the Local Plan (including Infrastructure, Viability, Landscape, Sustainability Appraisal, Green Belt and other relevant studies).

Initial findings

2.4 Greater Cambridge has a wealth of GI assets which serve to provide ecosystem services for environmental, social and economic benefit. To provide a comprehensive baseline and evaluation of the GI network in Greater Cambridge, the GI Opportunity Mapping Study uses a themed-based approach. The seven themes identified are:

- Landscape, cultural heritage and sense of place;
- Biodiversity and geodiversity;
- The water environment;
- Access and connectivity;
- Recreation and play;
- Carbon sequestration; and
- Agriculture and community food growing.

2.5 In addition to these themes, the cross-cutting themes of climate change, health and wellbeing and social inclusion are considered throughout.

2.6 The baseline assessment has to date identified a series of broad enhancement zones under each of the GI themes which are currently being mapped and drawn together to identify areas within which there is potential to deliver new, or enhance existing, GI assets to realise multiple benefits across these themes. Although the enhancement zone maps were not ready in time to directly inform this assessment, this review has considered all of the layers of information and stakeholder information available at this stage.

Assessment of strategic (non-site specific) spatial options

2.7 Cambridge City Council and South Cambridgeshire District Council completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.

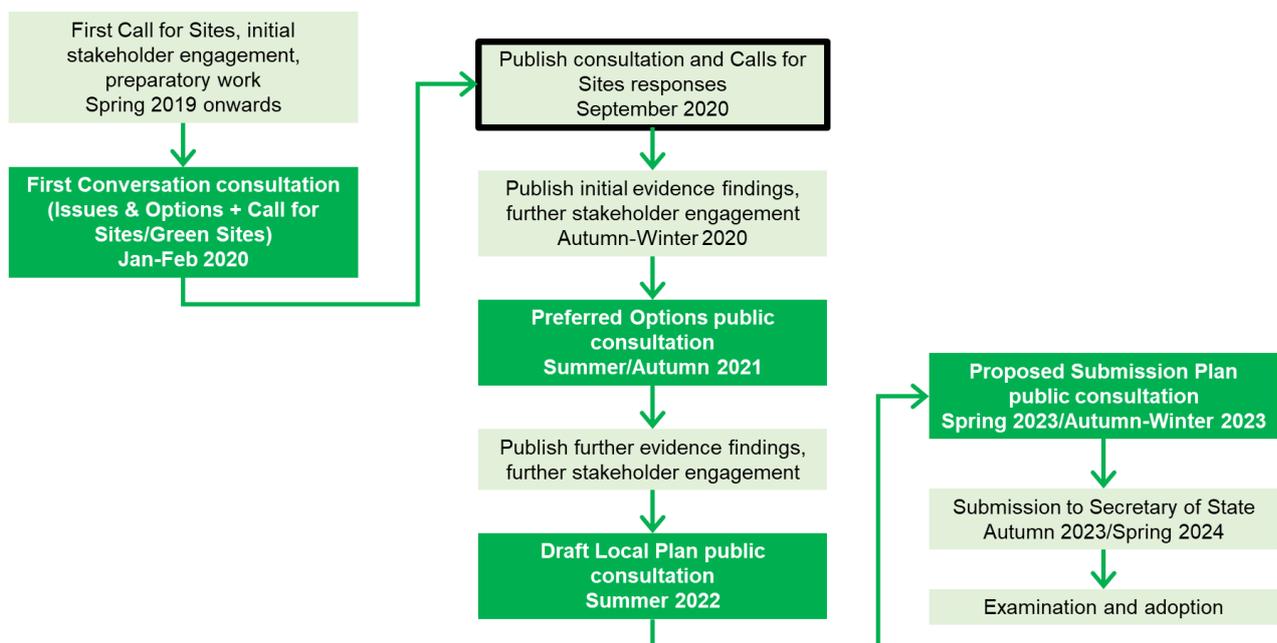
2.8 The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

2.9 The initial evidence findings will be reported to the Joint Local Planning Advisory Group in Autumn 2020, and will help inform further engagement with stakeholders.

2.10 Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below in Figure 1.

Figure 1: Process of Local Plan Preparation

Process of Local Plan preparation



The strategic options

2.11 The three growth level options tested through this report are:

- Minimum – Standard Method homes-led
- Medium – central scenario employment-led
- Maximum – higher employment-led

2.12 The spatial scenarios tested through this report are:

- 1 Densification of existing urban areas
- 2 Edge of Cambridge – outside the Green Belt
- 3 Edge of Cambridge – Green Belt
- 4 Dispersal – new settlements
- 5 Dispersal – villages
- 6 Public transport corridors
- 7 Supporting a high-tech corridor by integrating homes and jobs
- 8 Expanding a growth area around transport nodes

Methodology

2.13 The emerging Greater Cambridge Green Infrastructure Opportunity Mapping baseline report has informed this assessment; drawing upon the information gathered to date from spatial datasets, stakeholders, other emerging evidence bases, existing studies and strategies.

2.14 For this strategic spatial options review, we initially considered the various broad areas of supply making up the strategic spatial options. For each broad area of supply, the baseline evidence from the GI Opportunity Mapping study was examined, and a set of opportunities and risks were identified.

2.15 The broad areas of supply include:

- Cambridge Urban Area.
- North East Cambridge (NEC).
- Cambridge Airport (safeguarded land).
- Green Belt Fringe.
- New settlements on public transport corridors.
- New settlements on the road network.
- Villages.
- 'Science cluster'.
- Cambourne and surrounds.

2.16 Each GI theme was considered in turn, with key pertinent points recorded against each broad area of supply. Chapter 3 of this report presents the findings of this assessment.

2.17 A number of GIS datasets were used in the assessment including those identifying designated nature conservation sites, cultural heritage assets and data on habitats and habitat networks. National maps of the Buglife B-Lines were reviewed to assess the opportunities for development to support these 'insect pathways' for pollinators. Other datasets reviewed included those mapping open space and Country Parks, rivers and waterbodies, deprivation indices, Environment Agency Working with Natural Processes and peat soils.

2.18 To support an understanding of the implications for carbon sequestration and storage, Centre for Ecology and Hydrology (CEH) national maps of mean estimates of carbon density in topsoil (0-15cm depth) were reviewed. Certain habitat types are associated with greater densities of soil carbon; these include acid grassland, coniferous woodland, bogs and

heathland. Soil carbon is found at lower densities in arable habitats and improved grassland¹. Similarly, CEH has mapped mean estimates of above-ground carbon density in vegetation. Changes in size and productivity of the above-ground carbon pool may act as a sink or source for carbon dioxide. As such, the carbon stored in vegetation plays a vital role in climate regulation². All these datasets were referred to during this options review.

2.19 Using the assessment of the broad areas of supply, each strategic spatial option was examined in turn, taking account of the combinations of broad areas of supply included, and the number of dwellings assigned to each under the minimum, medium and maximum growth scenarios. The findings of this assessment are presented in Chapter 3.

Limitations

2.20 It must be noted that this is a high-level assessment, and in some cases it is not possible to be definitive about the likely impacts without more spatial specificity.

2.21 The realisation of the GI opportunities identified in this assessment will be reliant on a planning framework that has sufficient mechanisms in place to ensure that high quality GI is delivered in step with development. This will need to be supported by guidance on what high quality GI looks like in Greater Cambridge and robust management plans that ensure that GI is managed and maintained into the future. This will need to be factored in to the viability of development.

¹ Henrys, P.A.; Keith, A.M.; Robinson, D.A.; Emmett, B.A. (2012). Model estimates of topsoil carbon [Countryside Survey]. NERC Environmental Information Data Centre.

² Henrys, P.A.; Keith, A.; Wood, C.M. (2016). Model estimates of aboveground carbon for Great Britain. NERC Environmental Information Data Centre.

Chapter 3 – Analysis

3.1 This Chapter presents the findings of the review of the likely impacts on the GI network of the strategic spatial options set out in the document 'Greater Cambridge Local Plan: strategic spatial options for testing – methodology'.

3.2 This Chapter is structured as follows:

- Commentary on overall levels of growth: providing information on the growth scenarios and the key implications of the overall quantum of growth for GI.
- Commentary on locations for development: providing a summary of the key risks and opportunities associated with each broad area of supply under the different growth scenarios.
- Commentary on the different spatial options: providing a summary of the potential implications for GI under each strategic spatial option.

Commentary on overall levels of growth

3.3 As set out in paragraph 2.11, three growth level options for housing have been assessed; minimum, medium and maximum. The minimum growth option has been defined using the 'Standard Method' for calculating housing needs, as set out in National Planning Practice Guidance. The medium and maximum options both go beyond the number of homes prescribed by the Standard Method, as a result of evidence of the higher housing growth potential in Greater Cambridge driven by employment forecasting set out in the Greater Cambridge Employment Land and Economic Development Evidence Study.

3.4 Different delivery rates are required to achieve the housing figures set out under each growth option, with delivery rates which reflect recent trends needed to deliver the minimum and medium growth options. Previously unachieved high delivery rates will be required to deliver the maximum growth option. The maximum growth option requires four times as much housing as the minimum option.

3.5 Additional growth will put pressure on the existing GI network; the higher the level of growth, the greater the increased pressure. Development can also provide opportunities for GI such as new areas of GI for recreation or habitat provision, or enhancement of existing areas which already perform a specific function (such as important habitats); to improve the efficacy of this function.

3.6 The minimum growth option potentially provides more scope to locate development to minimise impacts on existing assets, or to focus development to where the greatest opportunities can be achieved. The higher growth options reduce flexibility in relation to being able to target the location of development in this way and will result in greater landtake. Where space is constrained, GI provision will need to be more innovative.

3.7 It may also be necessary to 'decouple' the location of some GI mitigation projects from the location of development – thereby focussing funding in areas where it can have greatest benefit. For example, an arguably greater effect could be achieved in relation to nature conservation if funding from development was used to enhance and extend existing designated areas in Greater Cambridge; even if this is remote from the development which provided the funding. This would require a specific developer contributions regime to be implemented such as the community infrastructure levy, or pooling of s106 funds. There may be greater potential for 'decoupling' under the higher growth option. If such 'decoupling' were to take place, GI will still

need to be provided as part of the form of development to reduce localised impacts and ensure that residents are able to access high quality GI.

Commentary on locations for development

3.8 This section sets out each broad supply area in turn. Each broad supply area is introduced by a table setting out the number of dwellings to 2041 under each spatial option for each growth scenario. A second table presents the all time number of dwellings under each spatial option and for each growth scenario.

3.9 The tables of dwelling numbers are followed by a series of key opportunities and risks associated with that spatial option, concluding with information on the implications of higher delivery scenarios.

Cambridge Urban Area

Table 1: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	2,000	-	-	-	-	-	-	-
Medium	5,600	-	300	-	-	-	-	-
Maximum	6,800	-	-	-	-	-	-	-

Table 2: Dwellings 'all time'

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	2,000	-	-	-	-	-	-	-
Medium	5,600	-	300	-	-	-	-	-
Maximum	6,800	-	-	-	-	-	-	-

Opportunities

- May provide opportunities to deliver GI enhancements of wider benefit to the existing urban population.
- Opportunities to integrate active travel routes into the urban fringe.
- Opportunities in the east/south east and west/south west of Cambridge to use GI to support delivery of nearby Natural England's Habitat Network opportunity zones.
- Development in the south eastern corner could incorporate appropriate planting to support delivery of the B-Line and respect the chalk grassland character in this location.

- River Cam corridor and tributaries identified as having wider catchment woodland potential for flood mitigation (EA Working with Natural Processes). Strategic sensitive design guidance based on hydrological and ecological assessment will be required.

Risks

- Greater likelihood of piece-meal GI interventions as opposed to delivering strategic GI opportunities.
- May place additional recreational pressure on accessible open space resources including Country Parks such as Milton Park and Coton.
- May require innovative interventions (due to space restrictions) to meet open space and GI needs such as pocket parks, green roofs, increased canopy cover.
- May place additional pressures on accessible designated nature conservation sites within, and surrounding, urban area.
- Risk of impact on international designations – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen, and associated watercourses).
- Key sensitivities relate to water resources already under pressure and wetland habitats.
- Risk of loss of soft and permeable landscape which may exacerbate surface water flooding and urban heat island effect.

Implications for GI under higher delivery scenarios

- Much larger quantity of open space/GI required within 'space restricted' urban area. Need for innovative solutions due to space restrictions.
- Potential for greater pressures on nature conservation sites, sensitive habitats, parks and open spaces and water resources.
- Increased risk of impact on international designations – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen, and associated watercourses).

North East Cambridge

Table 3: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	1,900	1,900	-	-	-	1,900	-	-
Medium	1,900	1,900	-	-	-	1,900	-	1,900
Maximum	8,000	8,000	-	-	-	8,000	4,900	4,900

Table 4: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	8,300	8,300	-	-	-	8,300	-	-
Medium	8,300	8,300	-	-	-	8,300	-	8,300
Maximum	8,300	8,300	-	-	-	8,300	8,300	8,300

Opportunities

- Opportunity to integrate a more diverse range of GI opportunities through innovative measures.
- Existing deprivation levels higher in areas around the NEC and therefore GI associated with new development may provide opportunities to address quality of life issues.
- Opportunities to plan in active travel networks and support modal shift to active travel.
- There are opportunities to connect to/ expand key GI assets such as the parkland and country park network, and cycle/footpaths (to alleviate/ avoid additional pressure on existing routes within spatially constrained watercourse corridors).
- Opportunity to support network enhancement and expansion zones identified by Natural England Habitat Network mapping nearby.

Risks

- May place additional recreational pressure on existing key GI assets such as Country Parks.
- Key sensitivities within GI network include the wetland (specifically fenland) assets to the east and north east. Potential impacts on international fenland and washes sites via hydrological connectivity or through habitat loss or damage (of designated or functionally linked land).

Implications for GI under higher delivery scenarios

- This risk of additional recreational pressure on key GI assets increases markedly under the all time scenario with over four times the number of dwellings in comparison with minimum and medium 2041 scenarios.
- Maximum and all time scenarios present increased risk of impact on international designations and its functionally linked habitat – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen and associated watercourses) and north east fen-peat complex (Stow-cum-Quy Fen, Cam Washes, Wicken Fen and local peatlands).

Cambridge Airport

Table 5: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	1,900	-	-	-	-	-	--
Medium	1,900	1,900	-	-	-	-	-	-
Maximum	2,900	3,800	-	-	-	-	3,800	3,800

Table 6: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	9,500	-	-	-	-	-	-
Medium	9,500	9,500	-	-	-	-	-	-
Maximum	9,500	9,500	-	-	-	-	9,500	9,500

Opportunities

- Greater opportunities to integrate full range of GI opportunities associated with larger scale development at Cambridge Airport.
- Opportunities to plan in active travel networks and support modal shift to active travel.
- Whilst Cambridge Airport does not support any designated or priority habitats, the western boundary abuts Barnwell East Local Nature Reserve and associated swathe of enhancement and expansion opportunities (Natural England Habitat Network mapping) overlapping the Green Belt.

Risks

- Potential impacts on international sites, principally relate to wetland habitats including the numerous local fens, linked watercourses and ditch systems.
- Potential impact/s on national designations – Gog Magog and Fleam Dyke.
- Cambridge Airport currently supports the highest density (in tonnes per hectare) and largest continuous area of high estimated soil carbon density within Greater Cambridge as well as high levels of carbon in vegetation. Development on land supporting high levels of carbon may cause disturbance or loss thereof. The requirement to offset such loss to a proposed development would need to be considered as part of the carbon assessment thereof.

Implications for GI under higher delivery scenarios

- Increased risk of potential impacts on international sites, principally relating to wetland habitats including the numerous local fens, linked watercourses and ditch systems. This is of particular concern in the all time scenario, which includes approximately five times the number of dwellings and associated recreational need than in minimum and medium 2041 scenarios.
- Potential impact/s on national designations increased under 'all time' scale of development.

Green Belt Fringe

Table 7: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	3,900	-	-	-	-	-
Medium	400	-	9,500	-	-	-	-	-
Maximum	-	-	17,700	-	-	-	-	-

Table 8: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	3,900	-	-	-	-	-
Medium	400	-	9,500	-	-	-	-	-
Maximum	-	-	17,700	-	-	-	-	-

Opportunities

- Opportunity associated with requirement of National Planning Policy Framework (NPPF) for release of Green Belt sites to positively enhance remaining Green Belt.
- There are opportunities to connect to/ expand key GI assets such as the parkland and country park network, and cycle/footpaths (to alleviate/ avoid additional pressure on existing routes within spatially constrained watercourse corridors).
- Green Belt Fringe supports significant habitat opportunity zones (as identified by Natural England Habitat Network mapping) in the south east and south west in particular, and to a smaller extent to the west around Coton.

- Opportunity for urban extensions on Green Belt Fringe to cater for GI deficits in neighbouring urban areas, where biodiversity assets therein are currently in suboptimal condition and/or not in beneficial management.
- Development in the south eastern corner could incorporate appropriate planting to support delivery of the B-Line and respect the local chalk grassland character.

Risks

- Particular sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance.
- Risk of impact on international designations – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen and associated watercourses) Detailed HRA in progress.
- Green Belt fringe areas of particular sensitivity include the Cam corridor through Trumpington, Fen Ditton and Grantchester which are vulnerable to hydrological change and recreational pressure.
- High levels of estimated carbon in vegetation occur at Trumpington and spanning the Cam corridor at Grantchester.
- East and south support highest densities of estimated soil carbon density. Development on land supporting high levels of carbon may cause disturbance or loss thereof. The requirement to offset such loss to a proposed development would need to be considered as part of the carbon assessment thereof.

Implications for GI under higher delivery scenarios

- Increased risk of impact on international designations – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen and associated watercourses) and north east fen complex and peatlands (Stow-cum-Quy Fen, Cam Washes, Wicken Fen and local peatlands). Detailed HRA in progress.
- Incurs greater potential for loss of land within Natural England Habitat Network mapping opportunity areas which may otherwise be available for habitat enhancement and creation to alleviate existing pressures and future opportunities.

Villages

Table 9: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	100	-	-	3,900	100	1,400	1,400
Medium	-	1,000	-	-	9,800	5,400	7,300	5,400
Maximum	-	-	-	-	17,700	4,600	3,900	3,900

Table 10: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	100	-	-	3,900	100	1,400	1,400
Medium	-	1,000	-	-	9,800	5,400	7,300	5,400
Maximum	-	-	-	-	17,700	4,600	3,900	3,900

Opportunities

- Greater concentration within fewer villages may increase potential for delivery of more strategic GI opportunities, particularly those related to active transport.

Risks

- Sensitivities of GI assets in the vicinity of each village will reflect the selected locations. The nature, extent and magnitude of potential impacts cannot be determined in the absence of information on where development will be specifically located.
- Where villages are located in close proximity to designated or non-designated sites, there is potential for impacts on these and the wider ecological network.
- Greater likelihood of piece-meal GI interventions as opposed to delivering strategic GI opportunities. This may translate to greater challenge in delivering integrated ecological networks unless an overarching vision is acknowledged and supported in planning policy and land-use decision making.
- Depending on the detailed distribution of development, potential impacts on international sites may occur via hydrological connectivity or quality, recreational impact, air quality impact, or through habitat loss or damage (of designated or functionally linked land).

Implications for GI under higher delivery scenarios

- Potential spread across greater number of villages incurs wider reach of impact risk across designated sites and notable habitats; and the greater scale of development incurs a potential increased magnitude of impact.
- Greater risk of impact on international designations, applying to both the designation and to functionally linked land.

New settlements on public transport corridors

Table 11: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	3,900	-	1,900	2,500	2,500

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Medium	-	5,000	-	7,350	-	2,500	2,500	2,500
Maximum	-	5,900	-	13,150	-	5,100	5,100	5,100

Table 12: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	9,000	-	4,500	4,500	4,500
Medium	-	5,900	-	22,500	-	9,000	4,500	4,500
Maximum	-	13,500	-	22,500	-	9,000	9,000	9,000

Opportunities

- Opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning to accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources.
- Additional sustainable transport routes provide an opportunity to integrate GI connectivity.
- Whilst there is risk of severance/ increased severance of the GI network by widening development along transport corridors, there are opportunities for GI connectivity across and along these potential barriers to be supported through landscape-led masterplanning.

Risks

- Sensitivities of GI assets in the vicinity of each new settlement will reflect the selected location, for example, the Ely (Waterbeach) rail link (fenland and wash Special Area of Conservation (SAC) Special Protection Area (SPA) and Ramsar designations), London (Duxford Chapel) rail link (Gog Magog-Roman Road-Fleam Dyke GI opportunity area) and London (Melbourn) rail link (surrounding Natural England Habitat Network Mapping Enhancement and Expansion area).
- Risk of severance/ increased severance of the GI network by widening development along transport corridors; GI connectivity across and along these potential barriers could be supported through landscape-led masterplanning.
- Depending on the location of new settlements and supporting infrastructure, potential risk of impact on international designation and/or functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, SPA & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure).

- Areas of high soil carbon density occur primarily along the south and east rail corridors, including Waterbeach, the Shelfords and Duxford. Pockets also occur along the guided busway (Oakington to Longstanton). Development on land supporting high levels of carbon may cause disturbance or loss thereof. The requirement to offset such loss to a proposed development would need to be considered as part of the carbon assessment thereof.

Implications for GI under higher delivery scenarios

- Depending on the location of new settlements and supporting infrastructure, increased risk of impact on international designation and/or functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, SPA & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure). This is increased under the 'all time' scenarios.
- Higher delivery scenarios spread across an additional location and incur wider reach of impact risk across designated sites and notable habitats; and the greater scale of development incurs a potential increased magnitude of impact.

New settlement on road network

Table 13: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	-	-
Medium	-	-	-	2,450	-	-	-	-
Maximum	-	-	-	4,550	-	-	-	-

Table 14: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	-	-
Medium	-	-	-	4,500	-	-	-	-
Maximum	-	-	-	9,000	-	-	-	-

Opportunities

- Opportunity to integrate a wider range of GI opportunities associated with larger scale development.

- Whilst there is a risk of severance/ increased severance of the GI network by widening development along transport corridors, there are opportunities for GI connectivity across and along these potential barriers to be supported through landscape-led masterplanning.

Risks

- Risk of severance/ increased severance of the GI network by widening development along transport corridors; GI connectivity across and along these potential barriers could be supported through landscape-led masterplanning.
- Depending on the location of new settlements and supporting infrastructure, risk of impact on international designation and/or functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, SPA & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure).

Implications for GI under higher delivery scenarios

- Increased risk of impact on international designation and/or functionally linked habitat.

New settlements on public transport corridors (southern cluster)

Table 15: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	2,500	-
Medium	-	-	-	-	-	-	2,500	-
Maximum	-	-	-	-	-	-	5,100	-

Table 16: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	4,500	-
Medium	-	-	-	-	-	-	4,500	-
Maximum	-	-	-	-	-	-	9,000	-

Opportunities

- Potential expansion of the parkland and country park network to be considered as part of the strengthening of GI assets in the vicinity.

- Opportunities for habitat enhancement relate typically to woodland (optimising connectivity to both existing (for example through the Cam and Granta corridors) and proposed woodland as part of forthcoming development) and to wetland-grassland mosaic. These collectively serve to support flood management, biodiversity and carbon capacity.
- Opportunity to make a strategic contribution to strengthening GI assets within the (provisional) Gog Magog-Roman Road-Fleam Dyke GI opportunity area and the area of Natural England Habitat Network Mapping Enhancement opportunity centred around Melbourne.
- Development in the south eastern corner could incorporate appropriate planting to support delivery of the B-Line and respect the local chalk grassland character.

Risks

- Wider development across villages south of Cambridge must consider cumulative impact/s on the grassland and wetland habitats along and between the river, stream and dyke corridors.
- The life sciences cluster area has relatively high levels of soil carbon and, in places, carbon in vegetation.

Implications for GI under higher delivery scenarios

- Greater scale of development incurs a potential increased magnitude of impact.

New settlements on public transport corridors (Cambourne area)

Table 17: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	-	2,500
Medium	-	-	-	-	-	-	-	2,500
Maximum	-	-	-	-	-	-	-	5,100

Table 18: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	-	4,500
Medium	-	-	-	-	-	-	-	4,500
Maximum	-	-	-	-	-	-	-	9,000

Opportunities

- Potential to further develop active transport connections linking GI assets with managed capacity for recreational access (for example Country Park and LNR network) to alleviate demand / potential demand on those with sensitive hydrological or ecological features.
- Opportunities to enhance wetland and grassland habitat and associated networks to support flood management and biodiversity.

Risks

- Potential impact/s on Eversden & Wimpole SAC and the numerous Site of Special Scientific Interest (SSSI) (primarily woodland in character) must be considered cumulatively. The SAC support barbastelle bats who also rely on habitats in the wider area for foraging. Mitigation may include strategic woodland, parkland, species-rich grassland, and wetland creation across the Cambridge Hundreds. Note the Cambridge Hundreds extends north and south of the A428.
- High levels of estimated carbon in vegetation occur in association with the woodland and less intensively managed or diverse grasslands across the Cambridge Hundreds.

Implications for GI under higher delivery scenarios

- Greater scale of development incurs a potential increased magnitude of impact.

Commentary on the different spatial options

3.10 Drawing on the review of each broad supply area, this section provides a summary of the potential implications for GI under each strategic spatial option. The summary focuses on the main areas of supply under each option in order to differentiate between the options; some of which have similar additional areas of supply to support the main focus areas.

Strategic Spatial Option 1: Densification of existing urban areas

3.11 This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is in North East Cambridge: this is the last major brownfield site within Cambridge urban area and is being taken forward separately via an Area Action Plan.

3.12 Focusing growth in the existing urban area presents both risks and opportunities for GI. On the one hand, there is greater potential for piece-meal delivery of GI associated with multiple smaller developments and the added challenge of significant 'space' constraints. On the other hand, there are opportunities to deliver new GI where there may be existing deficiencies or challenges. It is likely that innovative interventions will be required to retrofit GI into the existing urban area. Opportunities to increase the permeability of the urban area will be needed so as not to exacerbate surface water flooding and the urban heat island effect.

3.13 The focus on existing urban areas will place additional pressure on existing nature conservation and recreation sites. There is also a risk of potential impacts on international nature conservation designations in closest proximity (south east fenland complex). However, there may also be opportunities to use GI to support delivery of nearby Natural England's Habitat Network opportunity zones and support pollinator corridors – particularly in the south of Cambridge.

3.14 This strategic spatial option has additional areas of supply: NEC and Cambridge Airport (under the medium and maximum scenarios), which provide greater opportunities for integrating a wide range of GI given the larger scale of development in a single location. There is the

opportunity to create a GI network across these sites in an innovative and coherent manner which maximises benefits. However this presents risks to the existing GI network; particularly relating to increased recreational pressure on nearby sites, and potential impacts on wetland assets to the east and north east. The Cambridge Airport area has been identified as having high estimated levels of soil carbon and carbon in vegetation. Development may cause disturbance or loss thereof. However, there are habitat expansion and enhancement opportunities in close proximity.

3.15 Under the medium and maximum scenarios, there is increased risk of pressure on existing GI assets and a greater need to identify sufficient land to accommodate delivery of new GI close to the development. There is also increased risk of impact on designations in close proximity and, under 'all time' scenarios, the potential for loss of land within Natural England's Habitat Network opportunity zones.

Strategic Spatial Option 2: Edge of Cambridge - outside the Green Belt

3.16 This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the Green Belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

3.17 Focusing growth at the NEC and Cambridge Airport will provide opportunities to integrate a wider range of GI interventions associated with larger development. This includes active travel routes, new open spaces and GI that supports Natural England's Habitat Network opportunity zones. GI could also provide opportunities to address higher levels of deprivation in nearby areas.

3.18 However, growth here presents risks to the existing GI network; particularly relating to increased recreational pressure on sites, and potential impacts on wetland assets to the east and north east. The Cambridge Airport area has been identified as having high estimated levels of soil carbon and carbon in vegetation. Development may cause disturbance or loss thereof. However, there are habitat expansion and enhancement opportunities in close proximity.

3.19 Under the medium and maximum scenarios, there is increased risk of pressure on existing GI assets and a greater need to identify sufficient land to accommodate delivery of new GI close to the development. There is also increased risk of impact on designations in close proximity and, under 'all time' scenarios, the potential for loss of land within Natural England's Habitat Network opportunity zones.

3.20 Moving from minimum to medium and maximum scenarios introduces the need for additional new settlements on public transport corridors. Again, this may bring opportunities to integrate a wider range of GI opportunities associated with larger scale development, but the sensitivities of existing GI assets in the vicinity of each new settlement will reflect the selected location. There is a risk of severance/ increased severance of the GI network by widening development along transport corridors, but an opportunity to use GI to mitigate this. Depending on the location of new settlements and supporting infrastructure, there is the potential risk of impacts on international designations and/or functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, Special Protection Area (SPA) & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure). This applies to medium and maximum scenarios but is increased under the 'all time' target.

Strategic Spatial Option 3: Edge of Cambridge - Green Belt

3.21 This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

3.22 Focus on the Green Belt Fringe provides an opportunity for urban extensions to cater for GI deficits in neighbouring urban areas. There are also opportunities associated with the requirement of the NPPF for the release of Green Belt sites to positively enhance the remaining Green Belt. The Green Belt fringe supports significant habitat opportunity zones (as identified by Natural England Habitat Network mapping) in the south east and south west in particular, and to a lesser extent to the west around Coton. There are also opportunities to connect to/ expand key GI assets such as the parkland and country park network, and cycle/footpaths (to alleviate/ avoid additional pressure on existing routes within spatially constrained watercourse corridors).

3.23 There is some sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance. Green Belt Fringe areas of particular sensitivity include the Cam corridor through Trumpington, Fen Ditton and Grantchester which are vulnerable to hydrological change and recreational pressure. Areas in the east and south have high estimated levels of soil carbon. Development on land supporting high levels of carbon may cause disturbance or loss thereof.

3.24 There is also a potential risk of impacts on international designations – those in closest proximity include the south east fenland complex and north east fen complex and peatlands.

3.25 Moving to higher delivery numbers under the medium and maximum scenarios incurs greater potential for loss of land within Natural England Habitat Network mapping opportunity areas which may otherwise be available for habitat enhancement and creation to alleviate existing pressures and future opportunities.

Strategic Spatial Option 4: Dispersal - new settlements

3.26 New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

3.27 Establishing new settlements on public transport corridors provides an opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning could accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources. Additional sustainable transport routes provide an opportunity to integrate GI connectivity and mitigate potential severance.

3.28 Sensitivities of existing GI assets in the vicinity of each new settlement will reflect the selected location, for example, the Ely (Waterbeach) rail link (fenland and wash SAC SPA and Ramsar designations), London (Duxford Chapel) rail link (Gog Magog-Roman Road-Fleam Dyke GI opportunity area) and London (Melbourn) rail link (surrounding NE Habitat Network Mapping Enhancement and Expansion area).

3.29 Depending on the location of new settlements and supporting infrastructure, there is an increased risk of impact on international designation and/or (particularly at 'all time' rates) functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, SPA & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure).

3.30 Increasing the scale of development under the medium and maximum scenarios potentially incurs an increased magnitude of impact of the risks identified above.

Strategic Spatial Option 5: Dispersal – villages

3.31 This approach would spread new homes and jobs out to the villages. This increases the likelihood of piece-meal GI interventions associated with multiple smaller developments, as opposed to delivering strategic GI opportunities. This may lead to greater challenges in delivering integrated ecological networks unless an overarching vision is established and supported in planning policy and land-use decision making.

3.32 Where villages are located in close proximity to designated or non-designated sites, there is potential for impacts on these and the wider ecological network. Sensitivities of GI assets in the vicinity of each village will reflect the selected locations. The nature, extent and magnitude of potential impacts cannot be determined in the absence of information on where development will be specifically located. Depending on the detailed distribution of development, potential impacts on international sites may occur via hydrological connectivity or quality, recreational impact, air quality impact, or through habitat loss or damage (of designated or functionally linked land).

3.33 Higher dwelling numbers associated with the medium and maximum scenarios incurs potential for a wider scale of impacts risk across designated sites and notable habitats.

3.34 The higher concentrations within individual villages under the medium and maximum scenarios may present opportunities to deliver GI that can address existing deficiencies in access to open space, and offer opportunities to add to the active travel network connecting villages and connecting to urban areas.

Strategic Spatial Option 6: Public transport corridors

3.35 This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

3.36 This option focuses development at NEC and one new settlement on a public transport corridor, and under the medium and maximum scenarios, a large proportion is distributed to villages on public transport corridors. These larger scale developments provide opportunities to integrate a wider range of GI opportunities; including opportunities for landscape-led masterplanning and planning in active travel networks to increase GI connectivity. There are also opportunities to support network enhancement and expansion zones identified by Natural England Habitat Network mapping near the NEC.

3.37 Development at NEC may place additional recreational pressure on key GI assets (especially under the 'all time' scenario), and key sensitivities include the wetland assets to east and north. There is a risk of potential impacts on international fenland and washes sites via hydrological connectivity or through habitat loss or damage (of designated or functionally linked land). Depending on the location of the new settlement and supporting infrastructure, there is increased risk of impact on international designation and/or (particularly at 'all time' rates) functionally linked habitat.

3.38 Moving to the medium and maximum scenarios increases the potential magnitude of impacts noted above and introduces greater scale of delivery to villages on public transport corridors. Where villages are located in close proximity to designated or non-designated sites, there is potential for impacts on these and the wider ecological network. There is a greater likelihood of piece-meal GI interventions as opposed to delivering strategic GI opportunities. This may translate to greater challenge in delivering integrated ecological networks unless an

overarching vision is established and supported in planning policy and land-use decision making.

3.39 Sensitivities of GI assets in the vicinity of each village will reflect the selected locations. The nature, extent and magnitude of potential impacts cannot be determined in the absence of information on where development will be specifically located.

Strategic Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

3.40 This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

3.41 Focusing delivery at a new settlement in the life sciences cluster area around the south of Cambridge provides opportunities for habitat enhancement relating to woodland (optimising connectivity to both existing and proposed as part of forthcoming development) and the wetland-grassland mosaic. These could collectively serve to support flood management, biodiversity and carbon capacity. There is an opportunity to make a strategic contribution to strengthening GI assets within the (provisional) Gog Magog-Roman Road-Fleam Dyke GI opportunity area and the area of Natural England Habitat Network Mapping Enhancement opportunity centred around Melbourne.

3.42 Potential expansion of the parkland and country park network could be considered as part of the strengthening of GI assets in the vicinity. Development could incorporate appropriate planting to support delivery of the B-Line and respect the local chalk grassland character.

3.43 Wider development across villages south of Cambridge must consider cumulative impact/s on the grassland and wetland habitats along and between the river, stream and dyke corridors. Distributing additional housing to 14 villages in this area presents potential for impacts on designated or non-designated sites and the wider ecological network where these are in close proximity. Sensitivities of GI assets in the vicinity of each village will reflect the selected locations. Like other options involving development within the villages, there is a greater likelihood of piece-meal GI interventions as opposed to delivering strategic GI opportunities. This may translate to greater challenges in delivering integrated ecological networks unless an overarching vision is acknowledged and supported in planning policy and land-use decision making.

3.44 At the medium and maximum levels the greater scale of development may incur greater magnitude of impacts. Greater concentration within fewer villages may increase potential for delivery of more strategic GI opportunities, particularly those related to active transport.

Strategic Spatial Option 8: Expanding a growth area around transport nodes

3.45 This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

3.46 Development focused around Cambourne and along the A428 public transport introduces potential impact/s on Eversden & Wimpole SAC and the numerous SSSI (primarily woodland in character) which must be considered cumulatively. The SAC supports barbastelle bats who also rely on habitats in the wider area for foraging. Mitigation may include strategic woodland, parkland, species-rich grassland, and wetland creation across the Cambridge Hundreds.

3.47 There is a risk of development (dwellings or supporting infrastructure) which may extend or exacerbate existing north-south severance; but also an opportunity to introduce GI connectivity across the A428 corridor. There is potential to further develop active transport connections linking GI assets with managed capacity for recreational access (for example Country Park and LNR network) to alleviate demand / potential demand on those with sensitive hydrological or ecological feature and opportunities to enhance wetland and grassland habitat and associated networks to support flood management and biodiversity.

3.48 This option also distributes development to a number of villages. Where villages are located in close proximity to designated or non-designated sites, there is potential for impacts on these and the wider ecological network. Sensitivities of GI assets in the vicinity of each village will reflect the selected locations. The nature, extent and magnitude of potential impacts cannot be determined in the absence of information on where development will be specifically located

3.49 Greater concentration within fewer villages may increase the potential for delivery of more strategic GI opportunities, particularly those related to active transport.

3.50 The medium scenario distributes some development to the NEC. The risks and opportunities associated with this broad area are as noted in other options; including the opportunity to integrate a wider range of GI opportunities associated with larger scale development.

3.51 The maximum scenario distributes some development to Cambridge Airport. The risks and opportunities associated with this broad area are as noted in other options; including the opportunity to integrate a wider range of GI opportunities associated with larger scale development.

Chapter 4 – Conclusion and next steps

5.1 The assessment has concluded that each option offers different opportunities and potential risks in terms of GI; no one option clearly performing better than the others in terms of GI.

5.2 Additional growth will put pressure on the existing GI network; the higher the level of growth, the greater the increased pressure. Development can also provide opportunities for GI such as new areas of GI for recreation or habitat provision, or enhancement of existing areas which already perform a specific function (such as important habitats); to improve the efficacy of this function.

5.3 The minimum growth option potentially provides more scope to locate development to minimise impacts on existing assets, or to focus development to where the greatest opportunities can be achieved. The higher growth options reduce flexibility in relation to being able to target the location of development in this way and will result in greater landtake. Where space is constrained, GI provision will need to be more innovative.

5.4 Whilst not easily simplified due to the complexities of GI, a high level summary of the implications for GI under each strategic spatial option is provided below:

- Strategic Spatial Option 1: Densification of existing urban areas - presents both risks and opportunities for GI. On the one hand, there is greater potential for piece-meal delivery of GI associated with multiple smaller developments and the added challenge of significant 'space' constraints. On the other hand, there are opportunities to deliver new GI where there may be existing deficiencies or challenges.
- Strategic Spatial Option 2: Edge of Cambridge - outside the Green Belt - provides opportunities to integrate a wider range of GI interventions associated with larger development. GI could also provide opportunities to address higher levels of deprivation in nearby areas. However, growth here presents risks to the existing GI network; particularly relating to increased recreational pressure on sites, and potential impacts on wetland assets to the east and north east.
- Strategic Spatial Option 3: Edge of Cambridge - Green Belt - provides an opportunity for urban extensions to cater for GI deficits in neighbouring urban areas. There are also opportunities associated with the requirement of the NPPF for the release of Green Belt sites to positively enhance the remaining Green Belt. There is some sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance and a potential risk of impacts on international designations.
- Strategic Spatial Option 4: Dispersal - new settlements – provides an opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning could accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources. Additional sustainable transport routes provide an opportunity to integrate GI connectivity and mitigate potential severance.
- Strategic Spatial Option 5: Dispersal – villages – increases the likelihood of piece-meal GI interventions associated with multiple smaller developments, as opposed to delivering strategic GI opportunities. This may lead to greater challenges in delivering integrated ecological networks unless an overarching vision is established and supported in planning policy and land-use decision making.
- Strategic Spatial Option 6: Public transport corridors – whilst potentially placing additional recreational pressure on key GI assets, larger scale developments on public transport

corridors may provide opportunities to integrate a wider range of GI opportunities; including opportunities for landscape-led masterplanning and planning in active travel networks to increase GI connectivity. There are also opportunities to support network enhancement and expansion zones identified by Natural England Habitat Network mapping. Higher delivery scenarios introduce greater scale of delivery to villages on public transport corridors; potentially resulting in piece-meal GI interventions in these locations unless strategically planned.

- Strategic Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster) – provides opportunities make a strategic contribution to strengthening GI assets. Wider development across villages south of Cambridge will need to consider cumulative impact/s on the grassland and wetland habitats along and between the river, stream and dyke corridors.
- Strategic Spatial Option 8: Expanding a growth area around transport nodes - introduces potential impact/s on Eversden & Wimpole SAC and the numerous SSSI. There is a risk of development extending or exacerbating existing north-south severance; but also an opportunity to introduce GI connectivity across the A428 corridor. There is potential to further develop active transport connections linking GI assets.

5.5 The Councils will use the findings of this review alongside similar reviews for other emerging and existing evidence studies to test the strategic spatial options through the Sustainability Appraisal.

5.6 This will contribute towards the selection of a preferred strategic spatial option, ahead of any detailed identification and consideration of sites.

South Cambridgeshire District Council and Cambridge City Council

Greater Cambridge Local Plan Strategic Spatial Options Assessment: HRA

Final Report

Prepared by LUC

November 2020

South Cambridgeshire District Council and Cambridge City Council
 Greater Cambridge Local Plan
 Review of Strategic Spatial Options in relation to HRA

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Chapter 1 : Executive Summary

1.1 This review of spatial options in relation to Habitat Regulations Assessment (HRA) has been prepared by LUC on behalf of South Cambridgeshire District Council and Cambridge City Council (the Councils) as part of the HRA of their Local Plan.

1.2 This report forms part of a wider HRA process, which began in 2019 with the production of the HRA Scoping Report of the Greater Cambridge Local Plan Issues and Options 2020¹, which identified European sites with potential to be affected by the Local Plan. This report draws on the findings of the HRA Scoping Report to determine the impacts of each strategic spatial option.

1.3 This report presents the findings of the assessment of the spatial options being considered by the Council and will be used to inform the Council's decision making regarding, which spatial options to take forward.

Summary of findings

1.4 The Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document. This review focusses on the primary location of development for each strategic option rather than on each growth level option identified. The potential impacts to European sites for each Strategic Spatial Option identified are summarised below.

1.5 Due to the high-level nature of the options presented at this stage, there are no site-specific boundaries provided. Therefore, in line with a precautionary approach where there was any uncertainty in relation to potential impacts to a European site an adverse impact was assumed. It is therefore expected that as proposals are developed further for each option that potential impacts identified at this stage will be refined.

- Option 1: Densification of existing urban areas and Option 2: Edge of Cambridge - outside the Green Belt
 - Physical damage and loss (offsite): Eversden and Wimpole Woods SAC.
 - Non-physical Disturbance: Eversden and Wimpole Woods SAC.
 - Non-Toxic Contamination: Eversden and Wimpole Woods SAC.
 - Air Pollution: Devil's Dyke SAC, Ouse Wash SAC, SPA and Ramsar.
 - Recreation: Wicken Fen Ramsar and Fenland SAC.
 - Water Quantity and Quality: Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar, Fenland SAC.
- Option 3: Edge of Cambridge - Green Belt
 - Physical Damage and Loss (offsite): Eversden and Wimpole Woods SAC.
 - Non-physical Disturbance: Eversden and Wimpole Woods SAC.

¹ LUC, 2020, HRA Scoping Report of Greater Cambridge Local Plan.

- Non-Toxic Contamination: Eversden and Wimpole Woods SAC.
 - Air Pollution: Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar.
 - Recreation: Eversden and Wimpole Woods SAC, Devil's Dyke SAC, Wicken Fen Ramsar, Fenland SAC.
 - Water Quantity and Quality: Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar, Fenland SAC.
- Option 4: Dispersal - new settlements, Option 5: Dispersal - villages and Option 6: Public transport corridors
- Physical Damage and Loss (offsite): Eversden and Wimpole Woods SAC, Ouse Washes SAC, SPA and Ramsar.
 - Non-physical Disturbance: Eversden and Wimpole Woods SAC, Ouse Washes SAC, SPA and Ramsar.
 - Non-Toxic Contamination: Eversden and Wimpole Woods SAC, Ouse Washes SAC, SPA and Ramsar.
 - Air Pollution: Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar.
 - Recreation: Eversden and Wimpole Woods SAC, Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar, Portholme SAC, Wicken Fen Ramsar, Fenland SAC.
 - Water Quantity and Quality: Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar, Fenland SAC.
- Option 7: Supporting a high-tech corridor by integrating homes and jobs and Option 8: Expanding a growth area around transport nodes
- Physical Damage and Loss (offsite): Eversden and Wimpole Woods SAC.
 - Non-physical Disturbance: Eversden and Wimpole Woods SAC.
 - Non-Toxic Contamination: Eversden and Wimpole Woods SAC.
 - Air Pollution: Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar.
 - Recreation: Eversden and Wimpole Woods SAC, Wicken Fen Ramsar, Fenland SAC.
 - Water Quantity and Quality: Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar, Fenland SAC.

1.6 The review has identified a range of potential impacts for each option. Although, there are a greater number of potential impacts identified in relation some options compared to others, it cannot be assumed that these options will result in a greater level impact overall. This will be dependent on the level of risk and severity of impact to each European site. which will be assessed in more detail as part of the HRA.

Chapter 2 : Introduction

Introduction to evidence base

2.1 South Cambridgeshire District Council and Cambridge City Council (the Councils) have commissioned LUC to undertake a Habitat Regulations Assessment (HRA) of their emerging Local Plan. HRA refers to the assessment of the potential effects of a development plan on one or more European sites, including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites. It is a requirement under the Conservation of Habitats and Species Regulations 2017² for the Council undertake an HRA to ensure that the development plan does not adversely affect the integrity of any European site.

2.2 The purpose of this document is to undertake a high-level review of the likely impacts of the strategic spatial options in relation to HRA and does not constitute a formal HRA Report.

Initial findings

2.3 The HRA process began in 2019 with the production of the HRA Scoping Report of the Greater Cambridge Local Plan Issues and Options 2020¹, which identified European sites with potential to be affected by the Local Plan. This report draws on the findings of the HRA Scoping Report to determine the impacts of each strategic spatial option.

Assessment of strategic (non-site specific) spatial options

2.4 Cambridge City Council and South Cambridgeshire District Council completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.

2.5 The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

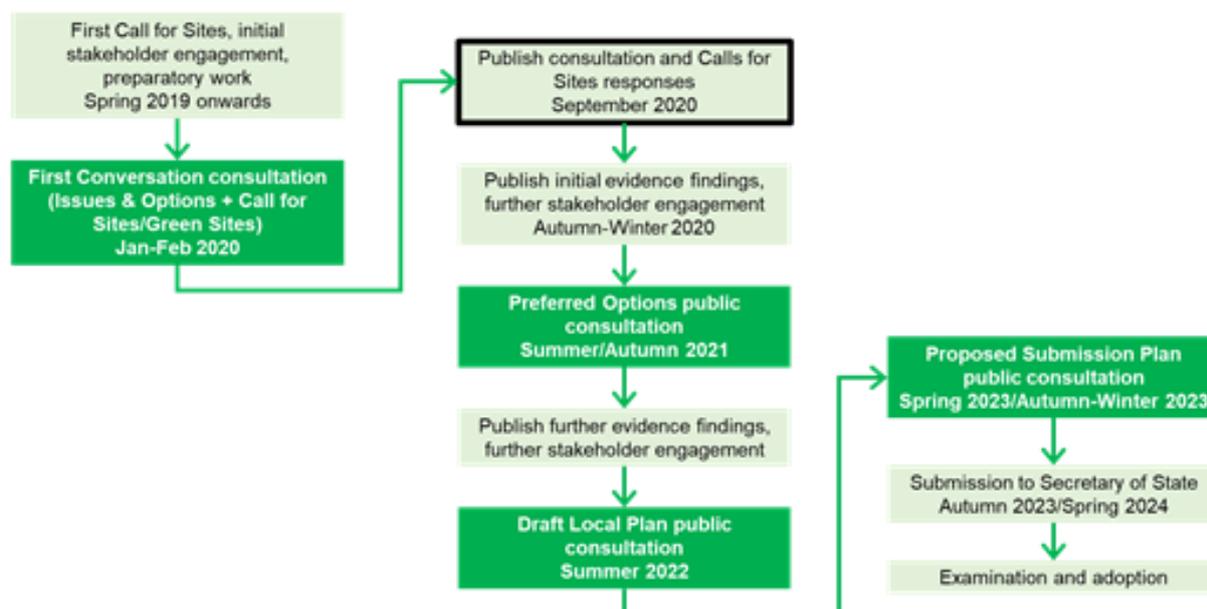
2.6 The initial evidence findings will be reported to the Joint Local Plan Advisory Group autumn 2020 and help to inform further engagement with stakeholders.

2.7 Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below in Figure 2.1.

² The Conservation of Habitats and Species Regulations 2017 (2017) SI No. 2017/1012, TSO (The Stationery Office), London.

Figure 2.1 Process of Local Plan Preparation

Process of Local Plan preparation



The strategic options

2.8 The three growth level options tested through this report are:

- Minimum – Standard Method homes-led
- Medium – central scenario employment-led
- Maximum – higher employment-led

2.9 The spatial scenarios tested through this report are:

1. Densification of existing urban areas
2. Edge of Cambridge – outside the Green Belt
3. Edge of Cambridge – Green Belt
4. Dispersal – new settlements
5. Dispersal – villages
6. Public transport corridors
7. Supporting a high-tech corridor by integrating homes and jobs
8. Expanding a growth area around transport nodes

Methodology

2.10 A review of each strategic spatial option was undertaken to identify potential impacts to European sites that may arise from proposed development within each option. This review was informed by the findings of the HRA Scoping Report of the Greater Cambridge Local Plan 2020¹, which identified European sites with potential to be affected by the Local Plan. This

report has been reviewed and updated accordingly to reflect comments provided by Natural England.

2.11 Whilst considering this review, reference should be made to Table 4.1 in Appendix A, which provides a summary of the Scoping Assumptions and the map of European Sites identified as part of the HRA Scoping report, which is provided in Appendix B.

Precautionary Principle

2.12 HRA is based on a precautionary principle meaning that where uncertainty or doubt remains about the likely effects of the proposals, a precautionary approach will be applied. This approach assumes an adverse impact unless there is sufficient certainty of no impacts to ensure that the qualifying features of the European sites are fully protected. This precautionary approach has been applied in this review.

2.13 To identify the potential impacts of each Strategic Spatial Option, a set of assumptions were applied. These assumptions are guided by a set of distances and buffers, which are set out below. Given there are many uncertainties associated with using set distances as a result of limited availability of standards available, a precautionary approach has been applied to determine the potential impacts to each European site in relation to each strategic spatial option.

Limitations and Constraints

2.14 Each Strategic Spatial Option presents three high level options at a minimum, medium and maximum growth level over the plan period. At this stage, due to the high level nature of the options provided with limited information on the location of proposed growth and overlap between the sites included in each option, this assessment focusses on the primary location of growth for each of the spatial options until a more detailed assessment can be complete.

2.15 At this stage, as there are no site-specific boundaries identified for proposed development within each Strategic Spatial Option. In line with a precautionary approach, where there is any uncertainty or doubt about the likely effects of proposed development within an option in relation to a European site, a likely significant effect was assumed.

Chapter 3 : Assessment of Strategic Spatial Options

3.1 This chapter presents the HRA findings of the strategic spatial options set out in the document 'Greater Cambridge Local Plan: strategic spatial options for testing – methodology' (the methodology document).

Precautionary Assumptions

Physical Damage and Loss

3.2 Any development resulting from the Local Plan would take place within Greater Cambridge, therefore, only European sites within the boundary of this area could be affected direct by physical damage or loss of habitat within the site boundaries. Eversden and Wimpole Woods SAC is the only site, which lies within Greater Cambridge and is therefore the only European sites considered to have potential to be directly affected by physical damage and/or loss from development. It is understood that there is a commitment by the Council for no development proposed as part of the Local Plan to result in the direct physical damage and loss of European sites. This review therefore only considers the potential impact of physical damage and loss to offsite functional habitat.

3.3 Habitat loss from development in areas outside of the European site boundaries may result in likely significant effects where that habitat contributes towards maintaining the interest feature for which the European site is designated. This includes land which may provide offsite movement corridors or feeding and sheltering habitat for mobile species such as bats, birds and fish.

Eversden and Wimpole Woods SAC

3.4 Eversden and Wimpole SAC supports barbastelle, which is a qualifying feature of the site. This is a mobile species, which relies on habitat within the SAC and functionally linked habitat in the wider area, which provides important foraging habitat for this species.

3.5 A review of data sources has identified that this species travels within a Core Sustainance Zone (CSZ) of 6km. The CSZ refers to the area surrounding a bat roost for barbastelle bats within which habitat availability and quality will have a significant influence on the resilience and conservation of the bat colony using the roost. It is however understood that this species will travel up to 20km providing there are suitable commuting corridors, such as woodland edges, hedgerows and rivers, are present and that the habitats present provide sufficient foraging resources to make the longer distance worthwhile. In line with a precautionary approach, a 20km buffer was applied in this assessment.

Ouse Washes SAC

3.6 The Ouse Washes SAC is designated for supporting populations of spined loach. This species has limited dispersal and occurs patchily in a variety of waterbodies, including small streams, large rivers and both large and small drainage ditches. It is assumed that likely significant effects will only arise from proposed development that directly discharges into waterbodies within the River Ouse catchment.

Ouse Washes SPA and Ramsar

3.7 The Ouse Washes SPA and Ramsar supports a range of wetland bird species, which may rely on land, which is functionally linked to the SPA and Ramsar, but outside the site boundaries. Natural England has previously advised that their recognised distance for the consideration of offsite functionally linked land is generally 2km, but for certain species, including most notably golden plover and lapwing, a greater distance of 15km may be appropriate. As the SPA and Ramsar do not support either golden plover or lapwing, a distance of 2km was applied in this assessment.

Non-physical Disturbance

3.8 Noise and vibration effects, e.g. during the construction of new housing or employment development, are most likely to disturb bird and bat species and are thus a key consideration with respect to European sites where these species are the qualifying features. Artificial lighting at night (e.g. from streetlamps, flood lighting and security lights) has the potential to affect species where it occurs in close proximity to key habitat areas, such as key roosting sites of SPA birds and movement or feeding areas of SAC bats.

3.9 It has been assumed that the effects of noise, vibration and light are most likely to be significant within a distance of 500 metres. There is also evidence of 300 metres being used as a distance up to which certain bird species can be disturbed by the effects of noise ; however, it has been assumed (on a precautionary basis) that the effects of noise, vibration and light pollution are capable of causing an adverse effect if development takes place within 500 metres of a European site with qualifying features sensitive to these disturbances.

Non-toxic Contamination

3.10 Habitats can be subject to non-toxic contamination, such as nutrient enrichment, changes in salinity and smothering from dust, due to industrial action, agriculture, construction and water abstraction and discharge. European sites with potential to be affected by non-toxic contamination are likely to be those sites that lie within close proximity, or those that are hydrologically connected to areas of development provided for by the plan but potential changes to water quantity and quality are considered separately.

3.11 Ouse Washes SAC, SPA and Ramsar sites, and Eversden and Wimpole Woods SAC lie within or adjacent to Greater Cambridge and therefore have potential to be susceptible to impacts from non-toxic contamination.

Air Pollution

3.12 Air pollution is most likely to affect European sites where plant, soil and water habitats are the qualifying features, but some qualifying animal species may also be affected, either directly or indirectly, by deterioration in habitat as a result of air pollution. Deposition of pollutants to the ground and vegetation can alter the characteristics of the soil, affecting the pH and nitrogen levels, which can then affect plant health, productivity and species composition.

3.13 In terms of vehicle traffic, nitrogen oxides (NO_x, i.e. NO and NO₂) are considered to be the key pollutants. Deposition of nitrogen compounds may lead to both soil and freshwater acidification, and No_x can cause eutrophication of soils and water.

3.14 Based on the Highways Agency Design Manual for Road and Bridges (DMRB) Manual Volume 11, Section 3, Part 114 (which was produced to provide advice regarding the design,

assessment and operation of trunk roads including motorways), it is assumed that air pollution from roads is unlikely to be significant beyond 200m from the road itself. Where increases in traffic volumes are forecast, this 200m buffer needs to be applied to the relevant roads in order to make a judgement about the likely geographical extent of air pollution impacts.

3.15 The DMRB Guidance for the assessment of local air quality in relation to highways developments provides criteria that should be applied at the Screening Stage of an assessment of a plan or project, to ascertain whether there are likely to be significant impacts associated with routes or corridors. Based on the DMRB guidance, affected roads which should be assessed are those where:

- Daily traffic flows will change by 1,000 AADT (Annual Average Daily Traffic) or more; or
- Heavy duty vehicle (HDV) flows will change by 200 AADT or more; or
- Daily average speed will change by 10 km/hr or more; or
- Peak hour speed will change by 20 km/hr or more; or
- Road alignment will change by 5 m or more.

3.16 Where significant increases in traffic are possible on roads within 200m of European sites, traffic forecast data may be needed to determine if increases in vehicle traffic are likely to be significant. In line with the Wealden judgment³, the traffic growth considered by the HRA should be based on the effects of development provided for by the Plan in combination with other drivers of growth such as development proposed in neighbouring districts and demographic change.

3.17 It has been assumed that only those roads forming part of the primary road network (motorways and 'A' roads) are likely to experience any significant increases in vehicle traffic as a result of development (i.e. greater than 1,000 AADT). As such, where a site is within 200m of only minor roads, no significant effect from traffic-related air pollution is considered to be the likely outcome.

3.18 The following European sites within 15km of Greater Cambridge and within 200m of a strategic road include:

- Devil's Dyke SAC (A14, A1304);
- Ouse Washes SAC, SPA and Ramsar (A1123);
- Portholme SAC (A14).

3.19 These European sites support habitats, which are susceptible to increases in air pollution and therefore any increase vehicle traffic as a result of proposed development within the plan has the potential to significantly affect the qualifying features of these European sites. To fully understand the impacts of increased development within this strategic spatial option in combination with other plans and projects, AADT traffic modelling data, which calculates the change in trips that would result from this option, over the plan period is required. If AADT exceeds the threshold of 1,000 AADT, air quality modelling will be required to understand whether the Plan will result in AEoI and whether avoidance and mitigation measures can be applied which would prevent AEoI.

³ Wealden v SSCLG [2017] EWHC 351 (Admin)

Recreation

3.20 Recreational activities and human presence can result in significant effects on European sites as a result of erosion and trampling, associated impacts such as fire and vandalism or disturbance to sensitive features, such as birds through both terrestrial and water-based forms of recreation.

3.21 The Local Plan will result in housing growth, and associated population increase within Greater Cambridge. Where increases in population are likely to result in significant increases in recreation at a European site, either alone or in-combination, the potential for likely significant effects will require assessment.

Table 3.1 Cambridgeshire Recreational Pressure IRZ Component SSSIs

SSSI	Zone of Potential Risk: Higher (H) or Lower (L)
Eversden and Wimpole Woods SAC	H – 5km
Ouse Washes SAC, SPA and Ramsar	L – 2km
Portholme SAC	H – 5km
Devil's Dyke SAC	H – 5km

3.22 Following advice provided by Natural England on the draft HRA Scoping Report for the Greater Cambridgeshire Local Plan, a 'zone of potential risk' for recreational pressure of 2km and 5km, which has been derived from the Impact Risk Zones (IRZ) has been applied to inform initial impacts to recreation on European sites. IRZs have been developed by Natural England as a tool to define zones of key sensitivities, including recreational pressure to SSSIs from proposed development. Given the overlap between SSSI and European sites, this zone of potential influence can therefore be used to appropriately identify the potential risks to European sites from the Local Plan in this assessment. Table 3.1 above outlines the zones of potential of risk for each European site, which are considered to be at significant risk from recreational pressure.

3.23 No zone of potential risk was identified by Natural England for SSSI's overlapping Wicken Fen Ramsar, Chippenham Fen Ramsar or Fenland SAC. This is due to the fact that these sites were either not considered to be at significant risk from recreational pressure or in the case of Wicken Fen Ramsar a zone of potential risk has not been included as it is subject to a detailed study as outline below. Therefore, precautionary approach has been applied, which is detailed below.

Wicken Fen Ramsar

3.24 No zone of potential risk was identified for Wicken Fen Ramsar. However, in line with a precautionary approach and following the completion of the visitor surveys within Wicken Fen Vision Area, a Zone of Influence has been applied. The survey data that was collected at the Wicken Fen Main Entrance and found that the majority of visitors travelled between 10km and 20km to visit these sites. Based on these findings and in line with a precautionary approach a ZOI of 20km was applied in this assessment.

Chippenham Fen Ramsar

3.25 No zone of potential risk was identified for Chippenham Fen Ramsar. To ensure that a precautionary approach is taken, this assessment has applied a 5km zone of potential risk, which is the higher zone of potential risk outlined in Table 3.1. This approach has been applied as part of the HRA of the Draft North East Cambridge Local Plan, which has been consulted with by Natural England. No issues were raised by Natural England with regards to this approach. More specific Zone of Influence (ZOI) may be defined following targeted visitor surveys and discussions with land managers, as it is not always appropriate to apply a generic ZOI. Should specific survey data become available, this would be taken into consideration in future iterations of the formal HRA report.

Fenland SAC

3.26 No zone of potential risk was identified for Fenland SAC. However, as this site overlaps with both Wicken Fen Ramsar and Chippenham Fen Ramsar, the respective ZOI have been applied.

Water Quantity and Quality

3.27 An increase in demand for water abstraction and treatment resulting from the growth proposed in the Local Plan could result in changes in hydrology at European sites. Depending on the qualifying features and particular vulnerabilities of the European sites, this could result in likely significant effects; for example, due to changes in environmental or biotic conditions, water chemistry and the extent and distribution of preferred habitat conditions. To fully understand the potential impacts of proposed development on European sites a review of emerging Water Cycle Study being produced as part of the Integrated Water Management Study, which the Councils have commissioned as an evidence base for the Greater Cambridge Local Plan and liaison with the Environment Agency and relevant water companies will be required.

Ouse Washes SAC, SPA and Ramsar

3.28 Impacts from water pollution and changes in hydrology are considered in the Standard Data Forms and Natural England Site Improvement Plan (SIP) to be key threats to the Ouse Washes SAC, SPA and Ramsar site.

3.29 The European sites are located adjacent to the Greater Cambridge district and as a result there is potential for changes in the flow and volume of water entering the River Cam and Ely Ouse associated with proposed development to result in reduced flow downstream of the Denver, which may exacerbate existing siltation problems. This is known to have a knock-on effect onto the Hundred Foot River, which has a significant effect on increased and prolonged flooding at the Ouse Washes SAC, SPA and Ramsar.

Devil's Dyke SAC

3.30 Devil's Dyke SAC supports qualifying semi-natural dry grassland habitat. This habitat is not considered to be susceptible to impacts from water and due to a lack of hydrological connectivity to waterbodies is not considered to be affected by increased development within the district.

Portholme SAC

3.31 Portholme SAC supports qualifying lowland hay meadows habitat. This habitat is not considered to be susceptible to impacts from water and due to a lack of hydrological connectivity to waterbodies is not considered to be affected by increased development within the district.

Wicken Fen Ramsar / Fenland SAC

3.32 Wicken Fen Ramsar is one of Europe's most important wetlands supporting fen habitat and is one of the few fens that has not been drained. Although, impacts from water pollution or hydrological changes have not been highlighted as a key threat within the Ramsar Information Sheet, this habitat is known to be highly sensitive to changes in the quality and quantity of water supply.

Chippenham Fen Ramsar / Fenland SAC

3.33 Chippenham Fen Ramsar supports fenland and grassland habitat and associated invertebrate species, which is dependent upon an adequate supply of high-quality water from a chalk aquifer. This Ramsar site is reliant on the same chalk aquifer, which serves the wider area, including the area the Greater Cambridge district relates to.

A Review of Strategic Spatial Options in relation to each Impact

3.34 The high-level review of each strategic spatial option is presented in Table 3.2 below. This is based on the set of assumptions, which are set out above and should be referred to whilst considering this information.

Table 3.2 Review of each Strategic Spatial Option in relation to HRA

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Option 1: Densification of existing urban areas	This option would result in an increase in the density of development in Cambridge, and therefore an increase in population, particularly in North East Cambridge where there is the last major brownfield site that is going to be brought forward via an Area Action Plan.	No European sites were recorded within Cambridge and therefore no likely significant effects (LSE) were considered in relation to direct physical damage and loss. There is however potential for LSE to occur in relation to loss of offsite functional habitat used by qualifying barbastelle	No European sites were recorded within 500m of Cambridge and therefore no LSE was considered in relation to non-physical disturbance. However, there is potential for LSE to occur in relation to non-physical disturbance from proposed development to offsite functional habitat used by qualifying	No European sites lie within or adjacent to broad areas of proposed growth in Option 1. There is however potential for non-toxic contamination to occur in relation to offsite functional habitat used by the qualifying barbastelle species of Eversden and Wimpole Woods SAC. Therefore, there is potential for LSE to occur	Option 1 will result in development within Cambridge, particularly in relation to North East Cambridge, which is being brought forward within the AAP. Although, the proposed development has the potential to reduce people travelling to Cambridge and will encourage the use of sustainable	Proposed development within Option 1 lies outside of the zone of potential risk and ZOI for all sites with exception to Wicken Fen Ramsar and Fenland SAC. Therefore, there is potential LSE from recreational disturbance in relation to Wicken Fen Ramsar and Fenland SAC only.	An increase in development in strategic growth areas proposed within Option 1 have the potential to result in an LSE in relation to Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar and Fenland SAC. Further evidence is required to determine the potential impact

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Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 264		species of Eversden and Wimpole SAC. Due to the nature of the habitats present within Option 1, which is of limited value for this species and the distance of proposed development, which lies outside of the CSZ, any impacts are considered unlikely to result in a LSE on the SAC. However, in line with a precautionary, approach	barbastelle bat species of Eversden and Wimpole SAC. As development for this option will be focussed within Cambridge, particularly in areas of existing urban development and brownfield site located in North East Cambridge, habitats present are considered to have limited value for this species and due to the distance of proposed	in relation to this European site.	modes of transport, there is potential that proposed development will result in increased vehicle traffic to strategic roads in the district and wider area. Therefore, there is potential for LSE to occur as a result of air pollution in relation to Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar and Portholme SAC, which lie within 200m of		of this option as detailed above.

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
		<p>impacts cannot be ruled out and will need to be considered in more detail as the spatial growth options are developed further.</p> <p>No LSE is considered in relation to Ouse Washes SAC, SPA and Ramsar due to distance of these sites from proposed development in Option 1 and the dispersal range of the qualifying species of</p>	<p>development, impacts are considered unlikely to result in a likely significant effect. However, in line with a precautionary approach this will need to be considered in more details as spatial growth options area developed further.</p> <p>Due to the distance of the Ouse Washes SAC, SPA and Ramsar from proposed development</p>		<p>a strategic road.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above</p>		

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
		these European sites.	within Option 1 and the dispersal range of qualifying species of these sites, no LSE was considered.				
Option 2: Edge of Cambridge – outside of the Greenbelt	This option would result in the creation of new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is	No European sites were recorded on the edge of Cambridge in relation to Cambridge Airport and therefore no LSE was considered in relation to direct physical damage and loss. There is however	No European sites were recorded within 500m of edge of Cambridge outside of the green belt, including Cambridge Airport where development is primarily proposed and therefore no LSE were considered in relation to non-	No European sites lie within of adjacent to broad areas of proposed growth in Option 2. There is however potential for non-toxic contamination to occur in relation to offsite functional habitat used by the qualifying barbastelle	Option 2 will result in development on the edge of Cambridge, primarily at Cambridge Airport. Although, the proposed development has the potential to reduce travel by people to Cambridge and will encourage	Proposed development within Option 2 lies outside of the zone of potential risk and ZOI for all sites with exception to Wicken Fen Ramsar and Fenland SAC. Therefore, there is potential LSE from recreational	An increase in development in strategic growth areas proposed within Option 2 have the potential to result in an LSE in relation to Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
	Cambridge Airport.	potential for LSE to occur in relation to loss of offsite functional habitat used by qualifying barbastelle species of Eversden and Wimpole SAC. Due to the nature of habitat present within Option 2, which is of limited value for this species and the distance of proposed development, which lies outside of the CSZ, any impacts are	physical disturbance. However, there is potential for LSE to occur in relation to non-physical disturbance from proposed development to offsite functional habitat used by qualifying barbastelle bat species of Eversden and Wimpole SAC. As development will be focussed at Cambridge Airport, which supports habitats of	species of Eversden and Wimpole Woods SAC. Therefore, there is potential for LSE to occur in relation to this site.	the use of sustainable modes of transport, there is potential that proposed development at the edge of Cambridge will result in increased vehicle traffic to strategic roads in the district and wider area. An increase in vehicle traffic from development within this strategic growth option has the potential to result in LSE as a result of air	disturbance in relation to Wicken Fen Ramsar and Fenland SAC only.	and Fenland SAC. Further evidence is required to determine the potential impact of this option as detailed above.

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 268		<p>considered unlikely to result in a significant effect on the SAC. However, in line with a precautionary, approach impacts cannot be ruled out and will need to be considered in more detail as spatial growth options are developed further.</p> <p>No LSE was considered in relation to Ouse Washes SAC, SPA and Ramsar due to distance of</p>	<p>limited value for bats and which lies outside of the CSZ, impacts are considered unlikely to result in a significant effect on the SAC. However, in line with a precautionary, approach impacts cannot be ruled out and will need to be considered in more detail as spatial growth options are developed further.</p> <p>Due to the distance of the</p>		<p>pollution in relation to Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar and Portholme SAC, which lie within 200m of a strategic road.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>		

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
		these sites from proposed development in Option 2 and the dispersal range of the qualifying species of these European sites.	Ouse Washes SAC, SPA and Ramsar from proposed development within Option 2 and the dispersal range of qualifying species of these sites, no LSE was considered.				
Option 3: Edge of Cambridge – Green Belt	Option 3 includes the development of new sites in Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium	Eversden and Wimpole Woods SAC lies within the Green Belt. However, as there is a commitment that no development will be permitted within	Eversden and Wimpole Woods SAC lies within the Green Belt and therefore has potential LSE to occur as a result of proposed development within Option 3	Due to the location of Eversden and Wimpole SAC, including areas of offsite functional habitat used by the qualifying species of the European site, within and	Option 3 will result in development within the Green Belt, which links to strategic roads within the district. An increase in vehicle traffic in development	Proposed development within Option 3 lies within the zone of potential risk and ZOI of the following sites: □ Eversden and Wimpole Woods SAC;	An increase in development in strategic growth areas proposed within Option 3 have the potential to result in an LSE on Ouse Washes SAC, SPA and Ramsar,

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 270	and maximum growth scenarios across a broad range of locations.	<p>a European site, it can be concluded that Option 3 will not result in an LSE in relation to direct physical damage and loss.</p> <p>However, there is potential for Option 3 to result in LSE to offsite functional habitat used by barbastelle species of Eversden and Wimpole Woods SAC. This option has the potential to focus development</p>	<p>as a result of non-physical disturbance.</p> <p>There is potential for Option 3 to result in non-physical disturbance to offsite functional habitat used by qualifying barbastelle bat species of Eversden and Wimpole Woods SAC. This option has potential to focus development within the CSZ used by this species and</p>	<p>adjacent to the Green Belt where proposed growth in Option 3 is to be delivered, there is potential for LSE to occur in relation to non-toxic contamination.</p> <p>All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered.</p>	<p>within this strategic spatial option has the potential to result in LSE as a result of air pollution in relation to Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar Portholme SAC, which lie within 200m of a strategic road.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Devil's Dyke SAC; <input type="checkbox"/> Wicken Fen Ramsar; and <input type="checkbox"/> Fenland SAC. <p>There is potential for LSE to occur in relation to these European sites as a result of recreational disturbance.</p>	<p>Wicken Fen Ramsar, Chippenham Fen Ramsar and Fenland SAC.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
		<p>within the CSZ of this species, which is of key importance for maintaining the viability of populations within the SAC.</p> <p>Due to the distance and dispersal range of its qualifying species, no LSE was considered in relation to physical damage and loss of offsite functional habitat used by qualifying species of the Ouse Washes</p>	<p>therefore proposed development have potential to have LSE.</p> <p>Due to the distance and dispersal range of its qualifying species, no LSE was considered in relation to Ouse Washes SAC, SPA and Ramsar.</p> <p>The remaining European sites lie over 500m from the Green Belt where development is proposed and was therefore not considered</p>				

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 272		SAC, SPA and Ramsar. All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered.	to result in a LSE.				
Option 4: New Settlements	Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure.	Eversden and Wimpole Wood SAC lies within the district of Greater Cambridge where new settlements are proposed. However, as there is a commitment that no	Eversden and Wimpole Woods SAC and Ouse Washes SAC, SPA and Ramsar lie within 500m of Greater Cambridge where new settlements are proposed and	Due to the location of Eversden and Wimpole SAC and Ouse Washes SAC, SPA and Ramsar, including areas of offsite functional habitat used by the qualifying	Option 4 will result in an increase in development within this strategic growth option. This has the potential to result in LSE as a result of air pollution in relation to Devil's Dyke	Depending on the exact location of proposed development within Option 4, there is potential for proposed development to lie within the zone of potential risk	An increase in development in strategic growth areas proposed within Option 4 have the potential to result in an LSE on Ouse Washes SAC, SPA and Ramsar, Wicken Fen

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
		<p>development will be permitted within a European site, it can be concluded that Option 4 will not result in a LSE in relation to direct physical damage and loss.</p> <p>In addition to this, there is potential for Option 4 to result in LSE to offsite functional habitat used by transient species for which Eversden and Wimpole Woods SAC</p>	<p>therefore has potential to be affected by proposals for development within Option 4 as a result of non-physical disturbance.</p> <p>There is also potential for Option 4 to result in non-physical disturbance to offsite functional habitat used by qualifying species of Eversden and Wimpole Woods SAC and Ouse Washes SAC,</p>	<p>species of the European site, within and adjacent to the district where proposed growth in Option 4 is to be delivered, there is potential for LSE to occur in relation to non-toxic contamination.</p> <p>All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered.</p>	<p>SAC, Ouse Washes SAC, SPA and Ramsar and Portholme SAC, which lie within 200m of a strategic road.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>	<p>and ZOI of the following sites:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Eversden and Wimpole Woods SAC; <input type="checkbox"/> Ouse Washes SAC, SPA and Ramsar; <input type="checkbox"/> Devil's Dyke SAC; <input type="checkbox"/> Portholme SAC; <input type="checkbox"/> Wicken Fen Ramsar; and <input type="checkbox"/> Fenland SAC. <p>There is potential for LSE to occur in relation to these European sites</p>	<p>Ramsar, Chippenham Fen Ramsar and Fenland SAC.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 274		and Ouse Washes SAC, SPA and Ramsar. All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered	SPA and Ramsar. The remaining European sites lie over 500m from the district where development is proposed and was therefore not considered to result in a LSE.			as a result of recreational disturbance.	
Option 5: Dispersal – Villages	Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge.	Eversden and Wimpole Wood SAC lies within the district of Greater Cambridge where new village settlements are proposed. However, as	Eversden and Wimpole Woods SAC and Ouse Washes SAC, SPA and Ramsar lie within 500m of Greater Cambridge where new	Due to the location of Eversden and Wimpole SAC and Ouse Washes SAC, SPA and Ramsar, including areas of offsite functional	Option 5 will result in an increase in development within this strategic growth option. This has the potential to result in LSE as a result of air pollution in	Depending of the exact location of proposed development within Option 5, there is potential for proposed development to fall within the	An increase in development in strategic growth areas proposed within Option 5 have the potential to result in an LSE on Ouse Washes SAC, SPA and

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
		<p>there is a commitment that no development will be permitted within a European site, it can be concluded that Option 5 will not result in a LSE in relation to direct physical damage and loss.</p> <p>In addition to this, there is potential for Option 5 to result in likely significant effects to offsite functional habitat used by transient</p>	<p>village settlements are proposed and therefore has potential to be affected by proposals for development within Option 5 as a result of non-physical disturbance.</p> <p>There is also potential for Option 5 to result in non-physical disturbance to offsite functional habitat used by qualifying species of Eversden and Wimpole</p>	<p>habitat used by the qualifying species of the European site, within and adjacent to the district where proposed growth in Option 4 is to be delivered, there is potential for LSE to occur in relation to non-toxic contamination.</p> <p>All other European sites were situated outside of the broad areas of proposed development and therefore</p>	<p>relation to Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar and Portholme SAC which lie within 200m of a strategic road.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>	<p>zone of potential risk and ZOI of the following sites:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Eversden and Wimpole Woods SAC; <input type="checkbox"/> Ouse Washes SAC, SPA and Ramsar; <input type="checkbox"/> Devil's Dyke SAC; <input type="checkbox"/> Portholme SAC; <input type="checkbox"/> Wicken Fen Ramsar; and <input type="checkbox"/> Fenland SAC. <p>There is potential for LSE to occur in</p>	<p>Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar and Fenland SAC.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 276		species for which Eversden and Wimpole Woods SAC and Ouse Washes SAC, SPA and Ramsar. All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered	Woods SAC and Ouse Washes SAC, SPA and Ramsar. The remaining European sites lie over 500m from the district where development is proposed and was therefore not considered to result in a LSE.	no LSE was considered.		relation to these European sites as a result of recreational disturbance.	
Option 6: Public Transport Corridors	Option 6 proposes development along key public transport corridors and hubs through	Eversden and Wimpole Wood SAC lies within the district of Greater Cambridge. Given the	Eversden and Wimpole Woods SAC and Ouse Washes SAC, SPA and Ramsar do not	No European sites lie within of adjacent to broad areas of proposed growth in Option 6.	Option 6 will result in an increase in development within this strategic growth option. This has	Dependent on the exact location of proposed development along transport corridors within	An increase in development in strategic growth areas proposed within Option 6 have the potential to

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
	the expansion or intensification of existing villages or through more new settlements.	location of proposed future transport corridors within Greater Cambridge as detailed in the figure presented in Appendix A, it is considered unlikely that proposals associated within Option 6 will result in LSE from direct physical damage and loss. In addition to this, as there is a commitment that no development will be	lie within 500m of proposed future transport corridors within Greater Cambridge as detailed in the figure presented in Appendix A. However, in line with a precautionary approach more specific detail on proposed location of growth is required to determine LSE in relation to non-physical disturbance. There is also potential for	However, in line with a precautionary approach no LSE can be ruled out in relation to Eversden and Wimpole SAC and Ouse Washes SAC, SPA and Ramsar until spatial growth options are developed further. All other European sites were situated outside of the broad areas of proposed development and therefore	the potential to result in LSE as a result of air pollution in relation to Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar and Portholme SAC. Further evidence is required to determine the potential impact of this option as detailed above.	Option 6. There is potential for proposed development to fall within the zone of potential risk and ZOI of the following sites: <input type="checkbox"/> Eversden and Wimpole Woods SAC; <input type="checkbox"/> Ouse Washes SAC, SPA and Ramsar; <input type="checkbox"/> Devil's Dyke SAC; <input type="checkbox"/> Portholme SAC; <input type="checkbox"/> Wicken Fen Ramsar; and	result in an LSE on Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar and Fenland SAC. Further evidence is required to determine the potential impact of this option as detailed above.

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 278		<p>permitted within a European site, it can be concluded that Option 6 will not result in a LSE in relation to direct physical damage and loss.</p> <p>There is however potential for Option 5 to result in an LSE to offsite functional habitat used by barbastelle species of Eversden and Wimpole Woods SAC. Proposals This option has the</p>	<p>Option 7 to result in non-physical disturbance to offsite functional habitat used by qualifying barbastelle species of Eversden and Wimpole Woods SAC. This is particularly in relation to future transport corridors to the south-west of Cambridge, which lie within the CSZ.</p> <p>Given the location of future transport</p>	<p>no LSE was considered.</p>		<p><input type="checkbox"/> Fenland SAC.</p> <p>There is potential for LSE to occur in relation to these European sites as a result of recreational disturbance.</p>	

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
		<p>potential to focus development within the CSZ of this species, which is of key importance for maintaining the viability of populations within the SAC.</p> <p>Given the location of future transport corridors and limited dispersal of qualifying species of Ouse Washes SAC, SPA and Ramsar, LSE is considered unlikely in relation to</p>	<p>corridors and limited dispersal of qualifying species of Ouse Washes SAC, SPA and Ramsar, LSE is considered unlikely in relation to non-physical disturbance. However, in line with a precautionary approach this will need to be reviewed once more specific detail is available to rule out no LSE.</p> <p>The remaining European sites</p>				

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 280		<p>physical damage and loss of offsite functional habitat. However, in line with a precautionary approach this will need to be reviewed once more specific detail is available to rule out no LSE.</p> <p>All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered.</p>	<p>lie over 500m from the district where development is proposed and was therefore not considered to result in an LSE.</p>				

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
<p>Option 7: High-tech corridor by integrating homes and jobs (southern cluster)</p> <p>Page 281</p>	<p>Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area.</p>	<p>No European sites were recorded in the south of Cambridge and therefore no LSE was considered in relation to direct physical damage and loss.</p> <p>However, there is potential for Option 7 to result in LSE to offsite functional habitat used by barbastelle species of Eversden and Wimpole Woods SAC. This option has</p>	<p>No European sites were recorded within 500m of south Cambridge and therefore no LSE was considered in relation to non-physical disturbance.</p> <p>There is potential for Option 7 to result in non-physical disturbance to offsite functional habitat used by qualifying barbastelle species of Eversden and Wimpole</p>	<p>No European sites lie within of adjacent to broad areas of proposed growth in Option 7. However, in line with a precautionary approach no LSE can be ruled out in relation to Eversden and Wimpole SAC until spatial growth options are developed further.</p> <p>All other European sites were situated outside of the broad areas of</p>	<p>Option 7 will result in an increase in development within this strategic growth option. This has the potential to result in LSE as a result of air pollution in relation to Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar and Portholme SAC.</p> <p>Further evidence is required to determine the potential impact</p>	<p>Proposed development within Option 7 lies within the zone of potential risk and ZOI of the following sites:</p> <ul style="list-style-type: none"> □ Eversden and Wimpole Woods SAC; □ Wicken Fen Ramsar; and □ Fenland SAC. <p>There is potential for LSE to occur in relation to these European sites as a result of</p>	<p>An increase in development in strategic growth areas proposed within Option 7 have the potential to result in an LSE on Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar and Fenland SAC.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 282		<p>the potential to focus development within the CSZ of this species, which is of key importance for maintaining the viability of populations within the SAC.</p> <p>Due to the distance and dispersal range of its qualifying species, no LSE was considered in relation to physical damage and loss of offsite functional habitat used by qualifying</p>	<p>Woods SAC. This is particularly in areas, which lie within the CSZ.</p> <p>Given the location of proposed development within Option 7 and limited dispersal of qualifying species of Ouse Washes SAC, SPA and Ramsar, no LSE is considered in relation to this site.</p> <p>The remaining European sites lie over 500m from the broad</p>	<p>proposed development and therefore no LSE was considered.</p>	<p>of this option as detailed above.</p>	<p>recreational disturbance.</p>	

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 283		species of the Ouse Washes SAC, SPA and Ramsar. All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered.	location of where development is proposed and was therefore not considered to result in an LSE.				
	Option 8: Expanding a growth area around transport nodes	Option 8 focuses homes at Cambourne and surrounding villages, along the A428 public transport corridor. These areas are to be served by A	Eversden and Wimpole Wood SAC lies within the broad area of proposed development as part of Option 8. However, as there is a commitment that no	Eversden and Wimpole Woods SAC and Ouse Washes SAC, SPA and Ramsar lies within 500m of broad areas of proposed development	Due to the location of Eversden and Wimpole SAC, including areas of offsite functional habitat used by the qualifying species of the European site,	Option 8 will result in an increase in development within this strategic growth option. This has the potential to result in LSE as a result of air pollution in	Proposed development within Option 7 lies within the zone of potential risk and ZOI of the following sites:

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 284	new railway station and Cambridgeshire Autonomous Metro.	<p>development will be permitted within a European site, it can be concluded that Option 8 will not result in a LSE in relation to direct physical damage and loss.</p> <p>In addition to this, there is potential for Option 8 to result in LSE to offsite functional habitat used by barbastelle species of Eversden and Wimpole Woods SAC.</p>	<p>associated with Option 8. Therefore, there is potential for LSE to occur in relation to this site as a result of non-physical disturbance.</p> <p>There is potential for Option 7 to result in non-physical disturbance to offsite functional habitat used by qualifying barbastelle species of Eversden and Wimpole Woods SAC.</p>	<p>in west of Greater Cambridge where proposed growth in Option 8 is to be delivered, there is potential for LSE to occur in relation to non-toxic contamination.</p> <p>All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered.</p>	<p>relation to Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar and Portholme SAC.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Eversden and Wimpole Woods SAC; <input type="checkbox"/> Wicken Fen Ramsar; and <input type="checkbox"/> Fenland SAC. <p>There is potential for LSE to occur in relation to these European sites as a result of recreational disturbance. .</p>	<p>Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar and Fenland SAC.</p> <p>Further evidence is required to determine the potential impact of this option as detailed above.</p>

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
		<p>This option has the potential to focus development within the CSZ of this species, which is of key importance for maintaining the viability of populations within the SAC.</p> <p>Due to the distance and dispersal range of its qualifying species, no LSE was considered in relation to physical damage and loss of offsite functional habitat used by</p>	<p>This is particularly in areas, which lie within the CSZ.</p> <p>Given the location of proposed development within Option 7 and limited dispersal of qualifying species of Ouse Washes SAC, SPA and Ramsar, no LSE is considered in relation to this site.</p> <p>The remaining European sites lie over 500m from the broad location of</p>				

Strategic Spatial Options	Broad Description of Spatial Option	Potential Impacts on European Sites					
		Physical Damage and Loss	Non-physical Disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Page 286		<p>qualifying species of the Ouse Washes SAC, SPA and Ramsar.</p> <p>All other European sites were situated outside of the broad areas of proposed development and therefore no LSE was considered</p>	<p>where development is proposed and was therefore not considered to result in an LSE</p>				

Chapter 4 : Conclusions and Next Steps

4.1 This document has been produced to provide guidance on the likely impacts to European sites that may arise from each Strategic Spatial Option. Due to the high-level nature of the review, it is not possible at this stage to determine, which options are preferred in relation to the HRA.

4.2 A review of each Strategic Spatial Option identified the following potential impacts to European sites for each option as detailed in Table 3.2 above and summarised below.

4.3 Due to the high-level nature of the options presented at this stage, there are no site-specific boundaries provided. Therefore, in line with a precautionary approach where there was any uncertainty in relation to potential impacts to a European site an adverse impact was assumed. It is therefore expected that as proposals are developed further for each option that potential impacts identified at this stage will be refined.

- Option 1: Densification of existing urban areas and Option 2: Edge of Cambridge - outside the Green Belt
 - Physical damage and loss (offsite): Eversden and Wimpole Woods SAC.
 - Non-physical Disturbance: Eversden and Wimpole Woods SAC.
 - Non-Toxic Contamination: Eversden and Wimpole Woods SAC.
 - Air Pollution: Devil's Dyke SAC, Ouse Wash SAC, SPA and Ramsar, Portholme SAC.
 - Recreation: Wicken Fen Ramsar and Fenland SAC.
 - Water Quantity and Quality: Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar, Fenland SAC.
- Option 3: Edge of Cambridge - Green Belt
 - Physical Damage and Loss (offsite): Eversden and Wimpole Woods SAC.
 - Non-physical Disturbance: Eversden and Wimpole Woods SAC.
 - Non-Toxic Contamination: Eversden and Wimpole Woods SAC.
 - Air Pollution: Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar, Portholme SAC.
 - Recreation: Eversden and Wimpole Woods SAC, Devil's Dyke SAC, Wicken Fen Ramsar, Fenland SAC.
 - Water Quantity and Quality: Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar, Fenland SAC.
- Option 4: Dispersal - new settlements, Option 5: Dispersal – villages and Option 6: Public transport corridors
 - Physical Damage and Loss (offsite): Eversden and Wimpole Woods SAC, Ouse Washes SAC, SPA and Ramsar.
 - Non-physical Disturbance: Eversden and Wimpole Woods SAC, Ouse Washes SAC, SPA and Ramsar.
 - Non-Toxic Contamination: Eversden and Wimpole Woods SAC, Ouse Washes SAC, SPA and Ramsar.
 - Air Pollution: Devil's Dyke SAC, Ouse Washes SAC, SPA and Ramsar, Portholme SAC.

- Recreation: Eversden and Wimpole Woods SAC, Devil’s Dyke SAC, Ouse Washes SAC, SPA and Ramsar, Portholme SAC, Wicken Fen Ramsar, Fenland SAC.
- Water Quantity and Quality: Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar, Fenland SAC.

4.4 Option 7: Supporting a high-tech corridor by integrating homes and jobs and Option 8: Expanding a growth area around transport nodes

- Physical Damage and Loss (offsite): Eversden and Wimpole Woods SAC.
- Non-physical Disturbance: Eversden and Wimpole Woods SAC.
- Non-Toxic Contamination: Eversden and Wimpole Woods SAC.
- Air Pollution: Devil’s Dyke SAC, Ouse Washes SAC, SPA and Ramsar, Portholme SAC.
- Recreation: Eversden and Wimpole Woods SAC, Wicken Fen Ramsar, Fenland SAC.
- Water Quantity and Quality: Ouse Washes SAC, SPA and Ramsar, Wicken Fen Ramsar, Chippenham Fen Ramsar, Fenland SAC.

4.5 The review has identified a range of potential impacts for each option. Although, there are a greater number of potential impacts identified in relation some options compared to others, it cannot be assumed that these options will result in a greater level impact overall. This will be dependent on the level of risk and severity of impact to each European site. which will be assessed in more detail as part of the HRA.

Next Steps

4.6 An HRA assessment will be required as the strategic spatial options are developed as part of the plan making process. This will need be informed by relevant evidence base documents, including traffic modelling data, air quality modelling and water cycle study where required.

Appendix A: Summary of Scoping Assumptions

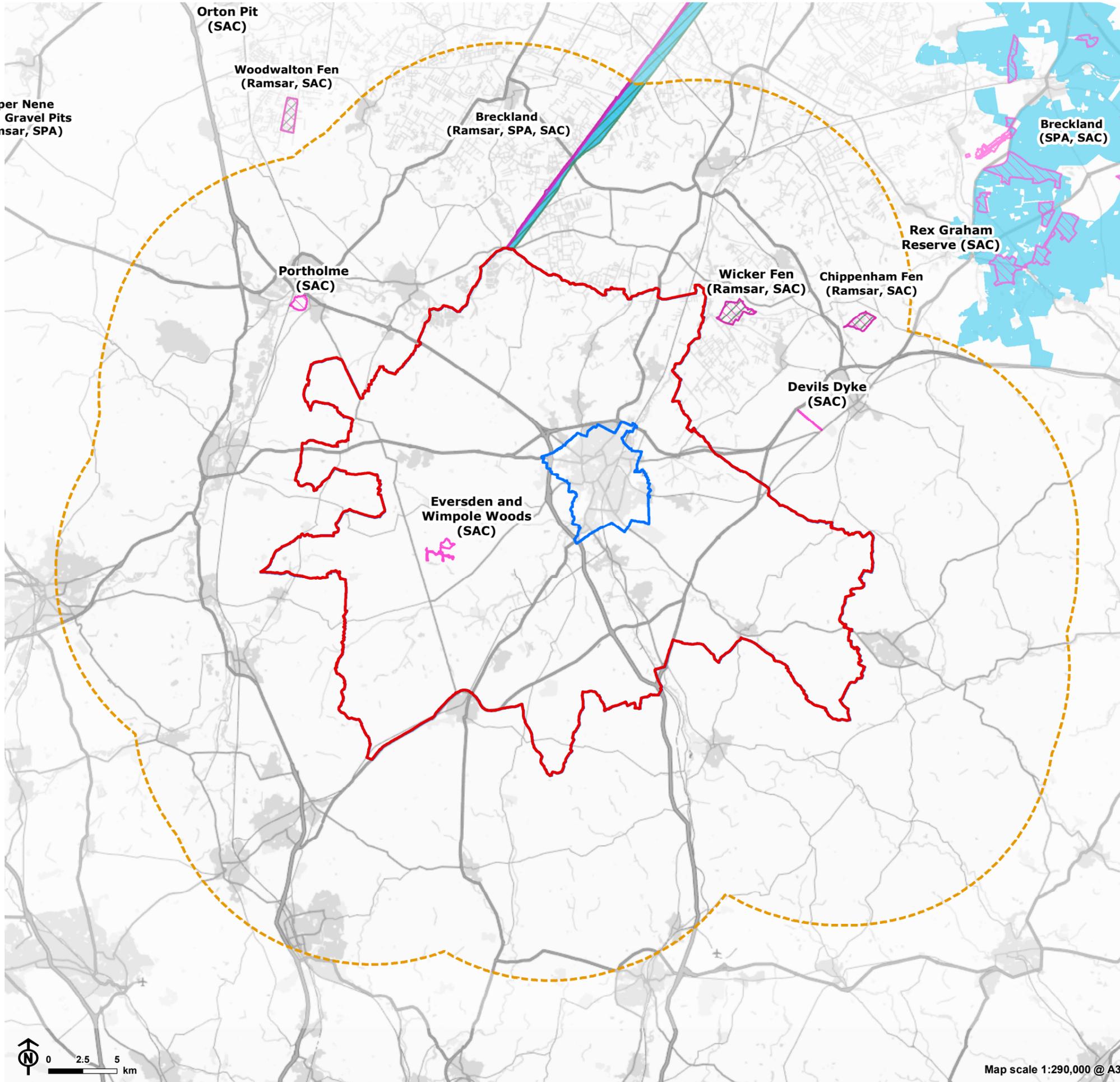
Figure A. 1 Summary of Scoping Assumptions presented in the HRA Scoping report.

	Physical damage/ loss of habitat	Non-physical disturbance	Non-toxic contamination	Air pollution	Recreation pressure	Water quantity and quality
Eversden and Wimpole Woods SAC	Scoped in	Scoped in	Scoped in	Scoped out	Scoped in	Scoped out
Ouse Washes SAC	Scoped in	Scoped out	Scoped in	Scoped in	Scoped in	Scoped in
Portholme SAC	Scoped out	Scoped out	Scoped out	Scoped in	Scoped in	Scoped in
Devils Dyke SAC	Scoped out	Scoped out	Scoped out	Scoped in	Scoped out	Scoped in
Fenland SAC	Scoped out	Scoped out	Scoped out	Scoped in	Scoped in	Scoped in
Ouse Washes SPA	Scoped in	Scoped in	Scoped in	Scoped in	Scoped in	Scoped in
Ouse Washes Ramsar	Scoped in	Scoped in	Scoped in	Scoped in	Scoped in	Scoped in
Wicken Fen Ramsar	Scoped out	Scoped out	Scoped out	Scoped in	Scoped in	Scoped in
Chippenham Fen Ramsar	Scoped out	Scoped out	Scoped out	Scoped in	Scoped out	Scoped in

Appendix B: European Sites within 15km of Greater Cambridge

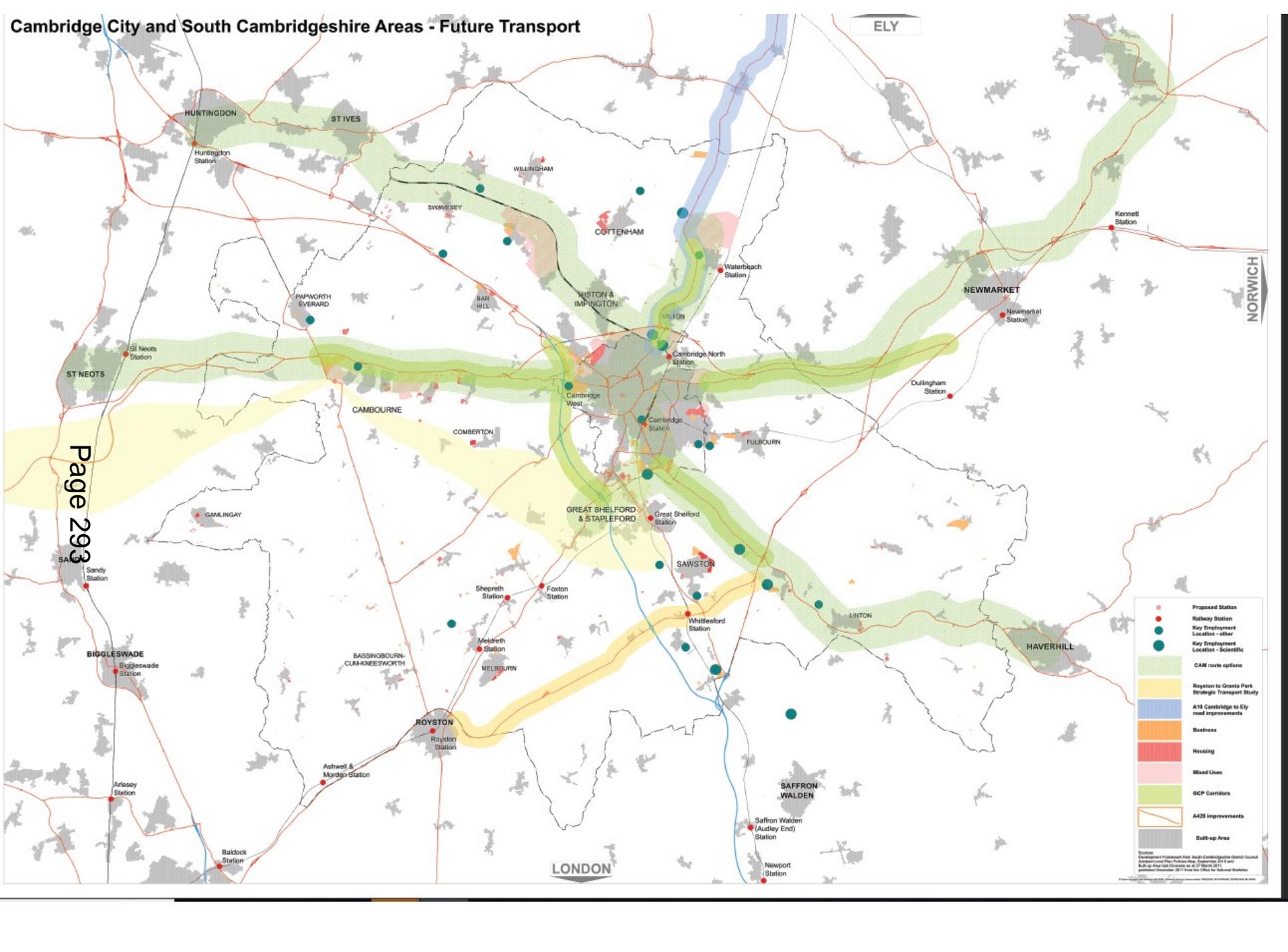
Appendix 1: European Sites within 15km of Greater Cambridge

- South Cambridgeshire
- South Cambridgeshire 15km Buffer Boundary
- Cambridge City
- Cambridge City
- Special Areas of Conservation
- Ramsar Sites
- Special Protection Areas



Appendix C: Potential Future Transport in Cambridge City and South Cambridgeshire Areas

Cambridge City and South Cambridgeshire Areas - Future Transport



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●	Proposed Station
●	Railway Station
●	Key Employment Location - other
●	Key Employment Location - Scientific
	CAM route options
	Royston to Grants Park Strategic Transport Study
	A10 Cambridge to Ely road improvements
	Business
	Housing
	Mixed Uses
	GCP Corridors
	A428 improvements
	Build-up Area

Source: Development Framework for South Cambridgeshire District Council, Cambridge and Park Planning Study, September 2014 and Build-up Area October 2014 to 27 March 2015, published December 2011 from the Office for National Statistics.

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Greater Cambridge Local Plan: Housing and Employment Relationships

Greater Cambridge Shared Planning

November 2020

Prepared by

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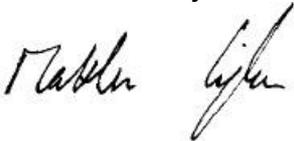
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4	ECONOMIC FORECASTS AND HOUSING GROWTH	36

Quality Standards Control

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it is has been signed by the Originators and approved by a Business or Associate Director.

DATE	ORIGINATORS	APPROVED
November 2020	Paul McColgan Director, Icen Projects	Matt Kinghan Director, Icen Projects
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Limitations

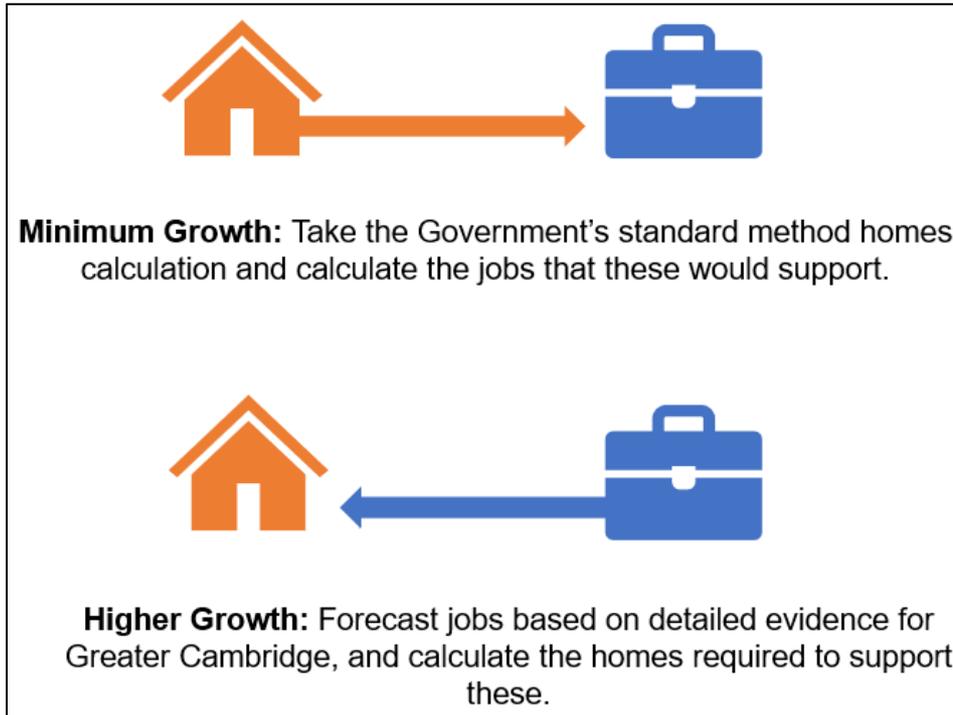
This document has been prepared for the stated objective and should not be used for any other purpose without the prior written authority of GL Hearn; we accept no responsibility or liability for the consequences of this document being used for a purpose other than for which it was commissioned.

1 EXECUTIVE SUMMARY

Introduction

- 1.1 The purpose of this report is twofold. Firstly, to understand the population growth associated with the Standard Method and number of jobs likely to be supported. The Standard Method is a formula set out in the National Planning Policy Framework (NPPF) and associated Planning Practice Guidance (PPG) to provide a figure for the minimum number of homes a local authority is expected to plan for.
- 1.2 Secondly, in the context of the economic growth scenarios provided by the Greater Cambridge Employment Land and Economic Development Evidence Base (ELR), the report considers the expected level of housing required to support those levels of growth.
- 1.3 There are therefore three scenarios considered:
- **Standard Method** – Housing need derived from the Standard Method, converted to population and then employment growth;
 - **Central** – Central growth employment forecast converted to population and housing; and
 - **Higher** – Higher growth employment forecast converted to population and housing.
- 1.4 The approach is designed to provide a consistent understanding of housing and jobs levels to inform the Local Plan process. The figure below summarises the approach taken which is to firstly estimate the number of jobs supported by the Standard Method; and then undertake a 'reverse' analysis where a given level of job growth is worked back to estimate the number of homes required to house the growing workforce. All analysis covers the period from 2020 to 2041.

Figure 1: **Housing and economic growth – methodology summary**



Standard Method, Housing Need and Derived Jobs Growth

- 1.5 In the first part of the report, the housing need calculated by the Government's Standard Method is used to calculate how many jobs might be supported by the population arising. For the period 2020 to 2030 the standard method shows a minimum figure for Greater Cambridge of 1,743 dwellings per annum (dpa). This is split between Cambridge at 658 dpa and South Cambridgeshire at 1,085 dpa.
- 1.6 Housing growth is translated into population growth based on assumptions including improvements to household formation rates (where there is evidence of suppression amongst the younger population) and changes to net migration to ensure all the homes are filled. In doing so the base population at 2020 and final population at 2041 are calculated. Population projections are converted into the number of jobs that could be supported using assumptions about economic activity rates and commuting dynamics in Cambridge City and South Cambridgeshire.
- 1.7 Overall, the analysis suggests that around 2,200 additional jobs could be supported across the Greater Cambridge area each year - being 1,000 in Cambridge and around 1,200 in South Cambridgeshire.

Table 1: Core Outputs, Jobs Supported from Standard Method in Greater Cambridge, 2020-41 – per annum

Area	Homes	Population	Jobs Supported
Cambridge City	658	1,401	1,000
South Cambridgeshire	1,085	2,120	1,180
Greater Cambridge	1,743	3,521	2,179

Source: GL Hearn Analysis of Demographic Projections

Economic Forecasts and Associated Housing Need

- 1.8 Having estimated the number of jobs that might be supported using the Standard Method housing need figure, the next stage of analysis is to consider how many homes might be needed to house the workforce needed to fill the number of jobs suggested by the economic forecasts (taken from the ELR). The method (as noted above) essentially works backwards when compared with the Standard Method - to firstly calculate the labour supply needed and then projecting what overall population (and age structure) might be expected and number of supporting homes – again taking account of commuting dynamics and economic activity rates.
- 1.9 The table below shows the projected housing growth that would be needed to meet each of the two jobs scenarios. Across the whole study area, the analysis suggests that 1,996 homes per annum would be required to support the Central economic scenario, and a higher figure of 2,549 for the Higher scenario. Both of these figures are above the need derived from the Standard Method which is for a minimum of 1,743 homes each year.

Table 2: Projected Housing Growth– range of job growth forecasts

Cambridge City	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	52,515	70,209	17,694	843	868
Higher	52,515	72,098	19,583	933	960
South Cambridgeshire	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	66,514	89,514	23,000	1,095	1,128
Higher	66,514	98,892	32,378	1,542	1,588
Greater Cambridge	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	119,029	159,723	40,694	1,938	1,996
Higher	119,029	170,990	51,960	2,474	2,549

Source: GL Hearn, JGC, CE

- 1.10 The above assumes the same commuting patterns reported in the Census 2011. By way of sensitivity analysis, a further model has been developed for the Central and Higher employment-led scenarios which assume there is a 1:1 relationship between additional jobs (above the 2,179 jobs supported by the (minimum) Standard Method calculations) and additional resident workforce.
- 1.11 Applying this assumption would mean that Greater Cambridge would not be drawing on any additional labour supply from outside Greater Cambridge, above that already assumed to be generated by the Standard Method.
- 1.12 Existing (2011) commuting patterns would expect Greater Cambridge to continue to be a net importer of labour. However, modelling of commuting on a 1:1 basis provides an understanding of the sub-regional housing growth impacts of the Central and Higher employment forecasts, assuming that other districts plan housing delivery on the basis of the Standard Method.
- 1.13 As well as examining the housing impact in Greater Cambridge, the scenario which draws on the Census 2011 commuting patterns (which remains the only comprehensive and robust dataset for commuting patterns available until publication of Census 2021 data) provides an understanding of the number of homes that might need to be provided in locations outside of Greater Cambridge. This will be in order to house the additional labour supply that would be expected to work in Greater Cambridge, under the Central and Higher employment forecasts.
- 1.14 The 1:1 assumption also provides an understanding of the level of housing growth under the Central and Higher employment forecasts that might need to be provided inside and outside of Greater Cambridge. However, in comparison to the 2011 patterns, the 1:1 scenario would reduce the housing growth impact on locations outside of Greater Cambridge, as this scenario would see more homes delivered in Greater Cambridge. This could help reduce longer distance commuting and associated carbon emissions.
- 1.15 Across Greater Cambridge, using the 1:1 ratio for additional jobs shows a housing growth of around 2,110 dpa for the Central economic scenario and 2,690 dpa under

the higher scenario. This compares to 1,996 and 2,549 dpa respectively in the Central and higher growth scenario (+114 and +141 dpa respectively) using the Census 2011-based modelling assumptions.

- 1.16 It is therefore estimated that up to 141 dpa would have to be provided in areas outside of Greater Cambridge to house the additional Greater Cambridge workforce if commuting remained unchanged. It is assumed that this additional demand for housing is likely to arise in those areas with the strongest commuting patterns with Greater Cambridge at present i.e. East Cambridgeshire (22%) and Huntingdonshire (19%)

Summary

- 1.17 The table below provides an overall summary of the Standard Method, Central and Higher scenarios in terms of the total housing and jobs for the period 2020 to 2041 – figures are rounded to the nearest hundred. In all cases these are based on 2011 commuting patterns.
- 1.18 This shows the Standard Method would require a minimum of 36,600 dwellings to be provided and that this would support 45,800 jobs. At the other end of the scale, the Higher economic forecast would see 78,700 additional jobs (from 2020) and would require provision of 53,500 dwellings to provide sufficient housing for the growing workforce.

Table 3: Forecast jobs and estimated housing growth for different scenarios – Greater Cambridge (2020-41) – 2011 commuting patterns

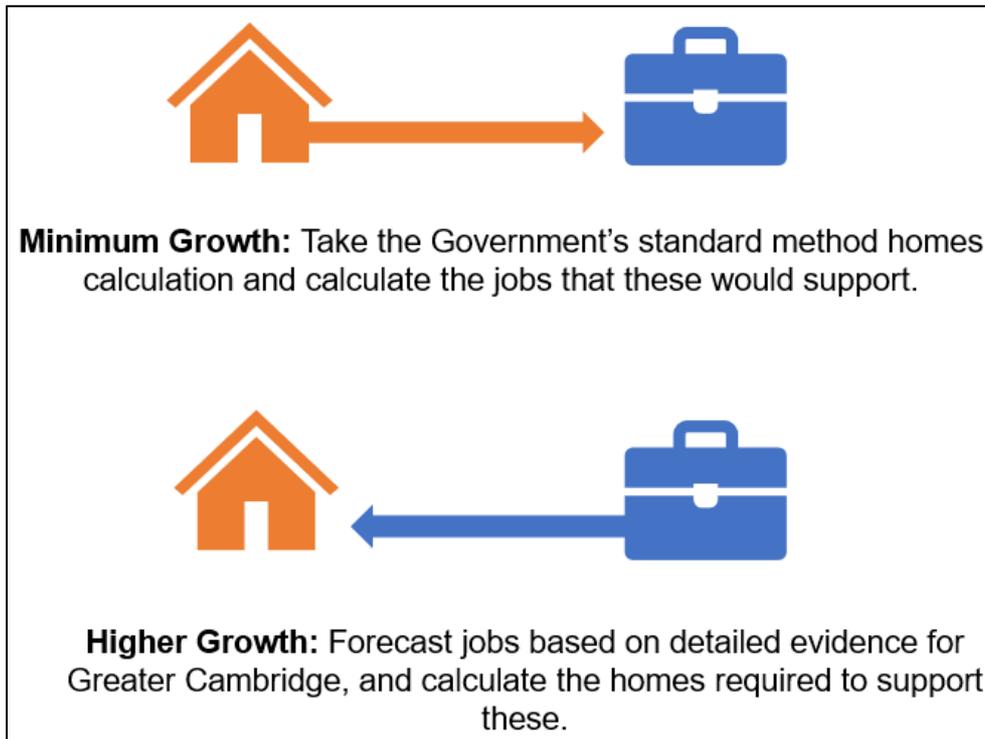
Scenario	Employment (jobs)	Housing (dwellings)
Standard Method	45,800	36,600
Central	58,400	41,900
Higher	78,700	53,500

Source: GL Hearn, JGC, CE

2 INTRODUCTION

- 2.1 The purpose of this report is twofold. Firstly, to understand the population growth associated with the Standard Method and number of jobs likely to be supported. The Standard Method is a formula set out in the National Planning Policy Framework (NPPF) and associated Planning Practice Guidance (PPG) to provide a figure for the minimum number of homes a local authority is expected to plan for.
- 2.2 Secondly, in the context of the economic growth scenarios provided by the Greater Cambridge Employment Land and Economic Development Evidence Base (ELR), the report considers the expected level of housing required to support those levels of growth.
- 2.3 There are therefore three scenarios considered:
- **Standard Method** – Housing need derived from the Standard Method, converted to population and then employment growth;
 - **Central** – Central growth employment forecast converted to population and housing; and
 - **Higher** – Higher growth employment forecast converted to population and housing.
- 2.4 The analysis is designed to provide a consistent understanding of housing and jobs levels to inform the Local Plan process. The figure below summarises the approach taken which is to firstly estimate the number of jobs supported by the Standard Method and then undertake a ‘reverse’ analysis where a given level of job growth is worked back to estimate the number of homes required to house the growing workforce. All analysis covers the period from 2020 to 2041.

Figure 2: **Housing and economic growth – methodology summary**



- 2.5 In terms of the NPPF and PPG the following summarises the relevant advice and the factors that could indicate that a housing number in excess of the standard method could be considered:
- 2.6 **Standard Method** – ‘To determine the minimum number of homes needed, strategic policies should be informed by a local housing need assessment, conducted using the standard method in national planning guidance’ (NPPF, paragraph 60).
- 2.7 The PPG (Housing and economic needs assessment section) sets out a three step standard method for assessing housing need using household projection for the next 10 years (step 1), adjusts this based on local affordability (step 2) but caps the need to ensure deliverability (step 3).
- 2.8 **Higher Growth (economy)** – ‘Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth’ (NPPF, paragraph 80).
- 2.9 **Planning Practice Guidance** – ‘The standard method for assessing local housing need provides a minimum starting point in determining the number of homes needed

in an area. It does not attempt to predict the impact that future government policies, changing economic circumstances or other factors might have on demographic behaviour. Therefore, there will be circumstances where it is appropriate to consider whether actual housing need is higher than the standard method indicates. Circumstances where this may be appropriate include, but are not limited to situations where increases in housing need are likely to exceed past trends because of:

- growth strategies for the area that are likely to be deliverable, for example where funding is in place to promote and facilitate additional growth (e.g. Housing Deals);
- Strategic infrastructure improvements that are likely to drive an increase in the homes needed locally (PPG, paragraph 2a-010).

2.10 It is therefore clear in both the NPPF and PPG that the Standard Method is a minimum starting point and that economic growth can be considered as a potential consideration for providing more homes.

2.11 Finally, it is worth noting that paragraph 15 of the PPG (Ref: 2a-015) notes that:

“Where a strategic policy-making authority can show that an alternative approach identifies a need higher than using the standard method, and that it adequately reflects current and future demographic trends and market signals, the approach can be considered sound as it will have exceeded the minimum starting point.”

3 STANDARD METHOD HOUSING NEED AND DERIVED JOBS GROWTH

Introduction

3.1 This section identifies the Standard Method housing need figure – set out by government as the minimum number of homes needed in the area – and the jobs growth that would be supported by this figure for the plan period 2020-41. As set out in the introduction, the reason for identifying the number of jobs that the minimum housing need would support is to inform the Councils’ consideration of whether there may be circumstances indicating that a higher level of jobs and homes provision would be appropriate (as per the PPG)¹. The section includes the following:

- Identifying the standard method homes
- Developing a population projection based on the standard method, including considering the population starting point and the population increase
- Translating the population to jobs

Standard Method Housing Need

3.2 The first step for moving from housing to jobs is to identify the Standard Method housing need. The methodology used in this report responds to the NPPF (2019) which sets out the Government’s objective to significantly boost housing supply, and the current PPG. Chapter 5 of the NPPF (2019) relates to delivering a sufficient supply of homes, with Paragraph 60 setting out that “*to determine the minimum number of homes needed, strategic policies should be informed by a local housing need assessment, conducted using the standard method*”. This is the purpose of this element of the Study.

3.3 Paragraph 61 of the NPPF (2019) writes that “within this context, the size, type and tenure of housing needed for different groups in the community should be assessed”. It adds that specific groups include but are not limited to “those who require affordable housing, families with children, older people, students, people with disabilities, service families, travellers, people who rent their homes and people wishing to commission or build their own homes”. GL Hearn have undertaken this task in a separate study, using a methodology consistent with the approach for overall housing need set out below. To be clear, this study addresses the overall

¹ <https://www.gov.uk/guidance/housing-and-economic-development-needs-assessments>

quantum of homes with the separate study breaking this down into the various specific groups within the population.

3.4 The Planning Practice Guidance on *Housing & economic needs assessments* requires that housing need be assessed using the government's Standard Methodology. The Standard Methodology seeks to simplify the approach to housing need and has three components:

- Starting Point or Baseline;
- Affordability/Market Signals Adjustment; and
- Cap to ensure deliverability.

3.5 The starting point or demographic baseline continues to be the government's national 2014-based household projections as stated in the PPG², at the time of writing.

3.6 The baseline household growth is then modified to account for affordability. Specifically, Step 2 uses a formula which draws on the local median price of homes relative to median workplace earnings. This data is published annually by the DCLG with the most recent data from 2019³.

3.7 To ensure that the proposed level of housing is as deliverable as possible, the standard method includes a cap at 40% above the housing target in adopted local plans where these plans are less than 5 years old. Where local plans are older than five years then the Local Housing Need (LHN) is capped 40% above the higher of either the baseline growth from official projections or the annual housing requirement figure currently set out in their local plan.

3.8 Our approach below sets out the standard method for Greater Cambridge using the three-step approach as set out in the PPG.

Step 1 – Setting the baseline

3.9 Step 1 sets the baseline using national household growth projections (2014-based household projections). The PPG advises that “the projected average annual

² Housing and economic needs assessment Paragraph: 004 Reference ID: 2a-004-20190220, Step 1, available at: <https://www.gov.uk/guidance/housing-and-economic-development-needs-assessments> (Revision date: 20 February 2019)

³ Available at:

<https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/ratioofhousepricetoworkplacebasedearningslowerquartileandmedian> (Released 19 March 2020)

household growth over 10 years (this should be 10 consecutive years, with the current year being the first year)” should be used.

- 3.10 Household projections (2014-based) are presented in the table below. The calculations have been made separately for Cambridge and South Cambridgeshire and are then combined to show the Greater Cambridge change. These show a total household growth of 12,220 over the next ten years which is annualised to 1,222 – of which 797 per annum is in South Cambridgeshire and 425 in Cambridge.

Table 4: LHN Step 1 - Household Change, 2020-30

Local Authority	Households 2020	Households 2030	Average Annual Change (Step 1)
Cambridge	51,530	55,783	425
South Cambridgeshire	67,872	75,839	797
Greater Cambridge	119,402	131,622	1,222

Source: ONS, 2014-based household projections

Step 2 – An adjustment to take account of affordability

- 3.11 Step 2 then adjusts the average annual projected household growth figure (as calculated in Step 1) based on the relative affordability of housing within each area. This draws on the most recent median workplace-based affordability ratios, namely the 2019 affordability ratios.
- 3.12 For every percentage point the median workplace based affordability ratio is above 4, the household projections are increased by 0.25%. Four is seen by the PPG as a reasonable multiple based on standard mortgage lending practices. The formula included in the PPG for how the adjustment is calculated is as below:

$$Adjustment\ factor = \left(\frac{Local\ affordability\ ratio - 4}{4} \right) \times 0.25$$

- 3.13 The table below presents the affordability ratio and the adjustment factor for both local planning authorities together with the resultant uncapped need. The affordability ratio is 12.76 in Cambridge and 9.78 in South Cambridgeshire. This results in an increase of 55% and 36% respectively.

Table 5: LHN Step 2 – Affordability Adjustment Factor

Local Authority	Average Annual Change (Step 1)	Affordability Ratio 2019	Adjustment Factor	LHN Uncapped (Step 2)
Cambridge	425	12.76	155%	658
South Cambridgeshire	797	9.78	136%	1,085
Greater Cambridge	1,222			1,743

Source: ONS, MHCLG

- 3.14 The affordability adjustment increases the need by 521 additional dwellings per annum to arrive at an uncapped need of 1,743 dpa. The largest need is in South Cambridgeshire (1,085 dpa) with the remainder in the City (658 dpa).

Step 3 – Capping the level of any increase

- 3.15 The third step of the standard method is to cap the level of increase to help ensure that the minimum local housing need figure is as deliverable as possible. The cap comes in the form of a 40% cap. However, what figure the cap is placed on depends on the age of the Local Plan and the housing target within it.

- Where the Local Plan is adopted within the last 5 years (at the point of making the calculation), the local housing needs figure is capped at 40% above the existing housing target.
- Where the Local Plan was adopted more than 5 years ago (or is non-existent) then the cap is placed at 40% above the higher of either the existing housing target or the household forecasts set out in step 1.

- 3.16 Cambridge and South Cambridgeshire Local Plans 2018 have been adopted within the last 5 years. The cap is therefore calculated as 40% above the housing targets in those plans. In both cases, the outcome of Step 2 is lower than the capped figure (local plan target plus 40%). Therefore, regardless of the date of adoption of the local plan, the capping in this case does not impact the level of housing need in Cambridge or South Cambridgeshire.

- 3.17 The table below summarises the age of the current Local Plan across both authorities as well as their housing targets, and the figures involved in considering a cap.

Table 6: LHN Step 3

Local Authority	Average Annual HH Change (Step 1)	Un-capped LHN (Step 2)	Current Local Plan Adoption Date	Local Plan Housing Target	Capped Figure (Local Plan Housing Target +40%)	LHN (Step 3)
Cambridge	425	658	18/10/2018 (<5 Years)	700	980	658
South Cambridgeshire	797	1,085	27/09/2018 (<5 Years)	975	1,365	1,085
Greater Cambridge	1,222	1,743		1,675	2,345	1,743

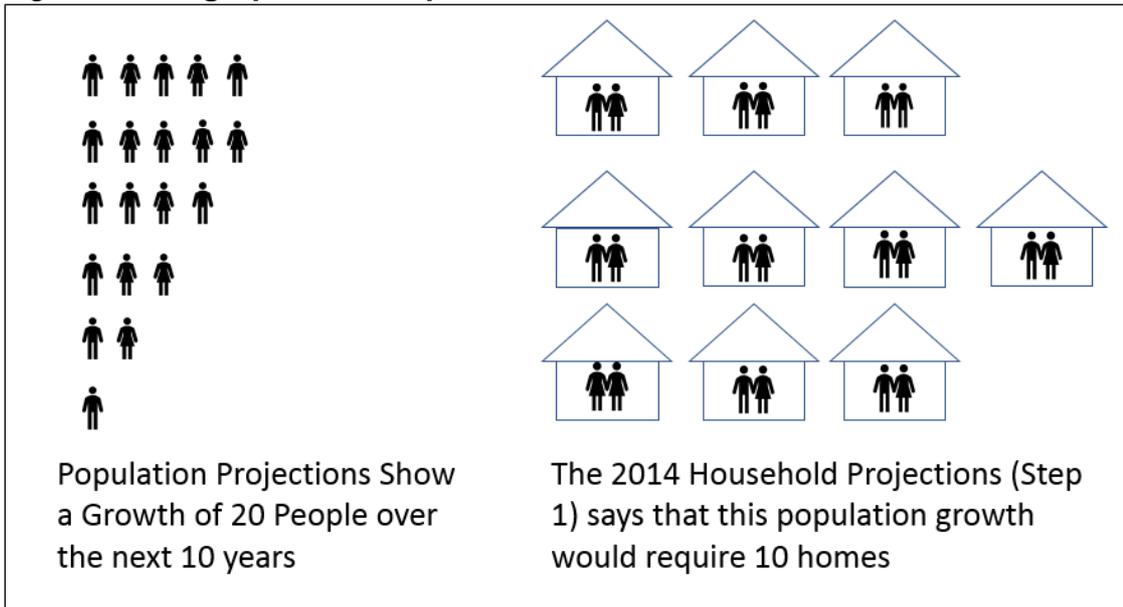
Source: GL Hearn Analysis

- 3.18 **The minimum figure for Greater Cambridge under the standard method is therefore 1,743 dpa.** As per Step 2, the largest housing need is in South Cambridgeshire (1,085 dpa) and the remainder in Cambridge (658 dpa).
- 3.19 Although not interrogated in detail within this report it should be noted that there are concerns with some recent data from the Office for National Statistics (ONS) regarding mid-year population estimates (MYE – discussed below) and the impact this has on projections – this is particularly the case in Cambridge.
- 3.20 However, it should be remembered that the basic data for establishing household growth uses an old (2014-based) set of projections; these older projections are likely to be more robust than more recent data (2016- and 2018-based figures) as they rely on longer term trends which are less prone to fluctuations.
- 3.21 This conclusion is also reached as the main problem with the ONS MYE data for Cambridge can in part be linked to ONS changing its methodology looking at migration – these revisions seem to have a particular impact on areas with high student populations and were brought in for data from 2016 onwards. As a result, the 2014-based projections are less affected by the potential issues with recent MYE data releases.

Developing a Baseline and Population Projection linked to the Standard Method

- 3.22 As set out above, the Standard Method would lead to a housing need of 1,743 dwellings per annum based on a household growth of 1,222 per annum. This equates to an increase of 521 dwellings above the official projections. To understand the jobs that could be supported by this it is first necessary to translate this level of dwelling growth into a population projection.
- 3.23 In creating this population projection, it is necessary to extend the period examined from the ten-year period assessed in Step 1 (2020-30) up to 2041 to allow for the full Local Plan period. As set out in the PPG (2a-012) the standard method figure can be applied to the whole Plan period.
- 3.24 The PPG also states that the standard method takes account of historic backlog before the date the Standard Method was calculated – in this case 2020. Essentially, the PPG considers that the affordability uplift will deal with any issues of past under-delivery of housing. PPG (2a-011) states that *'The affordability adjustment is applied to take account of past under-delivery. The standard method identifies the minimum uplift that will be required and therefore it is not a requirement to specifically address under delivery separately'*.
- 3.25 The start point of the population projections also needs to align with the current year (also the start date of the Greater Cambridge Plan). For this, we have assumed a modelled level of population and household growth from published data sources based on completions – in other words, for years (2019-20) where no population estimates have been published the modelling considers what level of population growth might have been supported by the number of additional homes provided (population data, as discussed below, is currently published up to mid-2019).
- 3.26 The 2014-based household projections are used as the starting point (Step 1) of the standard method and these are based on the 2014-based subnational population projections (SNPP) (see Figure below).

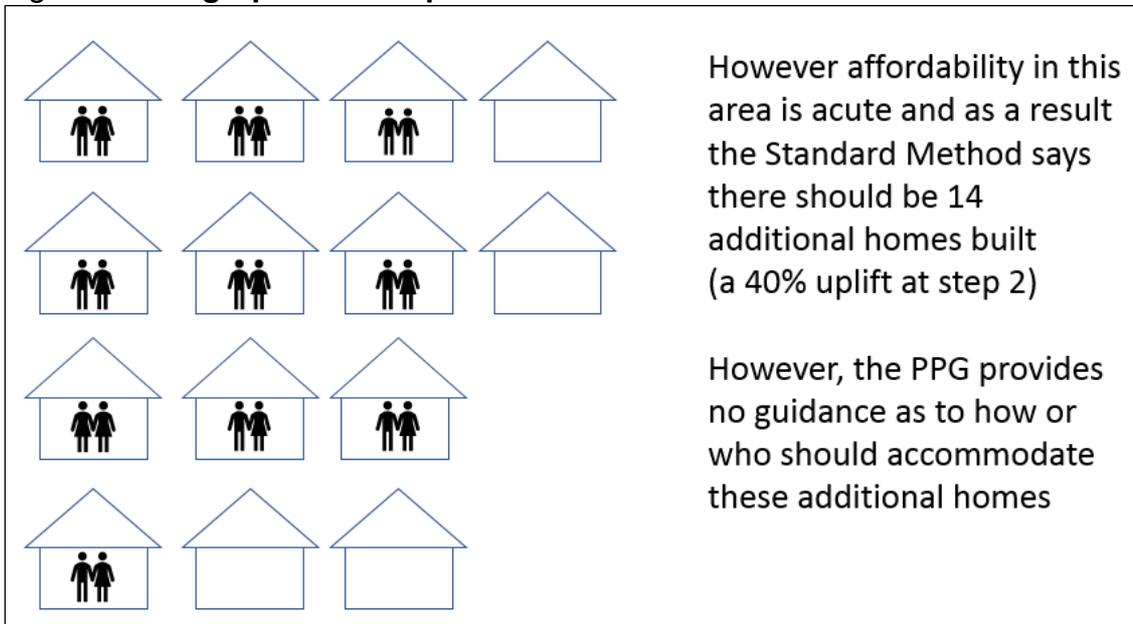
Figure 3: Infographic on Step 1 of the Standard Method



Source: GL Hearn

- 3.27 As set out earlier Step 2 results in a significant increase in housing need above the household projections. However, the PPG does not provide any indication of how and by whom these additional 521 homes are to be occupied.

Figure 4: Infographic on Step 2 of the Standard Method



Source: GL Hearn (N.B. the 40% uplift is an example. In this case for Cambridge the uplift is 55% and in South Cambridgeshire 36%)

3.28 How these additional homes are occupied is crucial for assessing population growth. Paragraph 6 of the PPG indicates how the MHCLG think these homes should be occupied (assuming they are to be occupied):

“An affordability adjustment is applied as household growth on its own is insufficient as an indicator of future housing need because:

- *household formation is constrained to the supply of available properties – new households cannot form if there is nowhere for them to live; and*
- *people may want to live in an area in which they do not reside currently, for example, to be near to work, but be unable to find appropriate accommodation that they can afford.*

The affordability adjustment is applied in order to ensure that the standard method for assessing local housing need responds to price signals and is consistent with the policy objective of significantly boosting the supply of homes. The specific adjustment in this guidance is set at a level to ensure that minimum annual housing need starts to address the affordability of homes.”

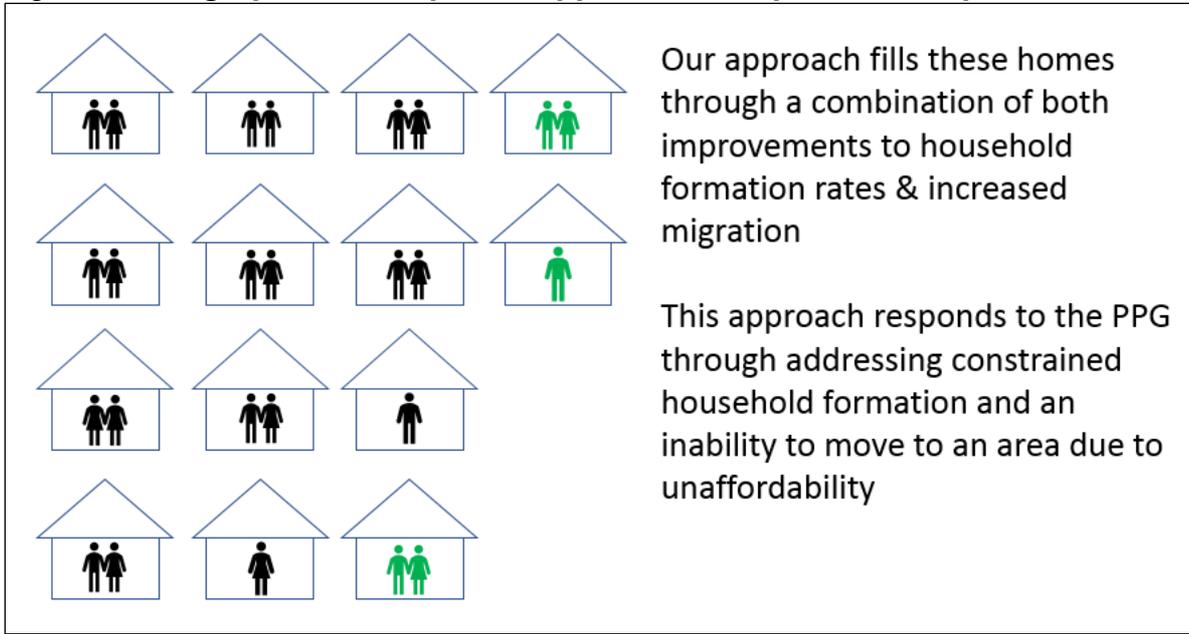
3.29 In essence, Step 2 is a response to worsening affordability which has reduced household formation rates (HFR) and reduced migration. However, the PPG does not guide as to the balance of these adjustments to the factors identified.

3.30 If it is assumed that the adjustment fills these homes with just the indigenous population, who previously were unable to form new households, this would result in unprecedented levels of household formation. This would result in greatly reduced household sizes i.e. very many single person households. However, there is no indication that households would split this far.

3.31 If it is assumed that all the homes are to be filled just with increased migration this would not allow for improvements to local household formation rates (HFR). There is also an issue in that by drawing a population from another area this would result in a decreased need in the area they have moved from. However, the standard method does not reflect this logic and that potential issue remains unresolved.

- 3.32 As set out in the figure below our approach is to make reasonable adjustments (improvements) to household formation rates with the remainder occupied by further in-migration.
- 3.33 The adjustments to HFRs essentially recognises and responds to the suppression of household formation for younger people (aged up to 44). Specifically, the fact that this group have not formed at the same sort of rate as has been observed historically and therefore an increased rate of formation would help to deal with this suppression (i.e. providing more homes to allow households in this age group to access their own independent accommodation).
- 3.34 For this approach to HFR, a scenario has been derived which is mid-way between those HFR in the 2014-based projections and the HFR in the pre-recession 2008-based projections. This approach is normally called 'part-return-to-trend' and has been widely used (and accepted by planning inspectors) in assessments of this nature in the past. Additionally, the 'part-return-to-trend' approach was supported by the Local Plans Expert Group (LPEG)⁴.

Figure 5: Infographic on Proposed Approach to Population Outputs



Source: GL Hearn

- 3.35 Once HFR have been adjusted, the model increases the population growth to fill the remaining dwellings. This is achieved through increases to in-migration and

⁴ <https://www.gov.uk/government/publications/local-plans-expert-group-report-to-the-secretary-of-state>

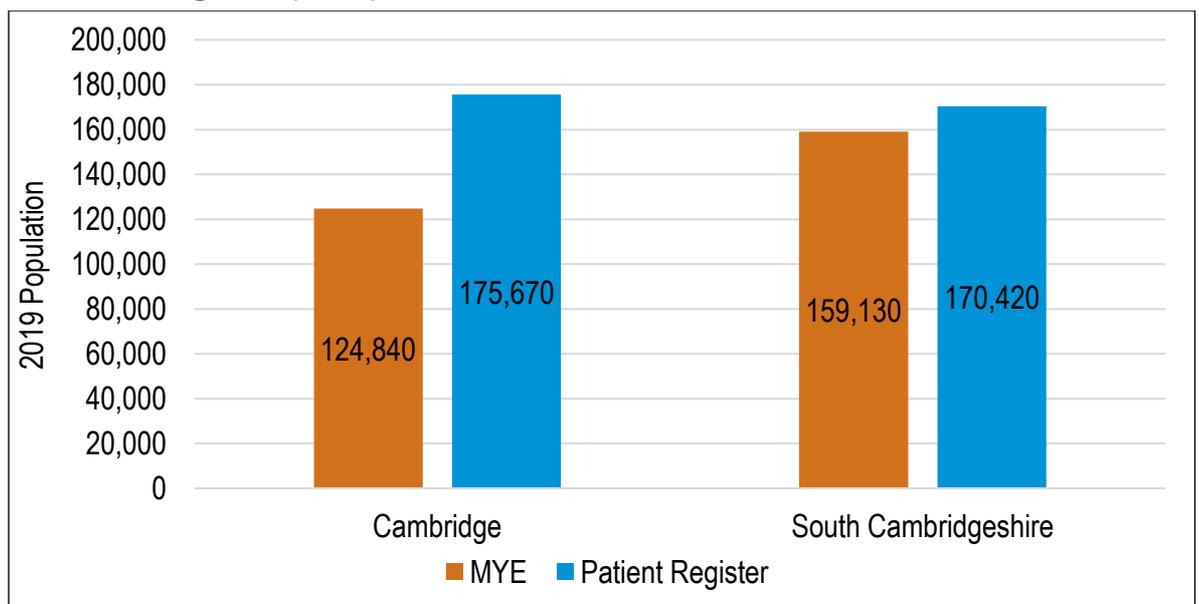
reductions to out migration. This adjustment is in response to the possibility that some households who would like to live in Greater Cambridge cannot afford to do so. From this population growth we can also create an age profile to 2041 from which a range of further analysis can be undertaken.

Population Starting Point

3.36 Beyond understanding the population change 2020-41, there is a more immediate issue, that being the latest available published population estimate (2019) and the need to use this as a base. This is because there are concerns with ONS' 2019 mid-year population estimates for Cambridge, potentially as a result of student-related issues (see paragraph 3.21).

3.37 To examine this, we have firstly reviewed the difference between the Mid-Year Population Estimates (MYE) by ONS and the NHS Patient Register. As presented in the graph below in Cambridge the Patient Register at 2019 is 41% higher than the MYE, this is a difference of 51,000 people. For South Cambridgeshire, the difference in estimates is around 7% (11,000 people), and whilst arguably a notable finding, this sort of difference is fairly normal when studying these datasets across the region and nationally. For Cambridge, the differences are however substantial.

Figure 6: **Population Change Comparison, Mid-Year Estimates & Patient Register (2019)**



Source: ONS

- 3.38 To examine which of these is the most accurate we have gone back to the 2011 Census which is likely to provide a more accurate assessment of population than either the MYE or the Patient Register. We have also examined the change from 2011-2019 between the two sources. In the City for the 2011-19 period, there was a difference of 28% (the Patient Register suggesting that population had grown by 30% compared with a 2% growth suggested by the MYE). The equivalent difference between ONS and Patient Register data for England is 3% and for the East of England 4%, see table below.
- 3.39 The margin of error is likely to be lower at larger geographic areas, as there are proportionally fewer inter-regional and international moves. In both the regional (62%) and national (64%) case, the growth in the MYE 2011-19 is around two-thirds of that of the Patient Register.
- 3.40 Notwithstanding the different starting points, the analysis shows a very moderate MYE change between 2011-19, in Cambridge (+2,100) compared to the Patient Register (+40,800). This raises concerns about data accuracy in one or both of these sources.

Table 7: Comparing ONS mid-year population estimates with the Patient Register Change

	2011	2019	Change	% change
MYE - Cambridge	122,720	124,840	2,120	1.7%
Patient Register - Cambridge	134,900	175,670	40,770	30.2%
MYE – South Cambs	149,860	159,130	9,270	6.2%
Patient Register – South Cambs	152,610	170,420	17,810	11.7%
MYE – East Region	5,862,420	6,236,090	373,670	6.4%
Patient Register -East Region	6,026,910	6,632,570	605,660	10.0%
MYE - England	53,107,200	56,286,990	3,179,790	6.0%
Patient Register - England	55,312,750	60,288,290	4,975,540	9.0%

Source: ONS

- 3.41 It would be unrealistic for the housing growth in the City to result in the population growth shown in the Patient Register. The number of net completions in the 2011-19 period (6,929 dwellings⁵) would not be expected to have supported population growth of 40,770 people as this would have equated to over 6 persons per dwelling.

⁵ Taken from Figure 1 of Greater Cambridge Housing Trajectory and Five Year Housing Land Supply (April 2020)

Equally it would have been expected to have supported far more than just 2,000 (as in the MYE).

- 3.42 The high level of population growth in the Patient Register could in part be explained by students registering and then failing to deregister once they move out of the area after graduation. This results in an overestimation of the population in the area.
- 3.43 Overall, in the case of Cambridge, it is considered that the MYE is likely to underestimate the number of residents, with the Patient Register over-estimating. Therefore, some correction of the figures is reasonable. None of the ONS data separately shows students and so inferences can only be made by looking at the age structure.
- 3.44 By making amendments to the baseline population (and its age structure) it is expected that the number of students in the population will be realistic, as will any forward projections using a revised base position. In terms of other elements of analysis (such as communal accommodation) it is considered that projections will remain reasonable as baseline data for this comes from the 2011 Census data which has not been heavily questioned.
- 3.45 In this context, it would seem reasonable to conclude that the population is probably somewhere between the two estimates. To provide a more realistic baseline population from which to project change, we have created a model which:
- Accepts that the 2011 MYE is accurate as it is largely based on the 2011 Census data.
 - Takes an average of the MYE population growth and around two-thirds of the Patient Register growth to represent a reasonable level of population change since 2011. This proportion of Patient Register is used to reflect the difference in growth between it and ONS MYE data at the regional and national levels.
 - The initial analysis gives an estimated population in 2019. This is then rolled forward to 2020 using a combination of data about completions, projections, and past trends.
 - The analysis also takes account (in the same way) of the age structure changes.
- 3.46 The following table presents the starting point estimation. As shown the modelled estimate for Greater Cambridge is around 13,300 higher than the MYE for 2019

(4.7% higher) and is increased by around another 3,900 over the following year to get to the 2020 starting point.

Table 8: Starting Point Population

	MYE 2019	Patient Register 2019	Modelled 2019	GLH 2020
Cambridge	124,840	175,670	137,029	138,896
South Cambridgeshire	159,130	170,420	160,283	162,357
Greater Cambridge	283,970	346,090	297,312	301,253

Source: Derived from ONS data

- 3.47 The larger divergence from the MYE in Cambridge (+10%) in comparison to South Cambridgeshire (+1%) demonstrates that these issues are largely focussed in the City. Work undertaken in a wider housing needs assessment for Cambridgeshire and West Suffolk uses the same methodology.

Future Population Growth

- 3.48 To identify the jobs that would be supported by the standard method level of housing, we are required to build a bespoke population projection which is constrained to 1,743 dwellings per annum, identified in paragraph 3.19 above.
- 3.49 Although the growth is constrained to the annual housing growth of 1,743 dwellings these are assumed to be occupied by 1,692 households per annum. This is because a 3% vacancy rate is assumed in the housing stock, such an allowance is standard for this type of analysis ($1,743/1.03 = 1,692$)
- 3.50 To generate a population growth the model uses the following assumptions:
- Using the starting point population as set out in Table 8 above (and an associated age structure) (see paragraphs 3.36 to 3.47) and adjust this by:
 - Applying baseline fertility and mortality assumptions from the 2018-based SNPP as we need to include an assessment of natural change. The 2018-based SNPP have been used as they reflect ONS most recent views and data on mortality and fertility;
 - Applying adjusted migration assumptions, by reducing out-migration and increasing in- migration in equal measures, to a point where there is sufficient population for the 1,692 households once the adjusted household formation rates are applied.
 - Applying adjusted household formation rates (HFRs) using a midpoint between the 2008-based and 2014-based household projections. (see

paragraphs 3.28 to 3.35 for further information about the rationale for such adjustments)

3.51 The table below shows the resultant projected population change across the two local authorities as well as an aggregated figure for Greater Cambridge. The projected change in population is around 73,900 people; a 24.5% increase across Greater Cambridge.

Table 9: Population change 2020-2041 by each local authority

	2020	2041	Change	% change
Cambridge	138,896	168,319	29,423	21.2%
South Cambridgeshire	162,357	206,876	44,520	27.4%
Greater Cambridge	301,253	375,195	73,943	24.5%

Source: GL Hearn Modelling based on ONS data

Translating Population into Employment (jobs supported by the Standard Method)

3.52 The next stage of the assessment considers the link between housing/population growth and economic growth – considering what level of job growth the Standard Method projections might support.

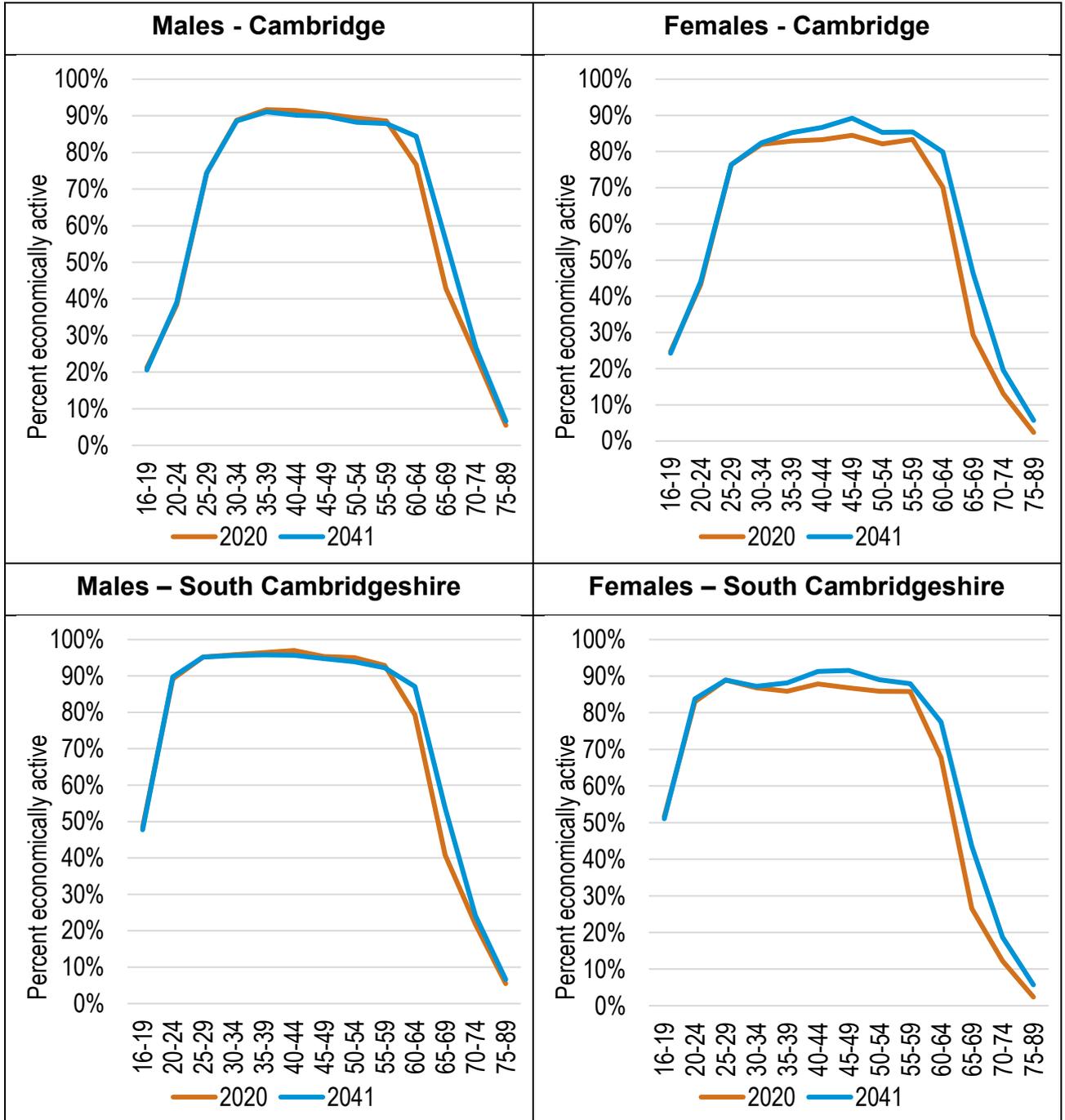
3.53 To look at estimates of the job growth to be supported by the population change associated with the Standard Method homes figure, a series of stages are undertaken. These can be summarised as:

- **Growth in Resident Labour Supply** – By estimating the economically active population element of the population change;
- **Commuting Patterns** – Recognising that not all economically active residents will work in Greater Cambridge, nor will all jobs be taken up by those who live in Greater Cambridge;
- **Double Jobbing** – Recognising the fact that some people have more than one job;
- **Unemployment** – Recognising potential changes to unemployment and how this might support more jobs without impacting the population if unemployment is reduced and vice versa.

Growth in Resident Labour-Supply

- 3.54 The approach taken in this report applies a series of age and sex specific economic activity rates to the overall population growth identified above and use these to estimate how many people in the population will be economically active as projections develop (over the 2020-41 period). This is a fairly common approach for such calculations with data being drawn in this instance from the Office for Budget Responsibility (OBR) – July 2018 (Fiscal Sustainability Report).
- 3.55 The figure and table below show the assumptions made. The analysis shows that the main changes to economic activity rates are projected to be in the 60-69 age groups – this will to a considerable degree link to changes to pensionable age, as well as general trends in the number of older people working for longer (which in itself is linked to general reductions in pension provision).

Figure 7: Projected changes to economic activity rates (2020 and 2041)



Source: GLH / JGC - Based on OBR and Census (2011) data

3.56 Working through an analysis of age and sex specific economic activity rates it is possible to estimate the overall change in the number of economically active people in the study area – this is set out in the table below. The analysis shows that there would be a notable increase in the economically active population in both areas with

a potential increase of 37,400 economically active residents (a 23% increase over 21-years).

Table 10: Estimated change to the economically active population (2020-41) – linked to Standard Method housing delivery

	Economically active (2020)	Economically active (2041)	Total change in economically active
Cambridge	72,057	84,481	12,424
South Cambridgeshire	90,122	115,119	24,997
Greater Cambridge	162,179	199,600	37,420

Source: GLH / JGC - Derived from demographic projections

3.57 To provide some context to these figures, the table below shows the overall population and population change in each area over this period (i.e. the population of all ages). For the whole study area, the population is projected to increase by 73,900 people, and therefore the increase in the number who are economically active represents 51% of all growth.

Table 11: Estimated change to the population (2020-41) – linked to Standard Method housing delivery

	Population (2020)	Population (2041)	Total change in population
Cambridge	138,896	168,319	29,423
South Cambridgeshire	162,357	206,876	44,520
Greater Cambridge	301,253	375,195	73,943

Source: GLH / JGC - Derived from demographic projections

Linking Changes to Resident Labour Supply and Job Growth

3.58 The analysis above has set out potential scenarios for the change in the number of people who are economically active associated with the standard method homes. However, the next step is to convert this information into an estimate of the number of jobs in Greater Cambridge this number of economically active residents would support. The number of jobs will differ depending on three main factors:

- Commuting patterns – where an area sees more people out-commute for work than in-commute it may result in fewer jobs being supported locally than the increase in the economically active population would suggest (and vice versa where there is net in-commuting);

- Double jobbing – some people hold down more than one job and therefore the number of jobs supported will be slightly higher than the increase in economically active population; and
- Unemployment – if unemployment were to fall then the increase in economically active population would support a greater number of jobs (and vice versa).

Commuting Patterns

- 3.59 The table below shows summary data about commuting to and from Cambridge and South Cambridgeshire from the 2011 Census. Overall, the data shows that South Cambridgeshire sees a small level of net out-commuting for work with the number of people resident in the area who are working (regardless of where they work) being about 6.3% higher than the total number who work in the area (and may or may not live in the area).
- 3.60 For Cambridge there is a significant level of net in-commuting. This can be seen from the commuting ratio in the final row of the table and is calculated as the number of people living in an area (and working) divided by the number of people working in the area (regardless of where they live).
- 3.61 For the whole of Greater Cambridge there is also a notable level of commuting between the two local authority areas (around 23,400 people commute from South Cambridgeshire to Cambridge and 8,300 commute in the opposite direction) although overall the study area still sees a notable level of net in-commuting from other locations.

Table 12: Commuting patterns in Greater Cambridge

	Cambridge	South Cambridgeshire	Greater Cambridge
Live and work in area	33,704	23,832	89,175
Home workers	6,570	10,714	17,284
No fixed workplace	3,203	5,443	8,646
In-commute	51,299	34,983	54,643
Out-commute	16,388	39,701	24,450
Total working in area	94,776	74,972	169,748
Total living in area (and working)	59,865	79,690	139,555
Commuting ratio	0.632	1.063	0.822

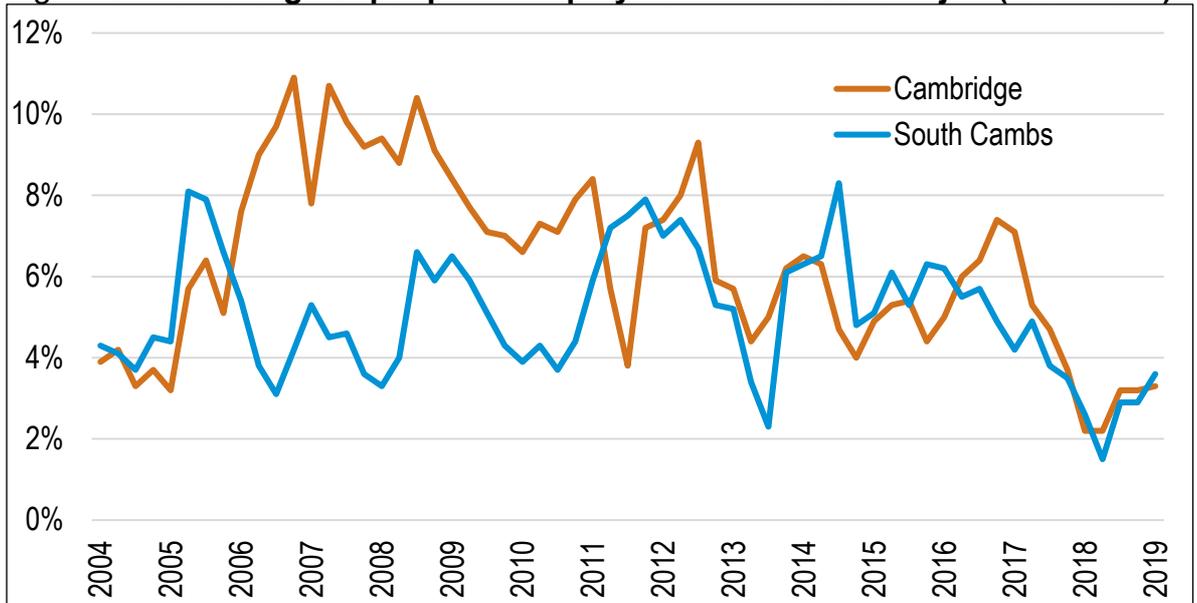
Source: 2011 Census

- 3.62 In translating the commuting pattern data into growth in the labour-force, a core assumption is that the commuting ratio remains at the same level as shown by the 2011 Census. However, later in this section a brief discussion is provided about how commuting dynamics may have changed by 2020.
- 3.63 It is arguable that some changes to the commuting ratio could be modelled, although keeping the ratio constant is considered to be a reasonably balanced approach to use, in light of there being no better data, and the need to discuss and agree any such changes with neighbouring authorities in the context of the Duty to Cooperate.

Double Jobbing

- 3.64 The analysis also considers that a number of people may have more than one job (double jobbing). Data on this topic from the Annual Population Survey (available on the NOMIS website) suggests across the study area that typically between about 6.3% (Cambridge) and 5.1% (South Cambridgeshire) of workers have a second job – levels of double jobbing have been variable over time (mainly due to the accuracy of data at a local level).

Figure 8: **Percentage of people in employment with a second job (2004-2019)**



Source: Annual Population Survey (via NOMIS)

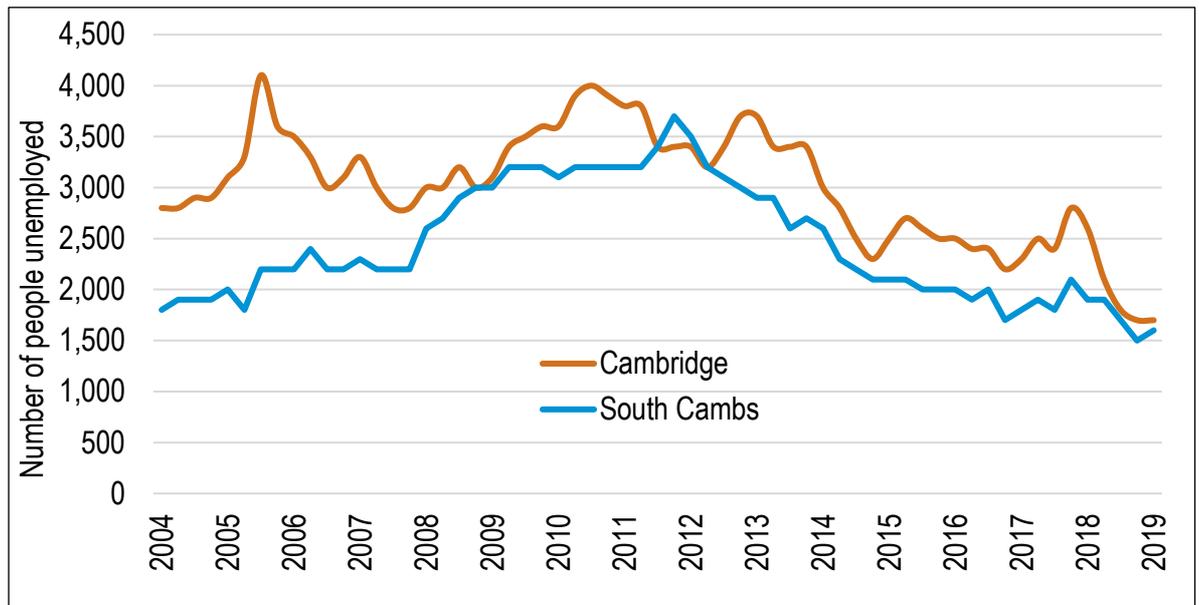
- 3.65 For the purposes of this assessment it has been assumed that 6.3% of people in Cambridge and 5.1% of people in South Cambridgeshire will have more than one job moving forward.
- 3.66 For example, in Cambridge, a double jobbing figure of 6.3% gives rise to a ratio of 0.937 (i.e. the number of jobs supported by the workforce will be around 6.3% higher than workforce growth).
- 3.67 It has been assumed in the analysis that the level of double jobbing will remain constant over time.

Unemployment

- 3.68 The last analysis when looking at the link between jobs and resident labour supply is a consideration of unemployment. Essentially, this is considering if there is any latent labour force that could move back into employment to take up new jobs. The figure below shows the number of people who are unemployed and how this has changed back to 2004. The analysis shows a clear increase in unemployment until about 2010/11 and that since then, the number of people unemployed has dropped notably – by 2019 the number of unemployed people was back close to (or below) the level observed in 2004. This would indicate that there may be limited scope for

further improvements and for the purposes of analysis in this report it has been assumed that there are no changes to the number of people who are unemployed moving forward from 2020 to 2041– although it should be recognised that there is likely to be a short-term impact due to COVID-19 and that the data below pre-dates this.

Figure 9: **Number of people unemployed (2004-2019)**



Source: Annual Population Survey (modelled unemployment data)

- 3.69 As per the ELR this information will be kept under review during the plan making process and any material changes, such as large increases in unemployment, should be factored into the calculations.

Jobs Supported by Growth in the Resident Labour Force

- 3.70 The table below shows how many additional jobs might be supported by population growth under the Standard Method demographic scenario. This suggests that 45,800 jobs could be supported in Greater Cambridge on the basis of the assumptions set out above.

Table 13: Jobs supported by demographic projections (2020-41)

	Total change in economically active	Allowance for net out-commuting	Allowance for double jobbing (= jobs supported)
Cambridge	12,424	19,669	20,994
South Cambridgeshire	24,997	23,517	24,771
Greater Cambridge	37,420	43,185	45,765

Source: GL Hearn Analysis of Demographic Projections

- 3.71 The table below summarises the position with regard to the number of homes derived from the Standard Method, the population growth this would be expected to lead to and then the number of jobs (employment) that could be supported. All the figures are on a per annum basis.

Table 14: Core Outputs, Jobs Supported from Standard Method in Greater Cambridge, 2020-41 – per annum

	Homes	Population	Jobs Supported
Cambridge City	658	1,401	1,000
South Cambridgeshire	1,085	2,120	1,180
Greater Cambridge	1,743	3,521	2,179

Source: GL Hearn Analysis of Demographic Projections

- 3.72 The table below shows the same information for the whole of the 2020-41 period – figures have been rounded to the nearest 100.

Table 15: Core Outputs, Jobs Supported from Standard Method in Greater Cambridge, 2020-41

	Homes	Population	Jobs Supported
Cambridge City	13,800	29,400	21,000
South Cambridgeshire	22,800	44,500	24,800
Greater Cambridge	36,600	73,900	45,800

Source: GL Hearn Analysis of Demographic Projections

Commuting Dynamics in 2020

- 3.73 The analysis above is based on a commuting ratio derived from the 2011 Census – this ratio has been used in the further analysis as it represents the most robust, published estimate of commuting dynamics in the study area.
- 3.74 However, there is merit in considering if rates are likely to have changed and the potential implication of this. The analysis below seeks to replicate the Census in

estimating the number of people who work in each area and the number of residents who are in employment (regardless of where they work). The key data for this analysis is:

- Estimated jobs (taken from Central growth scenario);
- Estimates of double jobbing (which when applied to jobs gives an estimate of the number of people working in an area);
- Resident economically active population (derived from the application OBR participation rates to demographic population estimates); and
- Number of people unemployed (which when deducted from the economically active population will give the number of economically active people who are working).

3.75 The table below sets out this analysis and the resulting commuting ratio (which is also compared with that derived from the 2011 Census). This shows, on the basis of this evidence, that there may have been a small change in the commuting ratio particularly in South Cambridgeshire, with a higher level of net in commuting to the area for work.

Table 16: Estimated commuting patterns in Greater Cambridge in 2020

	Cambridge	South Cambridgeshire	Greater Cambridge
Number of jobs	119,304	99,238	-
Double jobbing	6.30%	5.10%	-
Total working in area	111,788	94,177	205,965
Economically active residents	72,057	90,122	-
Unemployment	1,700	1,600	-
Total living in area (and working)	70,357	88,522	158,879
Commuting ratio	0.629	0.940	0.771
Commuting ratio (Census)	0.632	1.063	0.822

Source: Derived from a range of sources

3.76 There are a number of implications for this analysis particularly with regards to South Cambridgeshire. Firstly, if the lower estimated ratio were used in the analysis then any projection would show a lower future resident labour supply growth requirement when set against economic forecasts and therefore a lower housing need.

Consequently, maintaining the 2011 Census figures in the analysis will not suppress the housing growth estimates.

- 3.77 Alternatively, it could be argued that the change in the ratio points to fewer homes having been provided in the 2011-20 period than may have been required to meet the jobs growth observed. However, the extent to which there has been under-delivery will be dealt with by the Standard Method (which as paragraph 2 of the PPG sets out deals with any backlog).
- 3.78 To conclude, whilst the analysis points to a potential change in the commuting ratio in South Cambridgeshire, it is the case that by modelling future housing growth on the basis of the 2011 Census ratios the Council will not underestimate any analysis of housing growth.

4 ECONOMIC FORECASTS AND HOUSING GROWTH

- 4.1 Having estimated the number of jobs that might be supported using the Standard Method housing need figure, the next part of the report considers how many homes might be required to house the workforce that would fill the number of jobs suggested by economic forecasts (taken from the ELR).
- 4.2 The methodology for converting jobs change to housing is identical to that set out in the previous chapter but completed in reverse to get to a population growth. As per the previous chapter it examines the number of jobs created but in translating this into a labour supply and population growth takes into account:
- Unemployment;
 - Double Jobbing;
 - Commuting Patterns; and
 - Economic Activity
- 4.3 The population growth then leads to an estimate of household growth using household formation rates and subsequently housing growth by applying a vacancy rate.
- 4.4 The assumptions around vacancy rates, unemployment, double-jobbing and economic activity rates have not changed from the initial analysis, as set out in the previous section.

Commuting Assumptions

- 4.5 The initial assumption is that commuting patterns remain as they were in the 2011 Census (which as explained above remains the most robust dataset available until publication of Census 2021 data) i.e. new jobs will see some degree of continued net in-commuting to the study area.
- 4.6 By way of sensitivity analysis, a further model has been developed to assume there is a 1:1 relationship between jobs growth and the increase in economically active residents. This assumption is only applied to the additional jobs in excess of the 45,800 jobs that could be supported by the (minimum) Standard Method calculations.

This is essentially to make the assumption that there will be a balance between the number of additional homes and a changing number of jobs.

- 4.7 Applying this assumption would mean that Greater Cambridge would not be drawing on any additional labour supply from outside Greater Cambridge, above that already assumed to be generated by the Standard Method and existing patterns, as this scenario would see more homes delivered within Greater Cambridge. This could help reduce longer distance commuting and associated carbon emissions.
- 4.8 Together, these scenarios provide an understanding of the scale of housing growth under the Central and Higher employment forecasts that might need to be provided outside of Greater Cambridge if commuting patterns remain unchanged, or within Greater Cambridge if commuting patterns were to change.

Economic Forecasts

- 4.9 The starting point for this strand is the economic forecasts developed in the ELR. That work identifies two plausible forecasts for jobs growth in Greater Cambridge – the Central and Higher scenarios – these are the forecasts for which housing implications are assessed here. The two forecasts entail the following broad principles:
- The ‘higher’ growth scenario assumes the baseline forecast for most sectors but identifies higher growth sectors particular to Greater Cambridge, being Research & Development (R&D), Professional services, and Health & care (related to R&D). For these sectors, the forecast is increased to halfway between the baseline and the historic growth rate from 2001-17 to reflect their higher potential. It also considers multiplier effects of growth. Overall, this is a plausible but more aspirational growth outcome.
 - The ‘central’ scenario follows a similar pattern to the higher growth scenario but uses the lower quartile rather than mid-point between historic growth and future baseline rates. This provides alignment with past absolute annual growth rates and as a result reflects a ‘business as usual’ growth scenario.

- 4.10 As set out in the table below, both the economic forecasts (58,441 jobs or 78,742 jobs for 2020-41) result in significantly higher growth in employment than the Standard Method would support (45,765 jobs).

Table 17: Forecasts Total Employment (jobs) Growth by Scenario

	2020	2041	2020-2041
Cambridge City – Central	119,304	151,536	32,232
Cambridge City – Higher	119,776	156,968	37,192
South Cambridgeshire – Central	99,238	125,447	26,209
South Cambridgeshire – Higher	100,186	141,736	41,550
Greater Cambridge – Central	218,542	276,983	58,441
Greater Cambridge – Higher	219,962	298,704	78,742

Source: GLH, CE, SQW (N.B. 2020 start points differ per scenario as base date originated in 2017 and the modelling assumptions have different implications by 2020).

Economically Active Population, Commuting and Double Jobbing

- 4.11 To calculate the change in economically active residents we need to apply commuting and double jobbing assumptions to the forecast change in jobs. As set out previously we have maintained the same assumptions on double jobbing (6.3% in Cambridge and 5.1% in South Cambridgeshire) and have run two scenarios on commuting.
- 4.12 For commuting, the first scenario continues the assumption that additional jobs would result in population aligned with the Census 2011 commuting ratio. The second scenario applies a sensitivity test in which there is a 1:1 relationship between jobs growth (above that supported by the Standard Method) and the increase in economically active residents (as discussed above).

Table 18: Change in economically active residents needed to meet job forecasts (2020-41) – 2011 commuting

	Forecast job change in Greater Cambridge	Allowance for net commuting (2011 patterns)	Allowance for double jobbing (=change in economically active)
Cambridge City – Central	32,232	20,359	19,073
Cambridge City – Higher	37,192	23,492	22,009
South Cambridgeshire – Central	26,209	27,859	26,448
South Cambridgeshire – Higher	41,550	44,165	41,929
Greater Cambridge – Central	58,441	48,218	45,522
Greater Cambridge – Higher	78,742	67,657	63,938

Source: GL Hearn Analysis of a range of sources

Table 19: Change in economically active residents needed to meet job forecasts (2020-41) – 1:1 commuting on additional jobs (over and above the Standard Method) – sensitivity analysis

	Forecast job change in Greater Cambridge	Allowance for net commuting (1:1 basis)	Allowance for double jobbing (=change in economically active)
Cambridge City – Central	32,232	24,498	22,951
Cambridge City – Higher	37,192	29,459	27,598
South Cambridgeshire – Central	26,209	27,768	26,362
South Cambridgeshire – Higher	41,550	43,109	40,927
Greater Cambridge – Central	58,441	52,267	49,314
Greater Cambridge – Higher	78,742	72,568	68,525

Source: GL Hearn Analysis of a range of sources

Population Assumptions

- 4.13 Applying the same Economic Activity Rates as set out in the previous chapter to the increase in economically active population (from tables 17 and 18) allows us to calculate the total population growth.
- 4.14 As shown in the table below, for the period 2020-2041 the resident population increases by 118,488 in Greater Cambridge for the Higher scenario (39.3%) and 87,982 for the Central scenario (29.2%) under the 2011 commuting assumptions.

This scenario assumes a greater reliance on surrounding local authorities for population than the 1:1 scenario.

Table 20: Population Outputs by Scenario and Location – 2011 Commuting

Cambridge	2020	2041	2020-2041	% Change
Central	138,896	179,981	41,085	29.6%
Higher	138,896	185,131	46,235	33.3%
South Cambridgeshire	2020	2041	2020-2041	% Change
Central	162,357	209,253	46,896	28.9%
Higher	162,357	234,609	72,252	44.5%
Greater Cambridge	2020	2041	2020-2041	% Change
Central	301,253	389,234	87,982	29.2%
Higher	301,253	419,740	118,488	39.3%

Source: Modelled Outputs

- 4.15 Greater Cambridge would take more of the associated housing growth for the 1:1 commuting scenario, and as a result the population growth is greater than the equivalent figures using the 2011 commuting ratio. Specifically, the Higher scenario would see a population growth of 126,361 (41.9%) compared to 94,356 for the Central scenario (31.3%).

Table 21: Population Outputs by Scenario and Location – 1:1 Commuting for jobs above the Standard Method – sensitivity analysis

Cambridge	2020	2041	2020-2041	% Change
Central	138,896	186,783	47,887	34.5%
Higher	138,896	194,933	56,037	40.3%
South Cambridgeshire	2020	2041	2020-2041	% Change
Central	162,357	208,826	46,469	28.6%
Higher	162,357	232,680	70,324	43.3%
Greater Cambridge	2020	2041	2020-2041	% Change
Central	301,253	395,609	94,356	31.3%
Higher	301,253	427,613	126,361	41.9%

Source: Modelled Outputs

Housing Growth

- 4.16 The penultimate step translates the population growth into household growth using household formation rates. As per the previous chapter the rates used have been adjusted to ensure that formation in younger age groups is improved.
- 4.17 This step is in response to worsening affordability (and subsequently deteriorating formation rates) and is in line with that suggested at Paragraph 6 of the PPG which seeks such an improvement for the affordability uplift.

4.18 A final adjustment is made when translating the household growth to dwellings to ensure there is a level of vacancy with the stock. As per the previous chapter this is set at 3%.

4.19 As shown in the table below the housing growth for Greater Cambridge under 2011 commuting assumptions is 2,549 for the Higher scenario and 1,996 for the Central scenario.

**Table 22: Projected housing growth– range of job growth forecast – 2011
Commuting**

Cambridge City	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	52,515	70,209	17,694	843	868
Higher	52,515	72,098	19,583	933	960
South Cambridgeshire	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	66,514	89,514	23,000	1,095	1,128
Higher	66,514	98,892	32,378	1,542	1,588
Greater Cambridge	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	119,029	159,723	40,694	1,938	1,996
Higher	119,029	170,990	51,960	2,474	2,549

Source: Modelled Outputs

4.20 Using the 1:1 commuting assumptions increases this growth to 2,690 for the Higher economic growth scenario and 2,111 for the Central scenario. This is a difference of 141 dwellings per annum for the Higher scenario and 115 for the Central scenario.

**Table 23: Projected housing growth– range of job growth forecast – 1:1
Commuting Ratio**

Cambridge City	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	52,515	72,704	20,189	961	990
Higher	52,515	75,694	23,179	1,104	1,137
South Cambridgeshire	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	66,514	89,356	22,842	1,088	1,120
Higher	66,514	98,178	31,664	1,508	1,553
Greater Cambridge	Households 2020	Households 2041	Change in households	Per annum	Dwellings (per annum)
Central	119,029	162,060	43,031	2,049	2,111
Higher	119,029	173,872	54,843	2,612	2,690

Source: Modelled Outputs

- 4.21 In comparison to the Standard Method (1,743 dpa), the housing associated with economic growth in Greater Cambridge for the Higher scenario is around 46% higher under 2011 commuting assumptions and 54% if looking at the 1:1 commuting scenario.
- 4.22 The Central scenario is around 14% higher under 2011 commuting assumptions and 21% than if looking at the 1:1 commuting scenario.
- 4.23 Finally, it should also be noted that paragraph 11 of the PPG (Ref 2a-011) states that “Where an alternative approach to the standard method is used, past under delivery should be taken into account.”
- 4.24 It would therefore be logical to assume this only applies to situations where the alternative approach is below the standard method. Specifically, if the standard method addresses historic under-supply so too would a number greater than it.
- 4.25 In addition, the household formation rates uplift referenced at paragraph 4.17 further addresses past under-delivery when translating the Central and Higher employment forecasts to homes. The uplift approach taken is the same as that set out in chapter 3, which itself was applied to account for the affordability factor set out at Step 2 of the standard method (see paragraph 3.11).

Impact on Neighbouring Local Authorities

- 4.26 Housing provided above the Standard Method whilst maintaining a Census commuting ratio could have an impact in terms of the need for homes outside of Greater Cambridge.
- 4.27 For clarity, the Standard Method shows a need for 1,743 dwellings per annum and the Higher economic forecast shows a need for 2,549 dpa – this latter figure would increase to 2,690 if it were assumed that additional jobs (over and above those supported by the Standard Method) are filled on the basis of a 1:1 commuting dynamic.
- 4.28 Therefore, moving from the Standard Method to the housing growth associated with the Higher economic growth forecast sees an uplift of 806 dwellings per annum

(2,549-1,743) within Greater Cambridge under 2011 commuting assumptions, but sees a further 141 dwellings under a 1:1 commuting pattern.

- 4.29 As such, under the 2011 commuting assumption, there would be a further 141 dwellings per annum (2,690-2,549) which would potentially be needed in other locations (outside of Greater Cambridge) in order to house people who would commute to jobs in Greater Cambridge. The equivalent figure for the Central growth scenario would be 115 dwellings per annum.
- 4.30 In both cases this would be in addition to neighbouring authorities' provision of housing under the Standard Method, which is assumed to continue to send workers to Greater Cambridge based on 2011 commuting patterns.

Locational Impact

- 4.31 Using 2011 Census commuting data to understand where this labour-supply might come from, it is possible to estimate where these new dwellings might need to be built.
- 4.32 The percentage breakdown of additional commuters, above those assumed under the Standard Method, is presented in the table below along with the estimated household growth impact.
- 4.33 Data is provided for both the Higher scenario (i.e. the 141 dwellings per annum) and also the Central scenario (where the figure is 114 dpa). The analysis shows that the main areas affected are East Cambridgeshire (22%), Huntingdonshire (19%) and West Suffolk (15%) – other than for these local authority areas the commuting impact is relatively minor i.e. less than 10 units per annum even for the higher growth scenario.

Table 24: Estimated additional housing growth impact of Central and Higher employment forecasts on surrounding local authorities outside of Greater Cambridge, 2020-41, dpa

Region	% of Commuters from Outside Greater Cambridge	Estimated Housing Growth Impact (Central scenario)	Estimated Housing Growth impact (Higher scenario)
East Cambridgeshire	22%	25	30
Huntingdonshire	19%	22	27
Fenland	4%	4	5
West Suffolk	15%	18	22
Central Bedfordshire	3%	3	4
North Hertfordshire	6%	7	9
Uttlesford	5%	6	7
Rest of East	15%	17	21
London	3%	4	4
Rest (excluding abroad)	8%	9	11
Total	100%	114	141

Source: WU01UK - Location of usual residence and place of work by sex, Nomis, GL Hearn Analysis (N.B. numbers may not sum due to rounding)

Greater Cambridge Local Plan strategic spatial options assessment: Housing Delivery Study

Interim Findings

Greater Cambridge Shared Planning

November 2020

Quality information

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1. Executive Summary

- 1.1 AECOM and HDH Planning and Development were appointed by the Greater Cambridge Shared Planning Service in August 2020 to undertake research on housing delivery to provide evidence to support the emerging Greater Cambridge Local Plan, feeding in to the Housing and Economic Land Availability Assessment (HELAA) process and updates to the Greater Cambridge housing trajectory.
- 1.2 This Interim Findings and Spatial Options Commentary report provide the preliminary views of the consultant team drawing on research to date and providing professional judgements on the emerging three growth level options for homes and jobs and eight strategic (non-site specific) spatial options.

Progress update on the wider study

- 1.3 The Housing Delivery Study commenced in August 2020, to date a literature review of relevant secondary sources and initial analysis of GCSP-held data has been conducted, alongside the distribution of a questionnaire sent to local and national stakeholders involved in the housing and development industry and drawn from the private, public and third sectors (550 consultees).
- 1.4 A series of workshops and one to one interviews are scheduled to take place in November 2020 with a series of respondents identified by the GCSP client team and consultant team as key stakeholders (individuals or organisations with an in-depth knowledge of the housing market and development industry). Following the principal primary data collection phase a draft final report shall then be prepared and shared with the GCSP client team prior to being finalised.

Summary of review of spatial options

- 1.5 The interim findings in this report utilise the Councils' existing assumptions of build out rates and lead-in times for estimating housing trajectories and calculating five-year housing land supply positions at plan adoption (assumed to be 1st April 2025 for the purpose of providing a baseline for this report). The final report will revisit the spatial options using updated lead-in times and build-out rate assumptions based on desktop research of comparator locations and engagement with developers and agents in the local market.
- 1.6 Using the Councils' distribution of development for each of the eight spatial options and the levels of growth at each location for the three housing growth level options, 24 unique housing trajectories have been prepared to assess housing deliverability over the plan period. In terms of the **housing growth level options** (across all eight spatial options):
- The Minimum option (1,743 dwellings per annum, or dpa) is largely met by existing commitments (existing Local Plan allocations and planning permissions) and the windfall allowance over the plan period as a whole, however the supply is front-loaded before 2031, the end date of the existing Local Plans. As a result the additional supply is needed after 2031 to sustain delivery and ensure a sufficient buffer to enable delivery of the

housing requirement (additional sites are needed post 2031 to deliver approximately 400-500 dpa).

- The Medium option (1,996 dpa) requires additional supply of approximately 5,500 dwellings, alongside the existing commitments and windfall allowance. A relatively small amount of additional supply is needed from around 2028/29 onwards to provide a five-year housing land supply at plan adoption, and significantly more supply is needed from 2033/34 onwards (additional sites are needed post 2033/34 to deliver around 750 dpa).
- The Maximum option (2,711 dpa) requires additional supply of approximately 20,500 dwellings, alongside the existing commitments and windfall allowance. In this option, the Councils would begin the plan period (from 2020/21) with a shortfall in housing supply due to the significant increase in housing requirement both compared to the annual housing requirement of 1,675 dwellings in the adopted Local Plans 2018 and the historical average observed in Greater Cambridge between 2002/03 and 2018/19 of 1,439 dpa, an increase of 62% and 88% respectively. Under the Planning Practice Guidance (PPG) this shortfall should be met within the first five years of the plan (2025/26-2030/31)¹, however the scale of the shortfall in combination with the significantly higher annual housing requirement means the Councils would need to pursue either a stepped annual housing requirement over the plan period or the use of the Liverpool method for calculating their five-year supply for the majority of the spatial options (using the Councils' assumptions of distribution of development, build-out rates and lead-in times) to be able to demonstrate a five year housing land supply at plan adoption.

- 1.7 It is important to note, and as outlined by the Councils in their Greater Cambridge Local Plan: strategic spatial options for testing – methodology document, that the Councils' working assumption for all of the Maximum spatial options is that the historic build-out rate of sites in Greater Cambridge would need to be increased at strategic sites (500dpa, rather than the 250dpa agreed during Examination and in subsequent updates to the Greater Cambridge Housing Trajectory) to enable sustainable choices for the distribution of growth to be made. For the purposes of this interim report, this assumption is applied as outlined by the Councils in each of the options. Based on our initial research average build out rates in excess of 300 dpa will only be possible with significant interventions and/or alternative delivery models.
- 1.8 Secondary sources and emerging primary research suggests that a traditional market-led approach would be unlikely to exceed an average of 300 dpa over the duration of the build-out period. Furthermore the delivery profile of strategic sites is not "flat", instead it increases over time to a "peak" in the middle before then decelerating. The final report will provide alternative trajectories using revised assumptions but based on the interim findings to date **we do not believe that any of the eight Maximum spatial options are likely to be deliverable in practice** based on current market conditions and the UK housing market's traditional routes to delivery. We do believe that an annual housing requirement that is higher than the Medium option may be achievable, but we are not yet able to advise on what level of growth may be deliverable at

¹ Unless an alternative approach can be justified (i.e. the Liverpool method)

this stage of the study in advance of more detailed testing and engagement with the development industry.

- 1.9 Notwithstanding the overarching comments above about the high build-out rate assumptions of all of the Maximum options, the table below summarises the various pros and cons of the **different spatial options** in terms of housing delivery, which all have Minimum (a), Medium (b) and Maximum (c) variants (discussed in more detail in **Appendix 1**).

Table 1.1 Pros and Cons of the 24 different spatial options

Option Focus and Description	Pros	Cons	Other comments
<p>1a. Densification (Minimum) Option focus source of supply</p> <ul style="list-style-type: none"> • North East Cambridge (delivery by 2041 assumption, using historic delivery rates) • Cambridge urban area (low density) – not total capacity, only enough dwellings to fulfil balance to find 	<ul style="list-style-type: none"> • Housing would be provided closest to many of the existing and proposed employment opportunities. • Ability to provide private rented supply (Build to Rent) as well as housing for ownership and affordable housing. • Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. • Ability to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. • Market absorption into the established Cambridge housing market may allow high build out rates. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of build-out rates and lead-in times). 	<ul style="list-style-type: none"> • Densification would deliver a greater proportion of smaller units in urban locations, which is not likely to deliver the required mix of housing to meet full market demand (which will require a proportion of larger homes – including some wheelchair accessible homes - and homes in other locations). This would not be conducive to maximising build-out rates. • Already high percentage of new builds within Cambridge (c.25% of all sales) - may limit ability to expand market. • There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order 	<ul style="list-style-type: none"> • The trajectory for this option generally over-delivers against the annual requirement until 2032/33. Additional longer-term sources of supply would ensure the annual requirement is met throughout the plan period.

Option Focus and Description	Pros	Cons	Other comments
<p>1b. Densification (Medium) Option focus source of supply</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using historic delivery rates) <p>Cambridge urban area (medium density)</p> <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> Cambridge Airport (initial phase post 2030, outside Green Belt, using historic delivery rates) Edge of Cambridge - Green Belt (equivalent to one site / broad location, using historic delivery rates) – not total capacity, only enough dwellings to fulfil balance to find 	<ul style="list-style-type: none"> Housing would be provided closest to many of the existing and proposed employment opportunities. Ability to provide private rented supply (Build to Rent) as well as housing for ownership and affordable housing. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Ability to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils’ assumptions of build-out rates and lead-in times). Market absorption into the 	<p>for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> Concern that there may not be sufficient HELAA capacity to support the medium option alongside the windfall allowance. Densification would deliver a greater proportion of smaller units in urban locations, which is not likely to deliver the required mix of housing to meet full market demand (which will require a proportion of larger homes – including some wheelchair accessible homes - and homes in other locations). This would not be conducive to maximising build-out rates. Already high percentage of new builds within Cambridge (c.25% of all sales) - may limit ability to expand market. There may be a risk to relying on delivery from North East Cambridge during the middle 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by development at Cambridge Airport. There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant

Option Focus and Description	Pros	Cons	Other comments
	<p>established Cambridge housing market may allow high build out rates.</p>	<p>part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p>	<p>possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate. Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge.</p> <ul style="list-style-type: none"> • If Cambridge Airport and North East Cambridge were delivered concurrently it may result in a degree of competition, however there is considerable scope to ensure that the sites are sufficiently differentiated in terms of housing type and size to provide sufficient choice in the market.
<p>1c. Densification (Maximum) N.B. Assumes additional delivery by 2041 at committed new settlements. Option focus source of supply</p> <ul style="list-style-type: none"> • North East Cambridge (delivery by 2041 assumption, using 	<ul style="list-style-type: none"> • Housing would be provided closest to many of the existing and proposed employment opportunities. • Ability to provide private rented supply (Build to Rent) as well as housing for ownership and affordable 	<ul style="list-style-type: none"> • Concern that there may not be sufficient HELAA capacity to support the maximum option alongside the windfall allowance. • Densification would deliver a greater proportion of smaller units in urban locations, which 	<ul style="list-style-type: none"> • Under this option the Councils have assumed that the balance would be made up by development at Cambridge Airport. There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan

Option Focus and Description	Pros	Cons	Other comments
<p>delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))</p> <ul style="list-style-type: none"> Cambridge urban area (at high density) <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, higher delivery rates) – delivery by 2041 constrained to provide only enough dwellings to fulfil balance to find 	<p>housing.</p> <ul style="list-style-type: none"> Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Ability to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. Market absorption into the established Cambridge housing market may allow high build out rates. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils’ assumptions of build-out rates and lead-in times). 	<p>is not likely to deliver the required mix of housing to meet full market demand (which will require a proportion of larger homes – including some wheelchair accessible homes - and homes in other locations). This would not be conducive to maximising build-out rates.</p> <ul style="list-style-type: none"> Already high percentage of new builds within Cambridge (c.25% of all sales) - may limit ability to expand market. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review 	<p>period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate.</p>

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Option Focus and Description	Pros	Cons	Other comments
		<p>during the plan making process.</p> <ul style="list-style-type: none"> The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the 	

Option Focus and Description	Pros	Cons	Other comments
<p>2a. Edge of Cambridge - Non Green Belt (Minimum)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, using historic delivery rates) <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using historic delivery rates) One village site at a Rural Centre outside of the Green Belt to make up balance to find 	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants. Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Marginal five-year housing land supply at plan adoption (using the Councils' assumptions of build-out rates and lead-in times). 	<p>requirement by 2041.</p> <ul style="list-style-type: none"> There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate. Likely not able to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by development at North East Cambridge. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process. Alternative options to deliver in the middle of the plan period could include additional new settlements or

Option Focus and Description	Pros	Cons	Other comments
<p>2b. Edge of Cambridge - Non Green Belt (Medium)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, using historic delivery rates) <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using historic delivery rates) Two smaller new settlements of 4,500 dwellings on public transport corridors to meet the balance to find (delivery by 2041, using historic delivery rates) Balance to find spread across the Rural Centre (30%) and Minor Rural Centres (70%) outside of the Green Belt 	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants. Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. 	<ul style="list-style-type: none"> There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate. Marginally not able to demonstrate a five-year housing land supply at plan adoption (4.99 years) (using the 	<p>Green Belt urban extensions to Cambridge.</p> <ul style="list-style-type: none"> The balance to find under this scenario spreads development across villages which could deliver sufficient small sites to meet the NPPF paragraph 68 requirement. Without this approach the small sites requirement would not be met under this option. Under this option the Councils have assumed that the balance would be made up by development at North East Cambridge. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an

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Option Focus and Description	Pros	Cons	Other comments
		<p>Councils' assumptions of lead-in times and build-out rates).</p> <ul style="list-style-type: none"> • Timing and delivery of infrastructure risk if incremental village extensions result in unsustainable patterns of growth i.e. poorly connected/served communities could harm build/sales rates. 	<p>alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> • Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge. • Potentially less likely to deliver private rented supply e.g. Build to Rent as development would be in less accessible locations, though North East Cambridge would be suitable for this tenure. • The two new settlements would compete with the committed new settlements from 2030 onwards when a total of six new settlements would be under construction, selling a similar product in similar locations. This may see a reduction in the build-out rate as a result.

Option Focus and Description	Pros	Cons	Other comments
<p>2c. Edge of Cambridge - Non Green Belt (Maximum) N.B. Assumes additional delivery by 2041 at committed new settlements. Option focus source of supply</p> <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates) <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020)) One larger new settlement of 9,000 dwellings on a public transport corridor (delivery by 2041, using higher delivery rates but constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure) One smaller new settlement of 4,500 dwellings on a public transport corridor (delivery by 	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants. Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Marginal five-year housing land supply at plan adoption (using the Councils' assumptions of build-out rates and lead-in times). 	<ul style="list-style-type: none"> There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate. Likely not able to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. The Councils' have assumed that build-out rates at new 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by development at North East Cambridge. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process. Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions

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Option Focus and Description	Pros	Cons	Other comments
<p>2041, using higher delivery rates but constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure)</p>		<p>settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p>	<p>to Cambridge.</p> <ul style="list-style-type: none"> • Potentially less likely to deliver private rented supply e.g. Build to Rent as development would be in less accessible locations, though North East Cambridge would be suitable for this tenure. • The proposed new settlements would compete with the committed new settlements from 2030 onwards when a total of five new settlements would be under construction, selling a similar product in similar locations. This may see a reduction in the build-out rate as a result.
<p>3a. Edge of Cambridge - Green Belt (Minimum)</p>	<ul style="list-style-type: none"> • Close geographical proximity between key employment 	<ul style="list-style-type: none"> • Lead-in times extended compared to other options due 	<p>-</p>

Option Focus and Description	Pros	Cons	Other comments
<p>Option focus source of supply</p> <ul style="list-style-type: none"> Edge of Cambridge - Green Belt (equivalent to three sites / broad locations, with development limited to ensure that the strategic option homes total equals the balance to find) 	<p>locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants.</p> <ul style="list-style-type: none"> Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). 	<p>to the requirement to release Green Belt land through an adopted plan before applications can be approved (i.e. applications cannot be "twin-tracked" during plan-making unless "very special circumstances" can be demonstrated).</p> <ul style="list-style-type: none"> Would not be likely to meet the small sites requirement under NPPF paragraph 68. Green Belt site allocations are less likely to involve incremental urban extensions, and more likely to involve large-scale release where justified by exceptional circumstances. The sites would likely be delivering concurrently, competing with one another, which could reduce market absorption. 	
<p>3b. Edge of Cambridge - Green Belt (Medium)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Edge of Cambridge - Green Belt (equivalent to five sites / broad locations, using historic delivery 	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand 	<ul style="list-style-type: none"> Lead-in times extended compared to other options due to the requirement to release Green Belt land through an adopted plan before applications can be approved (i.e. applications cannot be 	<ul style="list-style-type: none"> The balance to find from Cambridge urban area could be increased to improve the five-year housing land supply position at plan adoption.

Option Focus and Description	Pros	Cons	Other comments
<p>rates)</p> <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> Minimal balance to find located within Cambridge urban area 	<p>from in-migrants.</p> <ul style="list-style-type: none"> Ability to provide housing for ownership and affordable housing. Wide range of dwelling types and sizes likely, supporting higher delivery rates. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. 	<p>“twin-tracked” during plan-making unless “very special circumstances” can be demonstrated).</p> <ul style="list-style-type: none"> Marginally unable to demonstrate a five-year housing land supply at plan adoption (4.99 years) (using the Councils’ assumptions of lead-in times and build-out rates). Potential for the Green Belt site allocations to compete with each other and reduce delivery rates under this scenario as they would be delivering a similar product in a similar location concurrently at scale. Would not be likely to meet the small sites requirement under NPPF paragraph 68. Green Belt site allocations are less likely to involve incremental urban extensions, and more likely to involve large-scale release where justified by exceptional circumstances. 	
<p>3c. Edge of Cambridge - Green Belt (Maximum)</p> <p>N.B. Assumes additional delivery</p>	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which 	<ul style="list-style-type: none"> Lead-in times extended compared to other options due to the requirement to release 	-

Option Focus and Description	Pros	Cons	Other comments
<p>by 2041 at committed new settlements.</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> • Edge of Cambridge - Green Belt (equivalent to five sites / broad locations, using higher delivery rates, with development limited to ensure the strategic option equals the balance to find) 	<p>will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants.</p> <ul style="list-style-type: none"> • Ability to provide housing for ownership and affordable housing. • Wide range of dwelling types and sizes likely, supporting higher delivery rates. • Opportunity to offer self/custom build. • Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. 	<p>Green Belt land through an adopted plan before applications can be approved (i.e. applications cannot be “twin-tracked” during plan-making unless “very special circumstances” can be demonstrated).</p> <ul style="list-style-type: none"> • Not able to demonstrate a five-year housing land supply at plan adoption (using the Councils’ assumptions of lead-in times and build-out rates) due to a significant shortfall prior to plan adoption and not consistently meeting the annual requirement until 2033/34, which would require a stepped annual housing requirement and/or Liverpool method. • Potential for the Green Belt site allocations to compete with each other and reduce delivery rates under this scenario as they would be delivering a similar product in a similar location concurrently at scale. • Would not be likely to meet the small sites requirement under NPPF paragraph 68. Green Belt 	

Option Focus and Description	Pros	Cons	Other comments
		<p>site allocations are less likely to involve incremental urban extensions, and more likely to involve large-scale release where justified by exceptional circumstances.</p> <ul style="list-style-type: none"> • The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and 	

Option Focus and Description	Pros	Cons	Other comments
<p>4a. New Settlements (Minimum) Option focus source of supply</p> <ul style="list-style-type: none"> Two smaller new settlements of 4,500 dwellings on a public transport corridor (delivery by 2041, using historic delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure). 	<ul style="list-style-type: none"> Opportunities to deliver new housing at scale in the mid-latter parts of the plan period. Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). Potentially less likelihood of directly competing sites if new settlements are located sufficiently distant from existing committed new settlements. 	<p>indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p> <ul style="list-style-type: none"> Competition with existing committed new settlement sites in the mid-latter part of the plan period may saturate the local housing market with similar products in similar locations, thus reducing build-out rates. Less likely to deliver private rented supply e.g. Build to Rent as development would be in potentially less accessible locations and further from Cambridge where demand is higher. Less likely to deliver specialist e.g. older persons housing or delivered later in phasing when community centre complete. Not likely to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. 	-
<p>4b. New Settlements (Medium) Option focus source of supply</p>	<ul style="list-style-type: none"> Opportunities to deliver new housing at scale in the mid- 	<ul style="list-style-type: none"> Competition with existing committed new settlement sites 	-

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Option Focus and Description	Pros	Cons	Other comments
<p>Page 362</p> <ul style="list-style-type: none"> • Three new settlements on public transport corridors (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures), including: <ul style="list-style-type: none"> – Two larger new settlements of 9,000 dwellings – One smaller new settlement of 4,500 dwellings • One smaller new settlement of 4,500 homes on the road network (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures) 	<p>latter parts of the plan period.</p> <ul style="list-style-type: none"> • Ability to provide housing for ownership and affordable housing. • Opportunity to offer self/custom build. • Potentially less likelihood of directly competing sites if new settlements are located sufficiently distant from existing committed new settlements. 	<ul style="list-style-type: none"> • in the mid-latter part of the plan period may saturate the local housing market with similar products in similar locations, thus reducing build-out rates. • Less likely to deliver private rented supply e.g. Build to Rent as development would be in potentially less accessible locations and further from Cambridge where demand is higher. • Less likely to deliver specialist e.g. older persons housing or delivered later in phasing when community centre complete. • Not likely to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. • Unable to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates), requiring more short-term allocations or a stepped annual housing requirement. 	
<p>4c. New Settlements (Maximum) Option focus source of supply</p>	<ul style="list-style-type: none"> • Opportunities to deliver new housing at scale in the mid- 	<ul style="list-style-type: none"> • Competition with existing committed new settlement sites 	-

Option Focus and Description	Pros	Cons	Other comments
<p>• Three new settlements on public transport corridors (delivery by 2041, using higher delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures), including:</p> <ul style="list-style-type: none"> – Two larger new settlements of 9,000 dwellings – One smaller new settlement of 4,500 dwellings <p>• One smaller new settlement of 4,500 homes on the road network (delivery by 2041, using higher delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures)</p>	<p>latter parts of the plan period.</p> <ul style="list-style-type: none"> • Ability to provide housing for ownership and affordable housing. • Opportunity to offer self/custom build. • Potentially less likelihood of directly competing sites if new settlements are located sufficiently distant from existing committed new settlements. 	<p>in the mid-latter part of the plan period may saturate the local housing market with similar products in similar locations, thus reducing build-out rates.</p> <ul style="list-style-type: none"> • Less likely to deliver private rented supply e.g. Build to Rent as development would be in potentially less accessible locations and further from Cambridge where demand is higher. • Less likely to deliver specialist e.g. older persons housing or delivered later in phasing when community centre complete. • Not likely to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. • Unable to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates), requiring more short-term allocations or a stepped annual housing requirement. • The Councils' have assumed that build-out rates at new 	

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Option Focus and Description	Pros	Cons	Other comments
<p>5a. Villages (Minimum) Option focus source of supply</p>	<ul style="list-style-type: none"> A dispersal approach to the villages is likely to result in 	<ul style="list-style-type: none"> Additional housing delivery through new allocations is 	-
		<p>settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p>	

Option Focus and Description	Pros	Cons	Other comments
<ul style="list-style-type: none"> • 40% of balance to find at Rural Centres • 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre). • 17% of balance to find at Group villages • 3% of balance to find at Infill villages 	<p>multiple smaller sites that are likely to be deliverable in the short-medium term.</p> <ul style="list-style-type: none"> • Greater potential to allocate small sites to meet the NPPF paragraph 68 requirement. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). • Deferring a proportion of site allocations (i.e. not all) to Neighbourhood Plans could spread delivery across the plan period and would be less likely to result in the loss of a five-year housing land supply. • Possible to deliver specialist housing if required e.g. older persons housing. • Would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with existing committed new 	<p>mainly required in the mid-latter part of the plan period. This option mainly delivers medium-term sites in villages, so would not be adding supply at the latter part of the plan period.</p> <ul style="list-style-type: none"> • Market-led sites are less likely to deliver affordable housing because some small sites will fall below the threshold for contributions and/or registered providers unable/unwilling to manage small numbers. • A highly dispersed growth pattern would lead to less concentrated infrastructure investment because growth would be distributed across numerous settlements over a broad geographical area. • Fewer small dwellings are likely to be delivered, especially apartments, limiting delivery rates overall. • Smaller sites are unlikely to deliver private rented supply e.g. Build to Rent. • Greater market delivery at villages would likely result in a 	

Option Focus and Description	Pros	Cons	Other comments
<p>5b. Villages (Medium) Option focus source of supply</p> <ul style="list-style-type: none"> • 40% of balance to find at Rural Centres • 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre). • 17% of balance to find at Group villages • 3% of balance to find at Infill villages 	<p>settlements and therefore would maximise the market absorption rate.</p> <ul style="list-style-type: none"> • A dispersal approach to the villages is likely to result in multiple smaller sites that are likely to be deliverable in the short-medium term. • Greater potential to allocate small sites to meet the NPPF paragraph 68 requirement. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). • Deferring a proportion of site allocations (i.e. not all) to Neighbourhood Plans could spread delivery across the plan period and would be less likely to result in the loss of a five-year housing land supply. • Possible to deliver specialist housing if required e.g. older persons housing. 	<p>reduction in the number of rural exception sites for affordable housing taken forward.</p> <ul style="list-style-type: none"> • Additional housing delivery through new allocations is mainly required in the mid-latter part of the plan period. This option mainly delivers medium-term sites in villages, so would not be adding supply at the latter part of the plan period. • Market-led sites are less likely to deliver affordable housing because some small sites will fall below the threshold for contributions and/or registered providers unable/unwilling to manage small numbers. • A highly dispersed growth pattern would lead to less concentrated infrastructure investment because growth would be distributed across numerous settlements over a broad geographical area. • Fewer small dwellings likely to be delivered, especially apartments, limiting delivery rates overall. 	-

Option Focus and Description	Pros	Cons	Other comments
<p>5c. Villages (Maximum) N.B. High growth option assumes additional delivery by 2041 at committed new settlements. Option focus source of supply 40% of balance to find at Rural Centres 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre).</p> <ul style="list-style-type: none"> • 17% of balance to find at Group villages • 3% of balance to find at Infill villages 	<ul style="list-style-type: none"> • A dispersal approach to the villages is likely to result in multiple smaller sites that are likely to be deliverable in the short-medium term. • Greater potential to allocate small sites to meet the NPPF paragraph 68 requirement. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). • Deferring a proportion of site allocations (i.e. not all) to Neighbourhood Plans could spread delivery across the plan period and would be less likely to result in the loss of a five-year housing land supply. 	<ul style="list-style-type: none"> • Smaller sites are unlikely to deliver private rented supply e.g. Build to Rent. • Greater market delivery at villages would likely result in a reduction in the number of rural exception sites for affordable housing taken forward. • Additional housing delivery through new allocations is mainly required in the mid-latter part of the plan period. This option mainly delivers medium-term sites in villages, so would not be adding supply at the latter part of the plan period. • Market-led sites are less likely to deliver affordable housing because some small sites will fall below the threshold for contributions and/or registered providers unable/unwilling to manage small numbers. • A highly dispersed growth pattern would lead to less concentrated infrastructure investment because growth would be distributed across numerous settlements over a 	-

Option Focus and Description	Pros	Cons	Other comments
	<ul style="list-style-type: none"> Possible to deliver specialist housing if required e.g. older persons housing. 	<p>broad geographical area.</p> <ul style="list-style-type: none"> Fewer small dwellings likely to be delivered, especially apartments, limiting delivery rates overall. Smaller sites are unlikely to deliver private rented supply e.g. Build to Rent. Greater market delivery at villages would likely result in a reduction in the number of rural exception sites for affordable housing taken forward. The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the 	

Option Focus and Description	Pros	Cons	Other comments
<p>6a. Public Transport Corridors (Minimum)</p> <p>Option focus source of supply North East Cambridge (delivery by 2041 assumption, using historic delivery rates)</p> <ul style="list-style-type: none"> One smaller new settlement of 4,500 homes on a public transport corridor (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure). Minimal balance to find spread 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Development in accessible villages, urban extensions and new settlements provides opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Able to demonstrate a five-year housing land supply at 	<p>Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p> <ul style="list-style-type: none"> Not likely to deliver small sites to meet the NPPF paragraph 68 requirement. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level 	<ul style="list-style-type: none"> Balance to find at eighteen villages could be increased to reduce risks resulting from delay or under-delivery at North East Cambridge.

Option Focus and Description	Pros	Cons	Other comments
<p>across eighteen villages sited along existing or proposed public transport corridors</p>	<p>plan adoption (using the Councils' assumptions of build-out rates and lead-in times).</p>	<p>of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p>	
<p>6b. Public Transport Corridors (Medium) Option focus source of supply</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using historic delivery rates) <p>One larger new settlement of 9,000 homes on a public transport corridor (delivery by 2041, using historic delivery rates)</p> <ul style="list-style-type: none"> Balance to find spread across eighteen villages sited along existing or proposed public transport corridors 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Development in accessible villages, urban extensions and new settlements provides opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Sites at the eighteen villages would be likely to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. Providing development in the villages (alongside an urban extension and a new settlement) will provide a wider choice of housing in the 	<ul style="list-style-type: none"> Marginally does not demonstrate a five-year housing land supply at plan adoption (4.9 years) (using the Councils' assumptions of lead-in times and build-out rates), however it would do with a smoother trajectory for village allocations delivering sooner after plan adoption. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site 	-

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Option Focus and Description	Pros	Cons	Other comments
<p>6c. Public Transport Corridors (Maximum)</p>	<p>market for people in terms of size and location and will increase the market absorption rate.</p>	<p>should be kept under review during the plan making process.</p>	
<p>N.B. Assumes additional delivery by 2041 at committed new settlements.</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020)) <p>One larger new settlement of 9,000 homes on a public transport corridor (delivery by 2041, using higher delivery rates)</p> <ul style="list-style-type: none"> Balance to find spread across eighteen villages sited along existing or proposed public transport corridors 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Development in accessible villages, urban extensions and new settlements provides opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of build-out rates and lead-in times). Site at the eighteen villages would be likely to deliver sufficient small sites to meet the NPPF paragraph 68 	<ul style="list-style-type: none"> There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process. The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial 	<p>-</p>

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Option Focus and Description	Pros	Cons	Other comments
	<p>requirement.</p> <ul style="list-style-type: none"> • Providing development in the villages (alongside an urban extension and a new settlement) will provide a wider choice of housing in the market for people in terms of size and location and will increase the market absorption rate. 	<p>research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p>	
<p>7a. Supporting a high-tech corridor by integrating homes and jobs (southern cluster) (Minimum)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> • One smaller new settlement of 4,500 homes on a public transport corridor within the 	<ul style="list-style-type: none"> • Good commuting relationship between jobs and houses to meet demand where it exists. • Mix of sites and focus on the south of the city will reduce competition with committed new settlements to the north and west of Cambridge, 	<ul style="list-style-type: none"> • Reliance on performance of the high-tech sectors of the economy in this location and demand for homes tied to this. • Estimated annual completions are consistently below the annual housing requirement from 2032/33 onwards which 	<p>-</p>

Option Focus and Description	Pros	Cons	Other comments
<p>southern cluster area (delivery by 2041, using historic delivery rates)</p> <ul style="list-style-type: none"> Balance to find distributed equally between the five villages located within the core southern cluster area that are also on a public transport corridor. 	<p>minimising absorption rate issues.</p> <ul style="list-style-type: none"> Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). Will deliver small sites in villages to help meet the NPPF paragraph 68 requirement. 	<p>would result in the need for additional mid-longer term allocations to avoid losing a five-year housing land supply.</p>	
<p>7b. Supporting a high-tech corridor by integrating homes and jobs (southern cluster) (Medium)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> One smaller new settlement of 4,500 homes on a public transport corridor within the 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Mix of sites and focus on the south of the city will reduce competition with committed new settlements to the north and west of Cambridge, 	<ul style="list-style-type: none"> Reliance on performance of the high-tech sectors of the economy in this location and demand for homes tied to this. Marginally does not demonstrate a five-year housing land supply at plan adoption (4.9 years) (using the 	<p>-</p>

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Option Focus and Description	Pros	Cons	Other comments
<p>southern cluster area (delivery by 2041, using historic delivery rates)</p> <ul style="list-style-type: none"> Balance to find spread across five villages sited along existing or proposed public transport corridors within the core southern cluster area (70%), and further villages within Southern Cluster core area not on PT corridors (including Group villages (20%) and Infill villages (10%). 	<p>minimising absorption rate issues.</p> <ul style="list-style-type: none"> Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Will deliver small sites in villages to help meet the NPPF paragraph 68 requirement. 	<p>Councils' assumptions of lead-in times and build-out rates), however it would do with a smoother trajectory for village allocations delivering sooner after plan adoption.</p> <ul style="list-style-type: none"> A dispersed growth pattern to villages could lead to less concentrated infrastructure investment because growth would be distributed across numerous settlements over a broad geographical area. 	
<p>7c. Supporting a high-tech corridor by integrating homes and jobs (southern cluster) (Maximum)</p> <p>N.B. Assumes additional delivery by 2041 at committed new settlements.</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> One larger new settlement of 9,000 homes on a public transport corridor within the southern cluster (delivery by 2041, using higher delivery rates) 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Mix of sites and focus on the south of the city will reduce competition with committed new settlements to the north and west of Cambridge, minimising absorption rate issues. Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along 	<ul style="list-style-type: none"> Reliance on performance of the high-tech sectors of the economy in this location and demand for homes tied to this. Not able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). A dispersed growth pattern to villages could lead to less concentrated infrastructure investment because growth would be distributed across 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by high delivery rates at North East Cambridge and Cambridge Airport. There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to

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Option Focus and Description	Pros	Cons	Other comments
<p>• Balance to find spread equally across five villages sited at existing or proposed public transport nodes within the southern cluster.</p> <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> • Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates) • North East Cambridge (delivery by 2041 assumption, using delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure). 	<p>the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates.</p> <ul style="list-style-type: none"> • Will deliver small sites in villages to help meet the NPPF paragraph 68 requirement. 	<p>numerous settlements over a broad geographical area.</p> <ul style="list-style-type: none"> • The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations 	<p>demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate.</p> <ul style="list-style-type: none"> • There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process

Option Focus and Description	Pros	Cons	Other comments
		<p>will be required to deliver the requirement by 2041.</p>	<p>of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge.
<p>8a. Expanding a growth area around transport nodes (Minimum)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Expansion of Cambourne by the equivalent of one smaller new settlement (delivery by 2041, using historic delivery rates) <ul style="list-style-type: none"> completions and commitments + 4,500 dwellings = 11,300 (and close to further development of 3,500 at Bourn Airfield New Village) Balance to find spread across 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Able to demonstrate a five-year housing land supply at plan adoption (using the 	<ul style="list-style-type: none"> The lead-in times for strategic transport infrastructure delivery such as East-West Rail, the proposed new station at Cambourne and Cambridgeshire Autonomous Metro may delay housing delivery until after the infrastructure is operational. The annual housing requirement is not met in any year from 2033/34 onwards which would require additional longer-term sites to avoid the loss of a five-year housing land 	<p>-</p>

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Option Focus and Description	Pros	Cons	Other comments
<p>three villages sited along the A428 public transport corridor</p>	<p>Councils' assumptions of lead-in times and build-out rates).</p> <ul style="list-style-type: none"> • New development in the villages (alongside new settlements) would provide a wider choice of housing in the market for people in terms of size and location, and therefore maximise the market absorption rate. • Development at A428 villages provides opportunities for small site delivery to meet NPPF paragraph 68 requirement. 	<p>supply later in the plan period.</p> <ul style="list-style-type: none"> • A new settlement expanding Cambourne would deliver additional housing that is fairly similar to the existing commitments, and it is expected to be delivering alongside Cambourne West and Bourn Airfield which would likely result in competition between the sites, therefore affecting market absorption and build-out rates. 	
<p>4b. Expanding a growth area around transport nodes (Medium) Option focus source of supply</p> <ul style="list-style-type: none"> • Expansion of Cambourne by the equivalent of one smaller new settlement (delivery by 2041, using historic delivery rates) <ul style="list-style-type: none"> – completions and commitments + 4,500 dwellings = 11,300 dwellings (and close to further development of 3,500 at 	<ul style="list-style-type: none"> • Good commuting relationship between jobs and houses to meet demand where it exists. • Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. • Able to demonstrate a five- 	<ul style="list-style-type: none"> • The lead-in times for strategic transport infrastructure delivery such as East-West Rail, the proposed new station at Cambourne and Cambridgeshire Autonomous Metro may delay housing delivery until after the infrastructure is operational. • Focuses a significant amount of development concurrently at Cambourne and along the wider A428 corridor, which creates a 	<ul style="list-style-type: none"> • Under this option the Councils have assumed that the balance would be made up by development at North East Cambridge. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding

Option Focus and Description	Pros	Cons	Other comments
<p>Bourn Airfield New Village)</p> <ul style="list-style-type: none"> Balance to find spread across three villages sited along the A428 public transport corridor (60%) and four further Minor Rural Centre/Group villages sited within 5km of Cambourne (40%). <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using historic delivery rates) 	<ul style="list-style-type: none"> year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). Development at A428 villages provides opportunities for small site delivery to meet NPPF paragraph 68 requirement. 	<ul style="list-style-type: none"> risk of market saturation and absorption rate issues. 	<p>through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge.
<p>8c. Expanding a growth area around transport nodes (Maximum)</p> <p>N.B. Assumes additional delivery by 2041 at committed new settlements.</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Expansion of Cambourne by the equivalent of one larger new settlement (delivery by 2041, using higher delivery rates) <ul style="list-style-type: none"> – completions and 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. 	<ul style="list-style-type: none"> The lead-in times for strategic transport infrastructure delivery such as East-West Rail, the proposed new station at Cambourne and Cambridgeshire Autonomous Metro may delay housing delivery until after the infrastructure is operational. Focuses a significant amount of development concurrently at Cambourne and along the wider A428 corridor, which creates a 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by high delivery rates at North East Cambridge and Cambridge Airport. There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to

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Option Focus and Description	Pros	Cons	Other comments
<p>commitments + 9,000 dwellings = 15,800 dwellings (and close to further development of 3,500 at Bourn Airfield New Village)</p> <ul style="list-style-type: none"> Balance to find (accounting for sources of supply below) spread across: <ul style="list-style-type: none"> three villages sited along the A428 public transport corridor (60%) one Minor Rural Centre and three Group villages within 5km of Cambourne (40%) Additional sources of supply to make up balance <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates) North East Cambridge (delivery by 2041 assumption, using delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure) 	<ul style="list-style-type: none"> Development at A428 villages provides opportunities for small site delivery to meet the NPPF paragraph 68 requirement. 	<p>risk of market saturation and absorption rate issues.</p> <ul style="list-style-type: none"> Not able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing 	<p>relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate.</p> <ul style="list-style-type: none"> There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian

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Option Focus and Description	Pros	Cons	Other comments
		<p>committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p>	<p>Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge.

Issues arising from the wider work so far

- 1.10 In addition to the discussion of the housing growth level options and the spatial options above, there are a number of other interim findings that have been identified thus far in the study.
- 1.11 The relationship between jobs growth and housing has a significant bearing on delivery rates. The rate of jobs growth and the locations where the jobs growth is taking place will significantly affect the demand for housing in terms of timing and location. Further work will be needed to determine the impact of accelerated home and remote working as a result of the COVID-19 pandemic. The GL Hearn Greater Cambridge Housing and Employment Relationships Report assumes that under the Medium and Maximum scenarios the housing supply would be significantly higher than household growth, and therefore the additional housing would be filled by in-migrants moving to the area, the majority of which would be for employment reasons. Therefore, in order to expand housing supply beyond current delivery levels, the Councils need to consider what range of homes would be attractive to in-migrants to Greater Cambridge and try to match the new housing supply with the demand. The location of homes relative to employment will be an important consideration, and we will continue to explore this at later stages of this study.
- 1.12 With regards to the windfall analysis, Greater Cambridge have historically taken a literal interpretation of windfall under the 2012 NPPF, assuming that all non-allocated sites are windfall (providing they are not on garden land). In practice many local planning authorities use a "small sites windfall" figure that is set below the HELAA minimum site size threshold so that there is no risk of double-counting small sites supply with larger sites that are assessed in greater detail through the HELAA process. This approach would provide more detailed information about urban capacity and phasing for large sites than relying on a windfall allowance and is something that should be considered by the Councils as the plan-making process continues, to consider whether this alternative approach is practicable.

2. Introduction

- 2.1 AECOM and HDH Planning and Development were appointed by the Greater Cambridge Shared Planning Service (GCSP) in August 2020 to undertake research on housing delivery to provide evidence to support the emerging Greater Cambridge Local Plan, feeding in to the Housing and Economic Land Availability Assessment (HELAA) process and updates to the Greater Cambridge housing trajectory.
- 2.2 The Councils require the production of this Housing Delivery Study at an early stage of the plan-making process to inform decisions that are made regarding the selection of a preferred spatial strategy option and annual housing requirement figure (potentially including a stepped annual requirement), by analysing the Council's evidence with a view to ensuring the Councils have a robust housing trajectory and defensible housing land supply position over the new joint Local Plan period.
- 2.3 At this stage the Councils are considering three potential housing requirement quanta which have been applied to eight different spatial distributions, which has resulted in the identification of 24 unique spatial options. Interim findings drawn from our own research and secondary sources has been synthesised to provide a commentary on the 24 unique spatial options under consideration by the Greater Cambridge Shared Planning Service, and the Councils' assumptions underpinning them. This document is issued early on in the timeline for the Housing Delivery Study and all initial findings are provided without prejudice to later work undertaken following further research, analysis or engagement with stakeholders.
- 2.4 At present the range of options vary significantly in terms of "how much" and "where". We recognise that through the process of plan making options will be narrowed down towards a preferred option. The Housing Delivery Study will be able to further advise on lead-in times, build-out rates and market absorption once further detailed site-specific considerations are known.

Assessment of strategic options and spatial scenarios

- 2.5 Cambridge City Council and South Cambridgeshire District Council completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.
- 2.6 The Councils have asked consultants producing Local Plan evidence studies, including the Housing Delivery Study, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

- 2.7 The initial evidence findings will be reported to the Joint Local Plan Advisory Group in autumn 2020 and help to inform further engagement with stakeholders.
- 2.8 Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below in **Figure 2.1**.

Process of Local Plan preparation

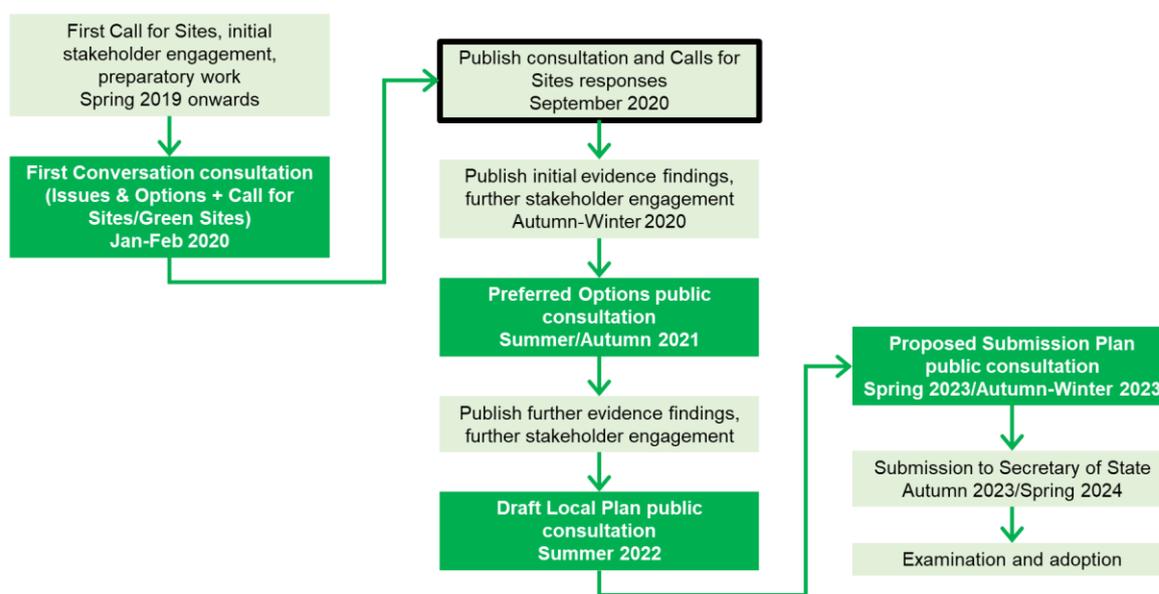


Figure 2.1: Local Plan Process

2.9 The three growth level options tested through this report are:

- a) Minimum – Standard Method homes-led
- b) Medium – central scenario employment-led
- c) Maximum – higher employment-led

2.10 The spatial scenarios tested through this report are:

1. Densification of existing urban areas
2. Edge of Cambridge – outside the Green Belt
3. Edge of Cambridge – Green Belt
4. Dispersal – new settlements
5. Dispersal – villages
6. Public transport corridors
7. Supporting a high-tech corridor by integrating homes and jobs
8. Expanding a growth area around transport nodes

Methodology

2.11 The final Housing Delivery Study will use a literature review and analysis of secondary data sources to supplement a review of all data supplied by GCSP

and evidence collected by the project team (via a survey, interviews and workshops) to provide commentary and guidance on the following matters:

- Implications for the Councils of different annual housing requirement options and feasibility of a stepped annual requirement
- Implications for housing delivery of each of the potential spatial scenarios (and commentary of location specific issues and opportunities)
- Windfall analysis
- Lead-in times and build-out rates assumptions
- Market absorption in terms of variety of types of sites and location
- Construction industry capacity
- Advice on deliverability and/or developability insofar as it relates to the five year housing land supply, housing trajectory and housing delivery test (including consideration of a stepped annual requirement)
- Potential of self and custom-build, modern methods of construction, older peoples housing, build to rent and specialist forms of housing to increase delivery rates
- Alternative options available to increase housing delivery

2.12 The consultant team are working iteratively with GCSP to review the housing delivery implications of the Councils' emerging preferred spatial strategy as work progresses.

2.13 Central to the Housing Delivery Study is engagement with the development industry and stakeholders in the local housing market. Whilst much of the analysis in this report is based on quantitative research (e.g. housing statistics), this is a forward looking study and so it is necessary to engage with those entities who will deliver housing over the plan period. The quantitative research will draw on development from across similar markets and must be put in the local context and then tested through further consultation and engagement via both surveys and interviews/workshops in order to collect qualitative information in relation to the Housing Market Area and the active participants in the market.

Surveys

2.14 In order to capture the full spectrum of housing bodies the following organisations will be surveyed:

- Housebuilders (medium and large, regional and national)
- Housing Associations and registered providers
- Public sector groups (e.g. Non-departmental public bodies)
- Specialist developers
- Landowners and promoters
- Agents
- Statutory undertakers and utilities companies

2.15 A questionnaire has already been sent to consultees and included the following themes:

- Market Capacity
- Industry Capacity
- Infrastructure Capacity
- Housing demand and need
- Market prospects (COVID-19, Brexit etc)
- Interventions

Workshops

2.16 Following the survey stage, a number of parties will be invited to participate in one to one surveys and thematic group workshops - to discuss in greater detail the themes covered in the questionnaire. These activities will be used to test the assumptions and invite feedback on the data collected to date. The nature of the study and the ambitious levels of housing delivery mean that it is particularly important to understand the industry's current thinking and capacity for delivering housing. This is unlikely to be fully captured through the questionnaire alone.

2.17 These discussions will allow the project team to test the initial findings and quantitative research. The workshops and interviews will be an opportunity for those involved in housing delivery to comment further and will be used to explore these matters in greater detail, in order to advise GCSP on those matters critical to housing delivery and the emerging spatial options. It is inevitable that a range of views will be expressed (a wide range of views are already being expressed about the impact of COVID-19 on the housing market and housebuilding). We will capture these views and take these into account in our conclusions and advice to the Councils in the final report.

Limitations

2.18 The interim findings presented in this report, as at November 2020, provide a snapshot of the study findings in advance of more survey responses and commencement of the workshop and interviews stage. As such the information contained herein is based on the interim review findings drawn from secondary sources, data supplied by GCSP and the professional judgements of the consultant team. It is also based on the Councils' own assumptions on lead-in times and build-out rates. The final Housing Delivery Study will benefit from further primary data collection and more in-depth analysis and will contribute to testing and updating the Councils' assumptions to advise on the delivery implications for housing trajectories, five-year housing supply calculations and Housing Delivery Test calculations from the different options.

3. Analysis

- 3.1 Using the Councils' distribution of development for each of the eight spatial options and the levels of growth at each location for the three housing growth level options, 24 unique housing trajectories have been prepared to assess housing deliverability over the plan period (see **Appendix 1**).
- 3.2 To prepare these housing trajectories we have drawn upon existing published commitments data over the existing Local Plan period as set out in the April 2020 Housing Trajectory and Five Year Housing Land Supply document. Trajectory information has been provided by the Councils for the strategic sites that are anticipated to deliver beyond the current Local Plan period to 2041. At this interim stage the trajectories included in **Appendix 1** use the Councils' own assumptions for lead-in times and build-out rates, provided in the November 2019 Housing Trajectory² and the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.
- 3.3 We have used the existing commitments and windfall allowance data to prepare a baseline trajectory which forms a “constant” across all spatial options – these rows are shown in grey in the tables in **Appendix 1**. The spatial options all add additional sources of supply to “top up” the baseline to meet the housing requirement options – these rows are shown in blue in the tables in **Appendix 1**.

Comparison of baseline trajectory to housing requirement options

- 3.4 **Figure 3.1** (below) is the baseline trajectory graph showing supply against the existing Local Plan requirement and the three housing requirement quantum options. It also shows the historic completions data from 2002/03 to 2018/19 against the adopted housing requirement at the time. The data behind the baseline trajectory is broken down by site source in the grey rows in the tables in **Appendix 1**. **Figure 3.2** then shows how the baseline trajectory fluctuates against the housing requirement option figures over time, identifying when new sources of supply need to be added.

² Available at: <https://www.cambridge.gov.uk/planning-policy-monitoring-reports>

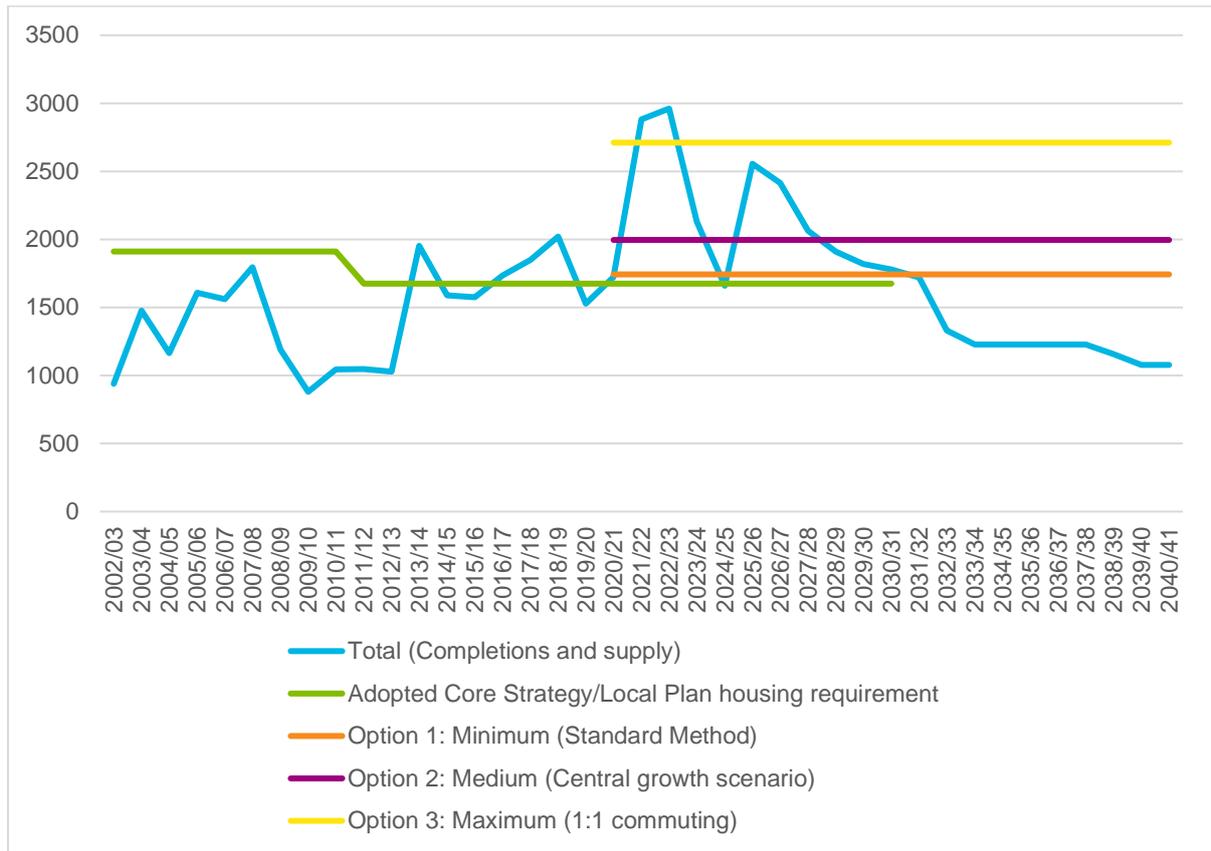


Figure 3.1: Baseline trajectory vs emerging housing requirements from 2020/21

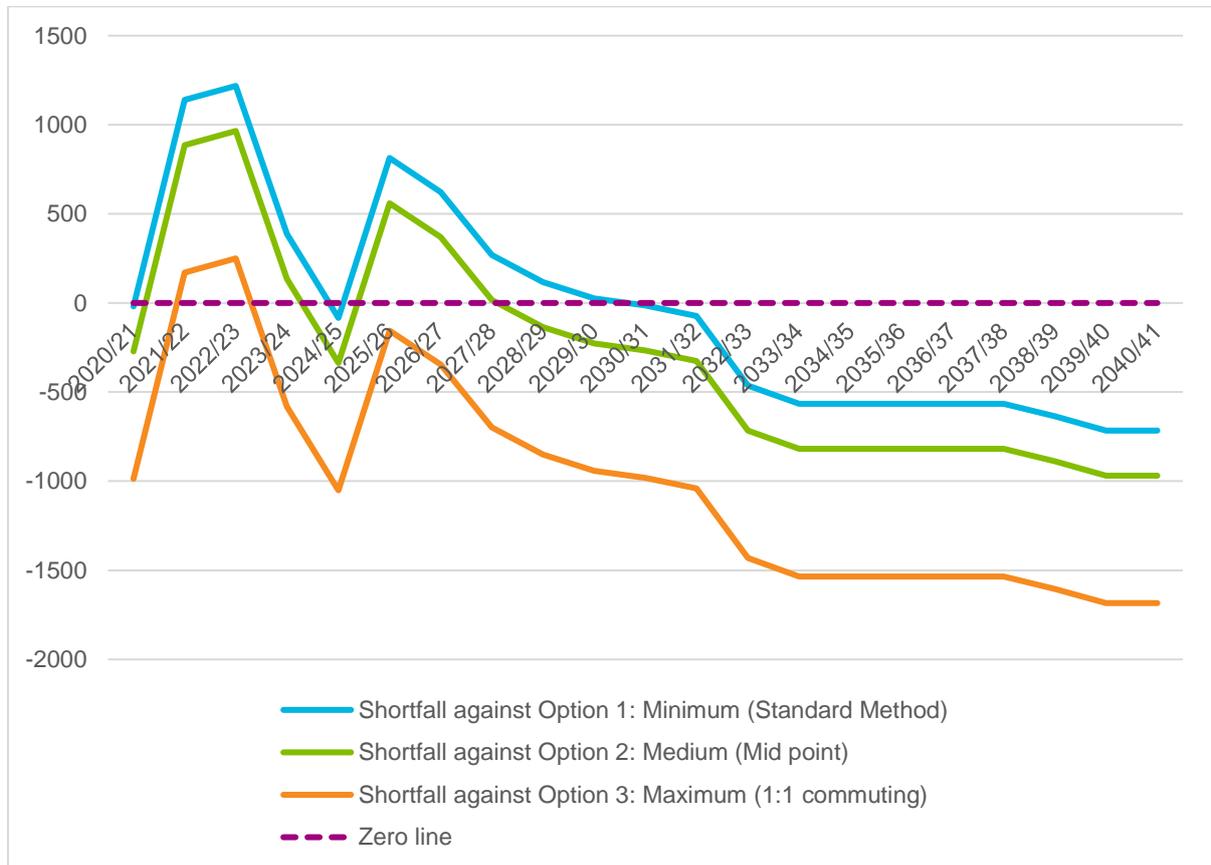


Figure 3.2: Baseline housing trajectory comparison against different requirement options

- 3.5 **Figure 3.1** and **Figure 3.2** show comparisons of the baseline trajectory (all sites allocated in the adopted Local Plans and Area Action Plans, plus the windfall allowance, and sites with extant planning permission) to the emerging housing requirements. As is to be expected, the trajectory shows that supply drops significantly after 2031, the end date of the current Local Plans. Supply over the longer-term beyond 2031 comes from the new settlement strategic site allocations that, due to their long lead-in times and the scale of the allocations, will be built out beyond the current Local Plan period, and some of them also beyond the emerging Local Plan period (2041).
- 3.6 As can be seen in the figures there is a shortfall in 2020/21 and 2024/25 against the comparative housing requirement figures being tested. This shortfall is mitigated by anticipated over-delivery in 2021/22 and 2022/23 and 2023/24 for all options except the Maximum, however these trajectory figures are based on information prior to COVID-19 and delivery in 2021/22 and 2022/23 will need to be monitored.
- 3.7 The baseline trajectory requires additional sources of supply towards the mid-latter part of the plan period to meet the minimum and medium housing requirement options. The maximum housing requirement figure requires a significant number of new sources of supply to meet the requirement as only the 2021/22 and 2022/23 monitoring years are above the Maximum requirement.
- 3.8 The Maximum annual requirement would not be met in any single year by existing commitments at currently anticipated build out rates, requiring a significant number of new allocations to be made, including smaller sites that can be delivered early during the plan period. As the baseline trajectory shows under-delivery prior to plan adoption (assumed to be 1st April 2025 for the purposes of this report) under the Maximum option, a stepped annual housing requirement may be necessary, however this will significantly increase the annual requirement in the mid-latter part of the plan period above that which has been delivered in Greater Cambridge in the past, as shown by the data from 2002/03 to 2018/19 in **Figure 3.3** and **Appendix 3** which averages at 1,439 dwellings per annum in Greater Cambridge over that period. Sustaining such unprecedented levels of development locally over a 10-15 year period would be challenging.

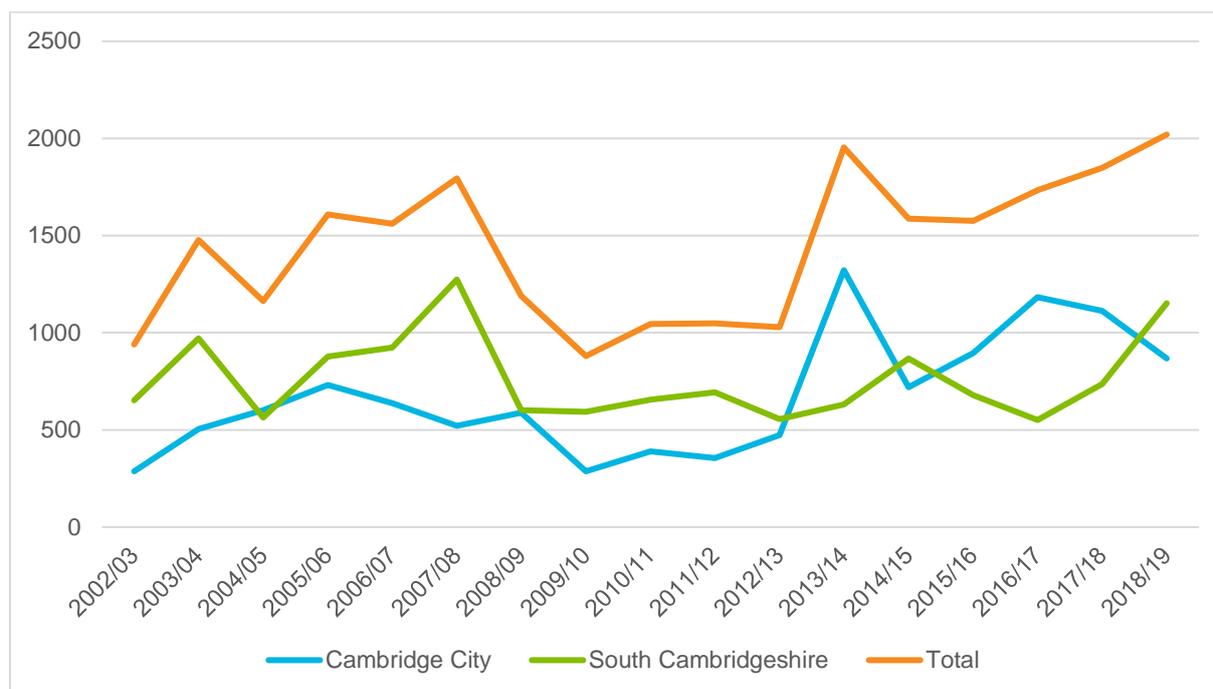


Figure 3.3: Historic delivery in Greater Cambridge 2002/03-2018/19

3.9 Looking at the historic completions data, over the period 2002/03-2018/19 the average level of completions was 1,439 dwellings but the trend has increased in recent years as additional supply materialises into delivery on the ground. The 2008/09 recession led to delays in completions on a number of sites, which is reflected in the lower rates in the following years. **Table 3.1** shows the increase that each of the three housing requirement options would result in against these historic delivery rates. The Minimum requirement figure is similar in percentage terms to the adopted Local Plan requirements, the Medium option would represent a further increase of around 20% to the minimum and adopted Local Plan requirements, but the Maximum requirement would be a significant increase of 88% compared to historic delivery rates and an increase of 62% compared to the adopted Local Plan requirements. Delivering against the Maximum scenario would be a step change in housing delivery locally.

Table 3.1: Comparison of the housing requirement options against average historic delivery 2002/03-2018/19

Requirement figure	Quantum (dwellings per annum)	Percentage increase from historic rates (2002/03-2018/19)
Current Local Plan (2011-2031)	1,675	16%
Minimum	1,743	21%
Medium	1,996	39%
Maximum	2,711	88%

Stepped annual housing requirement

3.10 All of the spatial options assume a “flat” housing requirement across the Joint Local Plan period; however, the Planning Practice Guidance allows for Local

Plans to adopt a “stepped” housing requirement which varies during the plan period. The guidance³ on stepped housing requirements is presented below:

When is a stepped housing requirement appropriate for plan-making?

A stepped housing requirement may be appropriate where there is to be a significant change in the level of housing requirement between emerging and previous policies and / or where strategic sites will have a phased delivery or are likely to be delivered later in the plan period. Strategic policy-makers will need to identify the stepped requirement in strategic housing policy, and to set out evidence to support this approach, and not seek to unnecessarily delay meeting identified development needs. Stepped requirements will need to ensure that planned housing requirements are met fully within the plan period. In reviewing and revising policies, strategic policy-makers should ensure there is not continued delay in meeting identified development needs.

Where there is evidence to support a prioritisation of sites, local authorities may wish to identify priority sites which can be delivered earlier in the plan period, such as those on brownfield land and where there is supporting infrastructure in place e.g. transport hubs. These sites will provide additional flexibility and more certainty that authorities will be able to demonstrate a sufficient supply of deliverable sites against the housing requirement.

Paragraph: 021 Reference ID: 68-021-20190722

Revision date: 22 July 2019

- 3.11 In addition to the PPG on stepped housing requirements for the plan period, there is also the guidance on how to address past housing shortfalls during the plan period:

How can past shortfalls in housing completions against planned requirements be addressed?

Where shortfalls in housing completions have been identified against planned requirements, strategic policy-making authorities may consider what factors might have led to this and whether there are any measures that the authority can take, either alone or jointly with other authorities, which may counter the trend. Where the standard method for assessing local housing need is used as the starting point in forming the planned requirement for housing, Step 2 of the standard method factors in past under-delivery as part of the affordability ratio, so there is no requirement to specifically address under-delivery separately when establishing the minimum annual local housing need figure. Under-delivery may need to be considered where the plan being prepared is part way through its proposed plan period, and delivery falls below the housing requirement level set out in the emerging relevant strategic policies for housing.

Where relevant, strategic policy-makers will need to consider the recommendations from the local authority’s action plan prepared as a

³ Available at: <https://www.gov.uk/guidance/housing-supply-and-delivery>

result of past under-delivery, as confirmed by the Housing Delivery Test.

The level of deficit or shortfall will need to be calculated from the base date of the adopted plan and should be added to the plan requirements for the next 5 year period (the Sedgefield approach), then the appropriate buffer should be applied. If a strategic policy-making authority wishes to deal with past under delivery over a longer period, then a case may be made as part of the plan-making and examination process rather than on a case by case basis on appeal. (N.B. This was the case with the adopted Local Plans)

Where strategic policy-making authorities are unable to address past shortfalls over a 5 year period due to their scale, they may need to reconsider their approach to bringing land forward and the assumptions which they make. For example, by considering developers' past performance on delivery; reducing the length of time a permission is valid; re-prioritising reserve sites which are 'ready to go'; delivering development directly or through arms' length organisations; or subdividing major sites where appropriate, and where it can be demonstrated that this would not be detrimental to the quality or deliverability of a scheme.

Paragraph: 031 Reference ID: 68-031-20190722

Revision date: 22 July 2019

3.12 In light of the PPG above it is possible to adopt a plan that varies the housing requirement over the plan period:

- For a step change in housing delivery;
- To accommodate the lead-in times of strategic sites which may come forward later in the plan period; and
- To address past under-delivery.

3.13 A number of case study examples are presented in **Appendix 4** to understand the existing precedents in how Councils and Planning Inspectors have dealt with proposals for stepped annual housing requirements and attempts to justify the use of the Liverpool method⁴ instead of the Sedgefield approach advocated in the PPG.

3.14 Under the PPG to support a stepped housing requirement there needs to be "evidence to support the approach" and the Councils should "not seek to unnecessarily delay meeting identified development needs". As the case study examples demonstrate evidence in this regard can include a lack of deliverable land supply in the first five years, sustainability appraisal evidence showing that sites that could come forward at the beginning of the plan period are unsustainable, or enabling infrastructure is required to be in place before development can take place. The HELAA, Sustainability Appraisal and Infrastructure Delivery Plan evidence will be key in informing the Council's decision-making in this regard.

⁴ The Liverpool method seeks to deliver housing to meet a past shortfall over the entire plan period; whereas the Sedgefield method, endorsed in the Planning Practice Guidance, seeks to meet the shortfall in the first 5 years of the plan.

- 3.15 In terms of the “significant change in the level of housing requirement between emerging and previous policies” point in the PPG, the Councils may be able to justify a stepped annual housing requirement if there is evidence that the local housebuilding industry needs time to build capacity to deliver the increased number of dwellings. At this moment in time we do not have this market housebuilding capacity evidence as we are awaiting the survey results and feedback from the development industry. Given recent levels of delivery the maximum development quantum option is the only option which potentially could justify a stepped annual housing requirement figure in line with PPG requirements. However, the use of a stepped annual housing requirement figure for a maximum growth level, that is significantly higher than historic delivery levels, brings into play market absorption issues and a risk that the local market is unable to absorb such a number of new dwellings.
- 3.16 Where existing levels of housing delivery have been constrained by policies that are proposed to be removed or amended (such as Green Belt release) this can meet the threshold of being judged to be a “step change” in delivery. It is arguable that the current Local Plans for Cambridge and South Cambridgeshire could have met this “step change” criterion but a stepped annual housing requirement was not justified then, instead the Councils successfully argued for the use of the Liverpool method for calculating five year supply and that their five year supply should be calculated jointly due to the development strategy and associated phasing of development across the plan period.
- 3.17 One argument in favour of a stepped requirement in Greater Cambridge is to ensure housing delivery aligns with planned infrastructure delivery, for example East West Rail, Cambridge Autonomous Metro, Oxford-Cambridge Expressway, and proposals at North East Cambridge and potentially Cambridge Airport too.
- 3.18 At present the Greater Cambridge Local Plan has a proposed base date of 1st April 2020. The July 2020 Local Development Scheme⁵ shows a planned submission date of Autumn 2023 or Spring 2024, which allowing for Examination could allow for an adoption date in 2025. During the first five years of the plan period, ahead of adoption, a shortfall in delivery against a higher annual housing requirement is likely to accrue, based on existing commitments. For a higher annual housing requirement, the Councils would therefore need to make a case to use the Liverpool method for calculating five-year housing land supply or a stepped annual housing requirement that starts at a lower level alongside the use of the Sedgefield method for calculating five-year housing land supply, if they are to be able to demonstrate a five-year housing land supply at plan adoption. Alternatively, the Councils could move the base date of the plan period to a later date to reduce the size of the shortfall.
- 3.19 If it can be assumed that there is little scope to introduce significant additional sources of new supply into the trajectory during the period to 2025 when the plan is due to be adopted (due to the lead-in times before new allocations are delivered) then the baseline trajectory can be taken as broadly being the de facto land supply to 2025.

⁵ <https://www.greatercambridgeplanning.org/media/1258/greater-cambridge-local-development-scheme-2020.pdf>

- 3.20 Under the Maximum growth option, the annual housing requirement is not met in any single year over the period 2020/21 to 2024/25, and therefore cumulatively over the period there is a shortfall of 2,199 dwellings. In addition to the high annual requirement of 2,711 dpa, the shortfall of 2,199 dwellings would need to be provided within the first 5 year period after plan adoption under the Sedgefield approach, which would add 440 dpa to the Maximum annual housing requirement for the period 2025/26 to 2030/31 – 3,151 dpa in total. The 3,151 dpa would then need to have a buffer applied to it, which would be 10% if the Councils wish to confirm a five-year housing land supply through the Local Plan Examination process. This would increase the annual requirement for the five year period to 3,466 dpa. With such a high requirement over the first 5 years after plan adoption from 2025/26 to 2030/31 it may not be possible for the Councils to demonstrate a five-year housing land supply without adopting a stepped annual housing requirement and/or using the Liverpool method to meeting the shortfall over the plan period.
- 3.21 However, utilising a stepped annual housing requirement and/or the Liverpool method will increase the Maximum growth option 2,711 dpa requirement over the mid-latter part of the plan period to a level significantly higher than has been delivered in Greater Cambridge in the past, for a sustained amount of time. It is considered unlikely that this level of development would be able to be sustained in the Greater Cambridge area over such a length of time. The Local Plan base date could be moved later to 2021/22 which avoids the inclusion of 2020/21's housing completions in the plan period, however the 2023/24 and 2024/25 years would still under-deliver against the Maximum annual housing requirement and therefore will still result in a shortfall to be met later in the plan period.

Commentary on overall levels of growth

- 3.22 **Appendix 5** sets out a comprehensive review of the available literature in respect of housing delivery, market absorption, build out rates and lead in times. These factors are crucial to understanding whether the overall levels of growth being considered by GCSP are realistic and deliverable. The published research shows that historic delivery rates are highly influenced by the private sector's ability to build and sell homes based on market absorption and their own business models.

Build out rates for strategic sites

- 3.23 At this interim stage, we would advocate that build-out rate assumptions of no more than an average of 300 dpa per strategic site should be used for calculating housing trajectories and identifying spatial options. This is supported by an interim analysis of comparator sites drawn from the OxCam Arc, Combined Authority area and other strategic sites in strong housing market areas (**Appendix 2**).
- 3.24 Based on AECOM's recent experience working on Milton Keynes' Plan:MK, the Harlow and Gilston Garden Town, Manydown North (a Government designated Garden Town) and Welborne Garden Village (Fareham), we have successfully defended assumptions with a maximum average build out rate of ~300 dwellings per annum. However, the Planning White Paper and sustained Government initiatives aimed at increasing the rate of housebuilding mean that

we cannot discount the ability to ‘buck’ these trends moving forward should the GCSP be successful in delivering interventions designed to mitigate market absorption risk and encourage new entrants into the market (that would not directly compete with housebuilders). Indeed, the first Garden Cities and New Towns were able to deliver significantly higher build out rates compared to more recent strategic-scale schemes by adopting alternative models of delivery. We have also found evidence of higher than average build out rates for sites involving Development Corporations and the public sector proactively delivering infrastructure and serviced sites (both in the UK and Europe). The survey, interviews and workshops in the second stage of the study will explore the potential of higher average build out rates/new models for delivery (alongside a more in-depth analysis of secondary sources).

3.25 In terms of town-wide market absorption Milton Keynes delivered circa 2,500 dpa at its peak, albeit with a large proportion of social housing. Between 1981 – 2020 data from Milton Keynes Council shows delivery in excess of 2,000 dwellings in a number of years (see **Figure 3.4**) in a weaker housing market than Greater Cambridge. From 1981 to 2010 Swindon had multiple growth sites representing approximately 34,000 units and averaging in the region of 1,200 units/pa. These precedents place the projected trajectories for Greater Cambridge into a historical context and demonstrate that such levels have been achieved in the past (albeit under different market and policy conditions).

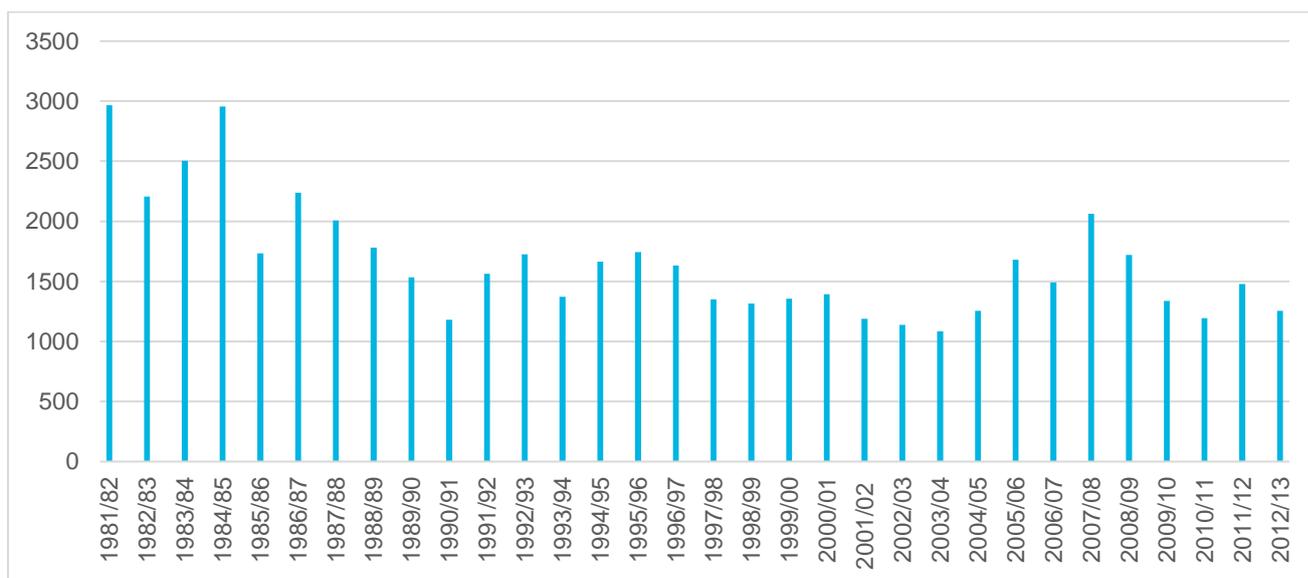


Figure 3.4: Milton Keynes Council House Completions in Designated Area 1981-2020

The Nature of the Existing Market and Capacity for Absorbing New Build Homes

3.26 This section analyses and comments on the nature of the existing market for homes in Greater Cambridge and how it affects delivery rates. That is, the tenure, type and size of homes that have been delivered and bought or rented in the market in recent years. It is not the purpose of this section to replicate the local housing need assessment; rather to set out how the nature of need and demand has shaped absorption rates in the past and how and whether this is expected to change in the future.

3.27 This analysis:

- Examines the pattern of recent completions in Greater Cambridge in terms of tenure and size mix
- Examines the pattern of market sales in Greater Cambridge, focusing on new build homes
- Comments on previous and emerging research on the nature of demand and need in the area in terms of:
 - The relationship between jobs and homes
 - The mix of housing required

Recent Completions in Greater Cambridge

3.28 The pattern of recent completions provides a guide on the scale and type of housing that can be absorbed into the market. However, past completions are constrained by previous planning policies, including housing targets, affordable housing policies etc. They do not reflect what might be delivered in the absence of policy constraints. Nevertheless, past completions provide a useful indication of the mix of market and affordable housing that can be absorbed in the local market.

3.29 **Table 3.2** shows that, on average, over the last 8 years (2011/12-2018/9), 1,599 homes have been completed per annum in Greater Cambridge. This is comprised of 866 per annum in Cambridge and 733 per annum in South Cambridgeshire. Overall, 31% of completions over this period were affordable homes. Almost 500 affordable homes were delivered on average in each year over the last 8 years.

Table 3.2: Completions by tenure, 2011/12-2018/19, Greater Cambridge

Tenure Type	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	Per annum	% affordable
Cambridge	355	473	1322	720	896	1183	1112	868	866	-
Market	295	417	900	523	596	725	445	523	553	-
Affordable	60	56	422	197	300	458	667	345	313	36%
South Cambridge	693	555	631	868	679	551	737	1152	733	-
Market	525	486	481	539	550	435	557	811	548	-
Affordable	168	69	150	329	129	116	180	341	185	25%
Greater Cambridge	1048	1028	1953	1588	1575	1734	1849	2020	1599	-
Market	820	903	1381	1062	1146	1160	1002	1334	1101	-
Affordable	228	125	572	526	429	574	847	686	498	31%

Source: Local Authority Data

3.30 Overall, over the last 8 years, 54% of completions have been 1 and 2 bed properties with 45% larger 3 and 4 bed homes (plus 1% where the size was unknown). The mix has been broadly balanced between smaller and larger homes as a result of Cambridge delivering predominately smaller properties (70% 1 and 2 beds) and South Cambridgeshire delivering predominately larger properties (60% 3 and 4 beds). The largest proportion of homes delivered in Greater Cambridge was 2 bed properties, accounting for 39% of all completions over the last 8 years. This is common to many areas since 2 beds can be delivered as flats or houses and so are present on higher density urban flatted developments as well as lower density suburban and rural schemes.

3.31 **Table 3.3** shows that very few of the smallest properties (1 bed) have been completed in South Cambridgeshire and fewer larger (4 bed) properties in Cambridge City. This is likely to be reflective of the type of sites developed. The completions data shows that, together, Cambridge and South Cambridge provide a complimentary mix of new housing.

Table 3.3: Completions by Size, 2011/12-2018/19

Size Type	Completions per annum 2011/12-2018/19 (8 year average)	%
Cambridge	-	-
1 bed	231	24%
2 beds	416	44%
3 beds	169	18%
4+ beds	123	13%
Unknown	9	1%
Total	948	100%
South Cambridgeshire	-	-
1 bed	67	8%
2 beds	243	30%
3 beds	243	31%
4+ beds	229	29%
Unknown	15	2%
Total	797	100%
Greater Cambridge	-	-
1 bed	265	15%
2 beds	659	39%
3 beds	412	24%
4+ beds	352	21%
Unknown	24	1%
Total	1,711	100%

Source: Local Authority Data

3.32 Sales of new homes within Greater Cambridge indicate the capacity of the local market to absorb new housing completions. Again, this is limited by the number of completions (constrained by policy and other factors) so it does not tell us what the upper limit of market sales might be i.e. the limit of demand.

3.33 On average over the last 8 years (2011/12-2018/19) there have been just over 4,500 transactions per annum in the Greater Cambridge area (**Table 3.4**). The majority of these were in South Cambridgeshire (64% of all sales). Overall, 19% of all sales were new build properties (835 per annum in Greater Cambridge) with almost one quarter of sales in Cambridge being new build compared to 15% in South Cambridgeshire. On the face of it, this suggests Cambridge has a significant capacity to absorb new build market housing, indicative of strong demand. It also might suggest scope for South Cambridgeshire to absorb a higher proportion of new build sales. The reason

for this is that overall sales are already higher in the District, suggesting robust demand and that there is a much larger sales market where new build properties could increase their share.

- 3.34 Note that this level of sales is less than the number of new build market properties completed each year (1,100 per annum). This may reflect a lag between completion and sale meaning that completions and sales in a single year will not match up. However, it might be expected that this would even out over an 8 year time period.
- 3.35 The difference between average completions in the market 2011/12-2018/19 (1,100 per annum) and average sales of new build homes (835 per annum) is 266 homes – almost one quarter of completions. In practice, the difference is higher because a proportion of affordable completions are intermediate properties for sale which should also be reflected in the sales data.
- 3.36 The difference exists in both Cambridge and South Cambridgeshire but is more pronounced in Cambridge. The difference might be explained in large part by new build properties, particularly flats in Cambridge, being rented out by the developer rather than sold on the open market.

Table 3.4: Sales of Homes, New Build and Existing Stock, 2011/12-2018/19

	Cambridge				South Cambridgeshire				Greater Cambridge			
Year	New	Existing	Total	% New	New	Existing	Total	% New	New	Existing	Total	% New
2011/12	210	1,250	1,460	14%	346	1,855	2,201	16%	556	3,105	3,661	15%
2012/13	670	1,322	1,992	34%	386	2,060	2,446	16%	1,056	3,382	4,438	24%
2013/14	581	1,377	1,958	30%	455	2,428	2,883	16%	1,036	3,805	4,841	21%
2014/15	314	1,341	1,655	19%	332	2,188	2,520	13%	646	3,529	4,175	15%
2015/16	488	1,151	1,639	30%	255	2,074	2,329	11%	743	3,225	3,968	19%
2016/17	425	1,219	1,644	26%	276	2,047	2,323	12%	701	3,266	3,967	18%
2017/18	263	1,104	1,367	19%	420	1,930	2,350	18%	683	3,034	3,717	18%
2018/19	224	1,102	1,326	17%	450	1,836	2,286	20%	674	2,938	3,612	19%
Total	3,175	9,866	13,041	24%	3,501	19,531	23,032	15%	6,676	29,397	36,073	19%
Per Annum	397	1,233	1,630	24%	438	2,441	2,879	15%	835	3,675	4,509	19%

Source: Land Registry Price Paid Data

3.37 A substantial proportion of new home sales in the last 8 years have been flats (35% of new build sales) (**Table 3.5**). This is largely comprised of new build flats sold in Cambridge. Detached property sales accounted for the second most common new build property type to be sold, largely comprised of sales in South Cambridgeshire. Sales of new build terraces were important in both authority areas (accounting for 22% of new build sales).

Table 3.5: New Build Sales by Type, 2011/12-2018/19, Greater Cambridge

2011/12-2018/19 (eight years)	Cambridge	South Cambridgeshire	Greater Cambridge
New build Sales	3,175	3,501	6,676
per annum	397	438	835
Of which:	-	-	-
- Flats	59%	11%	35%
- Terraces	22%	22%	22%
- Semis	8%	22%	15%
- Detached	11%	45%	28%

Source: Land Registry Data

3.38 It is worth putting these completions and sales into context in terms of the size of the housing stock in Greater Cambridge. **Table 3.6** shows that, compared to the size of the dwelling stock in 2020 (March), Cambridge added 1.5% to its stock each year on average over the last 8 years. The figure was 1.1% in South Cambridgeshire. Market completions accounted for 0.9% of the stock each year and new build sales represented 0.7% of the housing stock.

Table 3.6: Completions and Sales compared to Housing Stock, Greater Cambridge

Category	Cambridge	South Cambridgeshire	Greater Cambridge
Completions (8 year average)	866	733	1,599
Market completions (8 year average)	553	548	1,101
New build Sales (8 year average)	397	438	835
Housing stock (2020)	58,340	68,500	126,840
Completions as % of stock	1.5%	1.1%	1.3%
Market completions as % of stock	0.9%	0.8%	0.9%
New build Sales as % of stock	0.7%	0.6%	0.7%

Source: AECOM using Valuation Office Agency dwelling stock data March 2020 and data from previous tables

Table 3.7: Detailed Components of Housing Completions, 2011/12-2018/19, Greater Cambridge

Type of Property	Per annum (8 year average) %	
Total completions	1,600	100%
Market	1,067	67%
Studios	18	1%
Flats	390	24%
Houses	658	41%
Affordable	498	31%
Other	35	2%
Student	10	1%
Older person	1	0%
Gypsy/Travelling Showmen	15	1%
Live work	0	0%
Non-permanent	2	0%
Holiday homes	6	0%

Source: Local authority completions data

3.39 It is useful to breakdown housing completions further to understand the current components of supply. **Table 3.7** can be summarised as follows:

- 67% of completions are market properties. However, sales data from the last eight years (same time frame as completions) suggests that not all of these properties are sold on the open market. A large proportion may be directly rented out in the private sector. There may also be some lag between completion and sale.
- Affordable supply accounts for 31% of completions. This is a mixture of affordable home ownership (intermediate/ key worker housing) and social/affordable rented. Some of the key worker housing will have been for rent.
- Affordable homes make up only 31% of completions. Given the scale of need in the area and objectives in the Greater Cambridge Housing Strategy 'Homes for Our Future' to prioritise the provision of affordable/social rented housing within affordable housing supply, this suggests there is significant scope to increase the provision of subsidised rented properties. This could enable expansion of delivery rates if it can be provided viably (subject to grant conditions and site specific viability).
- It is likely that some older persons specialist housing will have been classified in the data as market completions or social/affordable rent. Nevertheless, there appears to have been limited provision of specialist forms of housing suggesting there is scope to expand specialist provision in order to tap into other segments of demand and to support higher delivery rates.

Jobs and Homes and Implications for Delivery Rates

3.40 The Greater Cambridge Housing and Employment Relationships Report (prepared by GL Hearn for GCSP) considers:

- The number of jobs likely to be supported by the homes required under the standard method
- The number of homes required to provide for the workforce to supply two employment projections (central and higher)

3.41 There are a number of relevant points to note from this research in relation of the delivery of new homes in Greater Cambridge.

3.42 Even under the standard method, it is assumed that new homes will be taken up by people moving into the area. The reason for this is that the standard method calculation provides a housing requirement (1,743 per annum) which is higher than household projections (1,222 per annum). This is included in the national methodology to allow for greater household formation following a period in which it was suppressed. However, not all of the extra housing will be filled by these households – GL Hearn argue that it will allow some extra households to form but not to fill all of the additional homes. Therefore, the additional homes will be taken up by in-migrants. AECOM note that this would be a good outcome in terms of the housing, labour market and travel patterns because these in migrants could be people who already work in Greater Cambridge but commute in from further afield e.g. because of cheaper housing.

3.43 Nonetheless, delivery of new homes in line with the standard method requirement means that these homes need to reflect the needs and demands of in-migrant households as well as existing and newly forming households living within the area.

3.44 We note that the standard method housing requirement (NPPF 2019) of 1,743 dwellings per annum is not substantially different to the average level of completions delivered in Greater Cambridge over recent years (1,439 dpa from 2002/03-2018/19). It is likely that this would represent 'business as usual' in terms of the current delivery rates and location and mix of homes provided.

3.45 Evidence contained in the CPIER report (2018) suggests that, in the past, employment growth in Greater Cambridge has not been matched by housing supply. This is reflected in house price and rent increases in the area and also in long commuting distances to Cambridge (see Figure 4, Section 1.4, CPIER report).

3.46 The CPIER report also argued that housing numbers for the area should reflect past under delivery i.e. that new supply should address the backlog of needs and demand in Greater Cambridge. This point remains relevant regardless of the outcome of employment growth following the COVID-19 pandemic and sharp recession.

3.47 It is important to note that the Standard Method (NPPF 2019) includes an affordability uplift to household projections which is designed to take account of previous under delivery of housing. The NPPF standard method does not, therefore, expect further uplift in order to make up for the failure to meet previous housing targets – the affordability uplift is considered sufficient to compensate.

- 3.48 The CPIER report also argued that as well as an adequate supply of housing, a range of types and price points of new homes were needed, reflecting the ability of different households to afford housing.
- 3.49 Larger scale housing supply, linked to employment growth, is modelled in the Greater Cambridge Housing and Employment Relationships Report:
- The central employment scenario, which anticipates the creation of 58,441 jobs 2020-2041 (2,782 jobs per annum), is associated with the need for 1,996 homes per annum in Greater Cambridge.
 - The higher employment scenario, which anticipates the creation of 78,742 jobs 2020-2041 (3,749 jobs per annum), is associated with the need for 2,711 homes per annum in Greater Cambridge.
- 3.50 In both of these scenarios, housing supply would be substantially higher than projected household growth (1,222 per annum). As with the modelling on the standard method, additional housing will allow some additional households to form (who would have been suppressed under a more constrained level of supply). However, the additional households are likely to be in-migrants.
- 3.51 Therefore, in order to expand housing supply beyond current delivery levels, the Councils need to consider what range of homes would be attractive to in-migrants to Greater Cambridge. There are a number of considerations.
- 3.52 This is far from a precise science. The correlation between the size and type of housing and household age, type or life stage is relatively weak. Assuming a similar type of economic growth to the past, new in-migrants to the area are likely to be similar to those in the past. This would imply an expansion of the existing range of housing rather any radical change in the nature of supply.
- 3.53 However, in-migrants are more likely to be working age households. These households are more likely to move home, in large part because of moves associated with employment. However, these households comprise a range of circumstances:
- Young households (singles, couples) taking up graduate or early career positions. More likely to rent in the private rented sector and choose central locations (e.g. for transport accessibility). The quality of the private rented sector (and potential expansion of Build to Rent) will be important as well as opportunities to access entry level market sale housing.
 - Family households (young and older families), typically higher income and more likely to be existing owners and access home ownership. Typically occupy family sized housing in a range of locations but particularly suburban and rural areas.
 - Local workers comprising a range of different households and essential to the functioning of the economy and public services. May require affordable (subsidised) housing in order to access housing in the area.
 - Older households (without dependent children) but still active in the labour market, particularly as the pension age shifts. A range circumstances including households who are leaders/captains of industry with considerable purchasing power as well as those who are struggling to make ends meet and may need subsidised housing.

3.54 Not all in-migrants are working age, economically active people and households. A proportion of moves are associated with retirement and are more linked to finding a perceived lifestyle associated with a location or home. This is likely to be greater in significance in South Cambridgeshire, particularly in the larger villages. However, it is important to note that older households who move home do not necessarily seek to downsize. Research suggests they aspire to homes and locations that provide them with a lifestyle, particularly one that enables and enhances their existing interests and activities.

3.55 It is useful to think about how the employment and housing scenarios may play out in a broad way and their impact on delivery of new homes in Greater Cambridge:

- **Homes delivered in line with job growth:** this would provide for homes to meet household formation, allow additional households to form as well as housing for in-migrants.
- **Significant job growth, not matched by housing supply:** this is the picture described in the CPIER report with consequences for worsening affordability and increased commuting distances. Delivery rates constrained by housing requirements/supply of sites rather than demand/need. This is the scenario most closely reflected in the recent past.
- **Subdued job growth, housing supply in excess of jobs created:** if supply can be sustained during the economic downturn this would provide the opportunity to address longer term imbalances in the market e.g. improving affordability, delivering additional affordable housing. It is possible that households currently commuting into Cambridge for work (because they are unable to afford to live there) may be able to buy into the market, with knock-on positive impact for sustainable travel patterns, improved health and wellbeing of the workforce etc.

3.56 It is useful to comment on the first and third of these three broad outcomes as they have implications for the range of housing delivered in order to support the necessary delivery rates.

3.57 The first scenario is likely to be the preferred outcome (subject to further development of evidence and Local Plan examination etc). In addition to the current rate and range of homes delivered within Greater Cambridge, the area is likely to need additional:

- Housing which is attractive to working age/economically active households including for young single/professional couples; spacious family housing and homes attractive to older workers (both wealthy and lower incomes)
- Additional affordable housing including in particular, greater supply of subsidised rent which has been limited under current delivery rates
- More forms of specialist housing including Build to Rent (e.g. primarily currently aimed at younger professionals but potential for family-style private rented in new communities e.g. the private rented sector Reit model) and housing with care for older people.

3.58 The third scenario is the most plausible in the short term given the economic impacts of COVID-19 and as the scale of housing delivery may be influenced to a greater extent by what public authorities can do to maintain supply:

- It is likely that some in-migrants will still move to Greater Cambridge if jobs are not created on the same scale. It is an attractive place to live and providing there are jobs available in nearby locations or that locations within Greater Cambridge are close enough to a household's existing employment base, there is likely to be a certain amount of additional in-migration of economically active people.
- If housing delivery can be maintained this would also allow for some rebalancing of existing commuting patterns. There is significant net commuting into Cambridge in particular and additional housing, particularly affordable housing, would enable some of those currently unable to live closer to work to move into the area.
- The post COVID-19 workplace and the relationship between work and home may shift patterns of location and of the type of homes people choose to live in. In some sectors or specific businesses, employees may have greater freedom to work from home more often. This enables people to live further from work. Under this scenario, Greater Cambridge will need to attract mobile workers and may prove particularly appealing to those working in London but seeking to live in a more attractive and relatively more affordable environment.
- Some in-migrants are not economically active (e.g. retired people) and housing locations and options which are attractive to them may be an important component of housing supply during a period where job growth is subdued. As with the commentary above, this does not only imply the need for older person specialist housing, but also mainstream housing which reflects the need and aspirations of older people.

3.59 There are a number of components that are common to both scenarios and likely to be important to maximising delivery rates:

- Higher levels of affordable housing development. This needs to be in addition to the existing levels and proportions secured through housing development. This is unlikely to be easy given emerging funding pressures but offers potential to expand housing supply without relying on private developers and/or on particular levels of employment growth. The Councils may wish to consider how they can further support or lead direct development of this form of accommodation, particularly where they have Council owned land available. Related to this, the Councils could explore the provision of affordable housing options for local workers using public sector land and working in partnership with other public agencies. The Councils already use a wider definition of key workers in their housing strategy 'Homes for Our Future' which includes workers in the private sector. Building on the experience of and understanding of essential workers during the COVID-19 lockdown, the Councils may be able to work in more creative ways with public agencies and local businesses to bring forward new supply of this form of affordable housing.
- In the current environment, a proportion of new housing in Greater Cambridge will need to be attractive to mobile workers – i.e. those who have a choice about where they live (and work). These households typically have higher incomes or may be moving from areas with higher house prices (and therefore have higher levels of equity). Innovative products

such as live work options, or opportunities to self-build or custom build may provide part of this solution.

- Older persons housing or rather, housing which is attractive to older people and may include mainstream housing that meets their needs and aspirations. This should not be limited to dwellings that are focused on downsizing (predominately smaller apartments).
- Specialist housing e.g. housing with care for older people (extra care/ assisted living accommodation) which provides an alternative to residential care for some vulnerable people (subject to evidence of need). Small numbers of specialist homes for vulnerable people with learning disabilities or mental health needs (e.g. clusters of flats or a large shared property with ‘own front doors’) could also add to this supply and may meet acute needs in the area.

Conclusions

3.60 All of the factors considered above have been considered in terms of their impact on housing delivery and the ability to deliver against the three different housing requirement growth options being considered by the Councils. This is summarised in **Table 3.8** below.

Table 3.8: Pros and cons of the different housing requirement options

Housing Requirement	Commentary (Pros/Cons)
a) Minimum (1,743 dpa)	<p>Pros: Can be largely met via existing commitments and windfall allowance. Housing allocations would be required in the longer-term after 2031/32 to “top up” the baseline trajectory where annual delivery is predicted to drop below the annual requirement. Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.</p> <p>Cons: Wider sustainability concerns in terms of worsening housing affordability, increased commuting distances and environmental implications given the high level of existing employment commitments. Would not change the pattern of housing delivered (which is fairly reliant on new settlements towards the end of the plan period) e.g. similar mix of tenures, types and sizes.</p>
b) Medium (1,996 dpa)	<p>Pros: Requires additional supply of approximately 5,500 dwellings, alongside the existing commitments and windfall allowance. Housing allocations would be required in the medium-longer term after 2027/28 to “top up” the baseline trajectory where annual delivery is predicted to drop below the annual requirement. This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.</p>

Housing Requirement

Commentary (Pros/Cons)

Has the potential to change the pattern of housing delivered and rebalance supply to meet demand if there is a mismatch.

Cons:

Should employment growth exceed housing delivery, wider sustainability concerns in terms of worsening housing affordability, increased commuting distances and environmental implications.

c) Maximum (2,711 dpa)

Pros:

Requires additional supply of approximately 20,500 dwellings, alongside the existing commitments (at 250dpa) and windfall allowance. This would best match housing with the high employment growth forecast, reflecting the maximum employment growth scenario, with resultant benefits in terms of housing affordability and reduced rates of long-distance commuting. The housing and economic land supply would be more flexible to changing circumstances with less reliance on a smaller more concentrated basket of sites as would likely occur under a lower requirement.

Has the potential to change the pattern of housing delivered and rebalance supply to meet demand if there is a mismatch.

Cons:

Given the level of supply through existing commitments the plan period would begin with under-delivery, which in turn would require a stepped annual housing requirement later in the plan period to make up for under-delivery during the period from the plan base date to the adoption date (given the scale of the shortfall plus the significant increase in the requirement), and also to allow for lead-in times for new development to come on-stream.

Previous recorded delivery in the Greater Cambridge area is 2,020 dwellings (in 2018/19) and the average over 2002/03-2018/19 is 1,439 dpa, therefore this will be a significant jump in delivery over the period to 2041. This is true before any stepped annual housing requirement is added to the latter end of the plan period.

All proposed spatial scenarios to meet the housing requirement (see further discussion below) include the Council's assumptions of build-out rates and lead-in times and that the delivery rates at new settlements and urban extensions can be doubled to 500dpa from the 250dpa assumption agreed during the formulation of the current Local Plans. Research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories. Analysis of delivery rates shows that delivery rates are more "lumpy" with a peak in the middle of the build-out period, rather than a flat trajectory. The peak can exceed 250dpa on strategic sites however it does not happen consistently. To meet the maximum housing requirement, it is unlikely that significantly more dwellings can be built per annum on existing strategic sites (and indeed attempts to do so may extend lead-in times), therefore

Housing Requirement Commentary (Pros/Cons)

more new site allocations will be required than the Council had initially anticipated in the spatial scenarios to deliver the requirement by 2041.

This level of supply is significantly above historic trends (88%), and the adopted annual housing requirement in the Local Plans 2018 (62%), which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.

Commentary on spatial options

- 3.61 **Appendix 1** contains high level trajectories for all 24 options and a more detailed discussion of their deliverability, including an estimated five-year housing land supply calculation at plan adoption using the Sedgefield method. This section summarises the detailed conclusions, including the pros and cons, of each option that are set out in **Appendix 1**. The trajectories in Appendix 1 use the Councils' own assumptions for build-out rates and lead-in times where provided – either from the published November 2019 Housing Trajectory⁶ or from the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document. The high rates used for the Maximum growth scenarios are for illustrative purposes and whilst the research is not yet completed, we think it is highly unlikely that we will be able to evidence such high build-out rates.
- 3.62 Before discussing the spatial options in turn, it is important to discuss the assumptions that underpin the Maximum variants of all of the spatial options, to avoid repetition in the discussion and also raise a fundamentally important point at the outset. For all Maximum options, the Councils' assume that the delivery rates for strategic sites can be doubled from 250dpa to 500dpa. Additionally, under Maximum scenarios the more ambitious trajectory for North East Cambridge, as consulted on in the Summer/Autumn 2020 AAP consultation, is assumed. This may be optimistic given the need for the wastewater treatment works to be relocated.
- 3.63 Our initial analysis of build-out rates elsewhere (see **Appendix 2**) shows that for urban extensions and new settlements a figure of around 250-300dpa is generally appropriate in high demand areas such as Cambridge, although there are "peaks" within the trajectory at each site. Only two sites in **Appendix 2** have managed to deliver over 500dpa at their peak and this was only for a short amount of time, not a sustained period. It should be noted that one of these sites, the Milton Keynes Western Expansion Area, is owned by the local authority and the delivery rates are driven by the councils approach to masterplanning, infrastructure delivery and disposal of the land.
- 3.64 We note from reviewing the Council's monitoring data that historically sites in the Cambridge Fringe area have delivered over 500dpa, however this has been

⁶ Available at: <https://www.cambridge.gov.uk/planning-policy-monitoring-reports>

a fairly short-term peak in the completions, and it should be pointed out that the sites are located adjacent to Cambridge urban area and built out at a higher density with greater variety in the type and tenure of development including a higher proportion of flats and rental properties within walking distance of jobs than you would typically find at a new settlement. Additionally, at new settlements the demand for new housing is weaker at the outset compared to established markets such as Cambridge. Whilst it may be possible that new settlements could be built out at 500dpa at their peak, it is unlikely that this level of housebuilding would be able to be sustained over a number of years, particularly so when faced with competition from other new settlements that are due to be delivering concurrently in Greater Cambridge. For the Maximum New Settlements option, using the Councils' assumptions there could be as many as 6-8 new settlements being built out at 500dpa at the same time, and for the Medium New Settlements option there could be as many as 8 being built out at 250dpa. Given the number of new settlements already committed in the mid-latter part of the new plan period it is unlikely that there is much scope for adding many more new settlements to the supply before 2041, particularly given the impact of competition on existing committed new settlements.

- 3.65 Another point to make with effectively re-planning the phasing and delivery of existing new settlements to deliver the higher annual build out rates is that this would raise a number of questions about the impact on assumed lead-in times and delivery rates. For example, there could be consequential impacts on the Infrastructure Delivery Plan and agreed trigger points for payments and infrastructure delivery. Furthermore, the private landowners would need to be encouraged or incentivised to significantly increase delivery rates, with the Councils potentially required to make use of compulsory purchase powers to make this happen. Any of these issues have the potential to delay implementation, and therefore even with higher annual completions there may not be any overall benefit in terms of overall completions by 2041.
- 3.66 Any amendments to the phasing of well-advanced disposal and delivery strategies at the new settlements would push back the commencement date and negate some of the benefit of increased delivery rates within the plan period. Such “interventionist” delivery options should perhaps be considered for *new* site allocations in the emerging Local Plan to ensure they deliver quickly where proposals are not already well-advanced. That way delivery mechanisms, land acquisition and disposal, infrastructure planning and viability assessment can all be undertaken with higher delivery rates in mind, rather than retrofitting it to well-advanced schemes at a later date.
- 3.67 Notwithstanding the overarching comments above about the over-optimistic delivery assumptions of all of the Maximum options, **Table 3.9** below summarises the various pros and cons of the different spatial options (which are provided individually in more detail in **Appendix 1**).

Table 3.9: Spatial Options Commentary

Option Focus and Description	Pros	Cons	Other comments
<p>1a. Densification (Minimum) Option focus source of supply</p> <ul style="list-style-type: none"> • North East Cambridge (delivery by 2041 assumption, using historic delivery rates) • Cambridge urban area (low density) – not total capacity, only enough dwellings to fulfil balance to find 	<ul style="list-style-type: none"> • Housing would be provided closest to many of the existing and proposed employment opportunities. • Ability to provide private rented supply (Build to Rent) as well as housing for ownership and affordable housing. • Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. • Ability to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. • Market absorption into the established Cambridge housing market may allow high build out rates. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of build-out rates and lead-in times). 	<ul style="list-style-type: none"> • Densification would deliver a greater proportion of smaller units in urban locations, which is not likely to deliver the required mix of housing to meet full market demand (which will require a proportion of larger homes – including some wheelchair accessible homes - and homes in other locations). This would not be conducive to maximising build-out rates. • Already high percentage of new builds within Cambridge (c.25% of all sales) - may limit ability to expand market. • There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order 	<ul style="list-style-type: none"> • The trajectory for this option generally over-delivers against the annual requirement until 2032/33. Additional longer-term sources of supply would ensure the annual requirement is met throughout the plan period.

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Option Focus and Description	Pros	Cons	Other comments
<p>1b. Densification (Medium) Option focus source of supply</p> <ul style="list-style-type: none"> • North East Cambridge (delivery by 2041 assumption, using historic delivery rates) • Cambridge urban area (medium density) <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> • Cambridge Airport (initial phase post 2030, outside Green Belt, using historic delivery rates) • Edge of Cambridge - Green Belt (equivalent to one site / broad location, using historic delivery rates) – not total capacity, only enough dwellings to fulfil balance to find 	<ul style="list-style-type: none"> • Housing would be provided closest to many of the existing and proposed employment opportunities. • Ability to provide private rented supply (Build to Rent) as well as housing for ownership and affordable housing. • Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. • Ability to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils’ assumptions of build-out rates and lead-in times). • Market absorption into the 	<p>for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> • Concern that there may not be sufficient HELAA capacity to support the medium option alongside the windfall allowance. • Densification would deliver a greater proportion of smaller units in urban locations, which is not likely to deliver the required mix of housing to meet full market demand (which will require a proportion of larger homes – including some wheelchair accessible homes - and homes in other locations). This would not be conducive to maximising build-out rates. • Already high percentage of new builds within Cambridge (c.25% of all sales) - may limit ability to expand market. • There may be a risk to relying on delivery from North East Cambridge during the middle 	<ul style="list-style-type: none"> • Under this option the Councils have assumed that the balance would be made up by development at Cambridge Airport. There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant

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Option Focus and Description	Pros	Cons	Other comments
	<p>established Cambridge housing market may allow high build out rates.</p>	<p>part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p>	<p>possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate. Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge.</p> <ul style="list-style-type: none"> • If Cambridge Airport and North East Cambridge were delivered concurrently it may result in a degree of competition, however there is considerable scope to ensure that the sites are sufficiently differentiated in terms of housing type and size to provide sufficient choice in the market.
<p>1c. Densification (Maximum) N.B. Assumes additional delivery by 2041 at committed new settlements. Option focus source of supply</p> <ul style="list-style-type: none"> • North East Cambridge (delivery by 2041 assumption, using 	<ul style="list-style-type: none"> • Housing would be provided closest to many of the existing and proposed employment opportunities. • Ability to provide private rented supply (Build to Rent) as well as housing for ownership and affordable 	<ul style="list-style-type: none"> • Concern that there may not be sufficient HELAA capacity to support the maximum option alongside the windfall allowance. • Densification would deliver a greater proportion of smaller units in urban locations, which 	<ul style="list-style-type: none"> • Under this option the Councils have assumed that the balance would be made up by development at Cambridge Airport. There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan

Option Focus and Description	Pros	Cons	Other comments
<p>delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))</p> <ul style="list-style-type: none"> Cambridge urban area (at high density) <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, higher delivery rates) – delivery by 2041 constrained to provide only enough dwellings to fulfil balance to find 	<p>housing.</p> <ul style="list-style-type: none"> Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Ability to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. Market absorption into the established Cambridge housing market may allow high build out rates. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils’ assumptions of build-out rates and lead-in times). 	<p>is not likely to deliver the required mix of housing to meet full market demand (which will require a proportion of larger homes – including some wheelchair accessible homes - and homes in other locations). This would not be conducive to maximising build-out rates.</p> <ul style="list-style-type: none"> Already high percentage of new builds within Cambridge (c.25% of all sales) - may limit ability to expand market. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review 	<p>period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate.</p>

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Option Focus and Description	Pros	Cons	Other comments
		<p>during the plan making process.</p> <ul style="list-style-type: none"> The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the 	

Option Focus and Description	Pros	Cons	Other comments
<p>2a. Edge of Cambridge - Non Green Belt (Minimum)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, using historic delivery rates) <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using historic delivery rates) <p>One village site at a Rural Centre outside of the Green Belt to make up balance to find</p>	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants. Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Marginal five-year housing land supply at plan adoption (using the Councils' assumptions of build-out rates and lead-in times). 	<p>requirement by 2041.</p> <ul style="list-style-type: none"> There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate. Likely not able to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by development at North East Cambridge. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process. Alternative options to deliver in the middle of the plan period could include additional new settlements or

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Option Focus and Description	Pros	Cons	Other comments
<p>2b. Edge of Cambridge - Non Green Belt (Medium)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, using historic delivery rates) <p>Additional sources of supply to make up balance</p> <p>North East Cambridge (delivery by 2041 assumption, using historic delivery rates)</p> <p>Two smaller new settlements of 4,500 dwellings on public transport corridors to meet the balance to find (delivery by 2041, using historic delivery rates)</p> <ul style="list-style-type: none"> Balance to find spread across the Rural Centre (30%) and Minor Rural Centres (70%) outside of the Green Belt 	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants. Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. 	<ul style="list-style-type: none"> There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate. Marginally not able to demonstrate a five-year housing land supply at plan adoption (4.99 years) (using the 	<p>Green Belt urban extensions to Cambridge.</p> <ul style="list-style-type: none"> The balance to find under this scenario spreads development across villages which could deliver sufficient small sites to meet the NPPF paragraph 68 requirement. Without this approach the small sites requirement would not be met under this option. Under this option the Councils have assumed that the balance would be made up by development at North East Cambridge. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an

Option Focus and Description	Pros	Cons	Other comments
		<p>Councils' assumptions of lead-in times and build-out rates).</p> <ul style="list-style-type: none"> • Timing and delivery of infrastructure risk if incremental village extensions result in unsustainable patterns of growth i.e. poorly connected/served communities could harm build/sales rates. 	<p>alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> • Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge. • Potentially less likely to deliver private rented supply e.g. Build to Rent as development would be in less accessible locations, though North East Cambridge would be suitable for this tenure. • The two new settlements would compete with the committed new settlements from 2030 onwards when a total of six new settlements would be under construction, selling a similar product in similar locations. This may see a reduction in the build-out rate as a result.

Option Focus and Description	Pros	Cons	Other comments
<p>2c. Edge of Cambridge - Non Green Belt (Maximum) N.B. Assumes additional delivery by 2041 at committed new settlements. Option focus source of supply</p> <ul style="list-style-type: none"> Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates) <p>Additional sources of supply to make up balance</p> <p>North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))</p> <ul style="list-style-type: none"> One larger new settlement of 9,000 dwellings on a public transport corridor (delivery by 2041, using higher delivery rates but constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure) One smaller new settlement of 4,500 dwellings on a public transport corridor (delivery by 	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants. Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Marginal five-year housing land supply at plan adoption (using the Councils' assumptions of build-out rates and lead-in times). 	<ul style="list-style-type: none"> There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate. Likely not able to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. The Councils' have assumed that build-out rates at new 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by development at North East Cambridge. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process. Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions

Option Focus and Description	Pros	Cons	Other comments
<p>2041, using higher delivery rates but constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure)</p>		<p>settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p>	<p>to Cambridge.</p> <ul style="list-style-type: none"> • Potentially less likely to deliver private rented supply e.g. Build to Rent as development would be in less accessible locations, though North East Cambridge would be suitable for this tenure. • The proposed new settlements would compete with the committed new settlements from 2030 onwards when a total of five new settlements would be under construction, selling a similar product in similar locations. This may see a reduction in the build-out rate as a result.
<p>3a. Edge of Cambridge - Green Belt (Minimum)</p>	<ul style="list-style-type: none"> • Close geographical proximity between key employment 	<ul style="list-style-type: none"> • Lead-in times extended compared to other options due 	<p>-</p>

Option Focus and Description	Pros	Cons	Other comments
<p>Option focus source of supply</p> <ul style="list-style-type: none"> Edge of Cambridge - Green Belt (equivalent to three sites / broad locations, with development limited to ensure that the strategic option homes total equals the balance to find) 	<p>locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants.</p> <ul style="list-style-type: none"> Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). 	<p>to the requirement to release Green Belt land through an adopted plan before applications can be approved (i.e. applications cannot be "twin-tracked" during plan-making unless "very special circumstances" can be demonstrated).</p> <ul style="list-style-type: none"> Would not be likely to meet the small sites requirement under NPPF paragraph 68. Green Belt site allocations are less likely to involve incremental urban extensions, and more likely to involve large-scale release where justified by exceptional circumstances. The sites would likely be delivering concurrently, competing with one another, which could reduce market absorption. 	
<p>3b. Edge of Cambridge - Green Belt (Medium)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Edge of Cambridge - Green Belt (equivalent to five sites / broad locations, using historic delivery 	<ul style="list-style-type: none"> Close geographical proximity between key employment locations and homes which will ensure that housing delivery is responsive to job creation, meeting demand 	<ul style="list-style-type: none"> Lead-in times extended compared to other options due to the requirement to release Green Belt land through an adopted plan before applications can be approved (i.e. applications cannot be 	<ul style="list-style-type: none"> The balance to find from Cambridge urban area could be increased to improve the five-year housing land supply position at plan adoption.

Option Focus and Description	Pros	Cons	Other comments
rates) Additional sources of supply to make up balance • Minimal balance to find located within Cambridge urban area	from in-migrants. • Ability to provide housing for ownership and affordable housing. • Wide range of dwelling types and sizes likely, supporting higher delivery rates. • Opportunity to offer self/custom build. • Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities.	“twin-tracked” during plan-making unless “very special circumstances” can be demonstrated). • Marginally unable to demonstrate a five-year housing land supply at plan adoption (4.99 years) (using the Councils’ assumptions of lead-in times and build-out rates). • Potential for the Green Belt site allocations to compete with each other and reduce delivery rates under this scenario as they would be delivering a similar product in a similar location concurrently at scale. • Would not be likely to meet the small sites requirement under NPPF paragraph 68. Green Belt site allocations are less likely to involve incremental urban extensions, and more likely to involve large-scale release where justified by exceptional circumstances.	
3c. Edge of Cambridge - Green Belt (Maximum) N.B. Assumes additional delivery	• Close geographical proximity between key employment locations and homes which	• Lead-in times extended compared to other options due to the requirement to release	-

Option Focus and Description	Pros	Cons	Other comments
<p>by 2041 at committed new settlements.</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> • Edge of Cambridge - Green Belt (equivalent to five sites / broad locations, using higher delivery rates, with development limited to ensure the strategic option equals the balance to find) 	<p>will ensure that housing delivery is responsive to job creation, meeting demand from in-migrants.</p> <ul style="list-style-type: none"> • Ability to provide housing for ownership and affordable housing. • Wide range of dwelling types and sizes likely, supporting higher delivery rates. • Opportunity to offer self/custom build. • Ability to provide specialist housing if required e.g. older persons extra care because of existing facilities, services and amenities. 	<p>Green Belt land through an adopted plan before applications can be approved (i.e. applications cannot be “twin-tracked” during plan-making unless “very special circumstances” can be demonstrated).</p> <ul style="list-style-type: none"> • Not able to demonstrate a five-year housing land supply at plan adoption (using the Councils’ assumptions of lead-in times and build-out rates) due to a significant shortfall prior to plan adoption and not consistently meeting the annual requirement until 2033/34, which would require a stepped annual housing requirement and/or Liverpool method. • Potential for the Green Belt site allocations to compete with each other and reduce delivery rates under this scenario as they would be delivering a similar product in a similar location concurrently at scale. • Would not be likely to meet the small sites requirement under NPPF paragraph 68. Green Belt 	

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Option Focus and Description	Pros	Cons	Other comments
		<p>site allocations are less likely to involve incremental urban extensions, and more likely to involve large-scale release where justified by exceptional circumstances.</p> <ul style="list-style-type: none"> • The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and 	

Option Focus and Description	Pros	Cons	Other comments
<p>4a. New Settlements (Minimum) Option focus source of supply</p> <ul style="list-style-type: none"> Two smaller new settlements of 4,500 dwellings on a public transport corridor (delivery by 2041, using historic delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure). 	<ul style="list-style-type: none"> Opportunities to deliver new housing at scale in the mid-latter parts of the plan period. Ability to provide housing for ownership and affordable housing. Opportunity to offer self/custom build. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). Potentially less likelihood of directly competing sites if new settlements are located sufficiently distant from existing committed new settlements. 	<p>indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p> <ul style="list-style-type: none"> Competition with existing committed new settlement sites in the mid-latter part of the plan period may saturate the local housing market with similar products in similar locations, thus reducing build-out rates. Less likely to deliver private rented supply e.g. Build to Rent as development would be in potentially less accessible locations and further from Cambridge where demand is higher. Less likely to deliver specialist e.g. older persons housing or delivered later in phasing when community centre complete. Not likely to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. 	-
<p>4b. New Settlements (Medium) Option focus source of supply</p>	<ul style="list-style-type: none"> Opportunities to deliver new housing at scale in the mid- 	<ul style="list-style-type: none"> Competition with existing committed new settlement sites 	-

Option Focus and Description	Pros	Cons	Other comments
<p>• Three new settlements on public transport corridors (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures), including:</p> <ul style="list-style-type: none"> – Two larger new settlements of 9,000 dwellings – One smaller new settlement of 4,500 dwellings <p>• One smaller new settlement of 4,500 homes on the road network (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures)</p>	<p>latter parts of the plan period.</p> <ul style="list-style-type: none"> • Ability to provide housing for ownership and affordable housing. • Opportunity to offer self/custom build. • Potentially less likelihood of directly competing sites if new settlements are located sufficiently distant from existing committed new settlements. 	<p>in the mid-latter part of the plan period may saturate the local housing market with similar products in similar locations, thus reducing build-out rates.</p> <ul style="list-style-type: none"> • Less likely to deliver private rented supply e.g. Build to Rent as development would be in potentially less accessible locations and further from Cambridge where demand is higher. • Less likely to deliver specialist e.g. older persons housing or delivered later in phasing when community centre complete. • Not likely to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. • Unable to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates), requiring more short-term allocations or a stepped annual housing requirement. 	
<p>4c. New Settlements (Maximum) Option focus source of supply</p>	<ul style="list-style-type: none"> • Opportunities to deliver new housing at scale in the mid- 	<ul style="list-style-type: none"> • Competition with existing committed new settlement sites 	-

Option Focus and Description	Pros	Cons	Other comments
<p>Page 428</p> <ul style="list-style-type: none"> • Three new settlements on public transport corridors (delivery by 2041, using higher delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures), including: <ul style="list-style-type: none"> – Two larger new settlements of 9,000 dwellings – One smaller new settlement of 4,500 dwellings • One smaller new settlement of 4,500 homes on the road network (delivery by 2041, using higher delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures) 	<p>latter parts of the plan period.</p> <ul style="list-style-type: none"> • Ability to provide housing for ownership and affordable housing. • Opportunity to offer self/custom build. • Potentially less likelihood of directly competing sites if new settlements are located sufficiently distant from existing committed new settlements. 	<p>in the mid-latter part of the plan period may saturate the local housing market with similar products in similar locations, thus reducing build-out rates.</p> <ul style="list-style-type: none"> • Less likely to deliver private rented supply e.g. Build to Rent as development would be in potentially less accessible locations and further from Cambridge where demand is higher. • Less likely to deliver specialist e.g. older persons housing or delivered later in phasing when community centre complete. • Not likely to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. • Unable to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates), requiring more short-term allocations or a stepped annual housing requirement. • The Councils' have assumed that build-out rates at new 	

Option Focus and Description	Pros	Cons	Other comments
<p>5a. Villages (Minimum) Option focus source of supply</p>	<ul style="list-style-type: none"> A dispersal approach to the villages is likely to result in 	<ul style="list-style-type: none"> Additional housing delivery through new allocations is 	-

settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.

Option Focus and Description	Pros	Cons	Other comments
<ul style="list-style-type: none"> • 40% of balance to find at Rural Centres • 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre). <p>17% of balance to find at Group villages</p> <p>3% of balance to find at Infill villages</p>	<p>multiple smaller sites that are likely to be deliverable in the short-medium term.</p> <ul style="list-style-type: none"> • Greater potential to allocate small sites to meet the NPPF paragraph 68 requirement. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). • Deferring a proportion of site allocations (i.e. not all) to Neighbourhood Plans could spread delivery across the plan period and would be less likely to result in the loss of a five-year housing land supply. • Possible to deliver specialist housing if required e.g. older persons housing. • Would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with existing committed new 	<p>mainly required in the mid-latter part of the plan period. This option mainly delivers medium-term sites in villages, so would not be adding supply at the latter part of the plan period.</p> <ul style="list-style-type: none"> • Market-led sites are less likely to deliver affordable housing because some small sites will fall below the threshold for contributions and/or registered providers unable/unwilling to manage small numbers. • A highly dispersed growth pattern would lead to less concentrated infrastructure investment because growth would be distributed across numerous settlements over a broad geographical area. • Fewer small dwellings are likely to be delivered, especially apartments, limiting delivery rates overall. • Smaller sites are unlikely to deliver private rented supply e.g. Build to Rent. • Greater market delivery at villages would likely result in a 	

Option Focus and Description	Pros	Cons	Other comments
<p>5b. Villages (Medium) Option focus source of supply</p> <ul style="list-style-type: none"> • 40% of balance to find at Rural Centres • 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre). • 17% of balance to find at Group villages • 3% of balance to find at Infill villages 	<p>settlements and therefore would maximise the market absorption rate.</p> <ul style="list-style-type: none"> • A dispersal approach to the villages is likely to result in multiple smaller sites that are likely to be deliverable in the short-medium term. • Greater potential to allocate small sites to meet the NPPF paragraph 68 requirement. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). • Deferring a proportion of site allocations (i.e. not all) to Neighbourhood Plans could spread delivery across the plan period and would be less likely to result in the loss of a five-year housing land supply. • Possible to deliver specialist housing if required e.g. older persons housing. 	<p>reduction in the number of rural exception sites for affordable housing taken forward.</p> <ul style="list-style-type: none"> • Additional housing delivery through new allocations is mainly required in the mid-latter part of the plan period. This option mainly delivers medium-term sites in villages, so would not be adding supply at the latter part of the plan period. • Market-led sites are less likely to deliver affordable housing because some small sites will fall below the threshold for contributions and/or registered providers unable/unwilling to manage small numbers. • A highly dispersed growth pattern would lead to less concentrated infrastructure investment because growth would be distributed across numerous settlements over a broad geographical area. • Fewer small dwellings likely to be delivered, especially apartments, limiting delivery rates overall. 	-

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Option Focus and Description	Pros	Cons	Other comments
<p>5c. Villages (Maximum) N.B. High growth option assumes additional delivery by 2041 at committed new settlements. Option focus source of supply 40% of balance to find at Rural Centres 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre). 17% of balance to find at Group villages 3% of balance to find at Infill villages</p>	<ul style="list-style-type: none"> • A dispersal approach to the villages is likely to result in multiple smaller sites that are likely to be deliverable in the short-medium term. • Greater potential to allocate small sites to meet the NPPF paragraph 68 requirement. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). • Deferring a proportion of site allocations (i.e. not all) to Neighbourhood Plans could spread delivery across the plan period and would be less likely to result in the loss of a five-year housing land supply. 	<ul style="list-style-type: none"> • Smaller sites are unlikely to deliver private rented supply e.g. Build to Rent. • Greater market delivery at villages would likely result in a reduction in the number of rural exception sites for affordable housing taken forward. • Additional housing delivery through new allocations is mainly required in the mid-latter part of the plan period. This option mainly delivers medium-term sites in villages, so would not be adding supply at the latter part of the plan period. • Market-led sites are less likely to deliver affordable housing because some small sites will fall below the threshold for contributions and/or registered providers unable/unwilling to manage small numbers. • A highly dispersed growth pattern would lead to less concentrated infrastructure investment because growth would be distributed across numerous settlements over a 	-

Option Focus and Description	Pros	Cons	Other comments
	<ul style="list-style-type: none"> Possible to deliver specialist housing if required e.g. older persons housing. 	<p>broad geographical area.</p> <ul style="list-style-type: none"> Fewer small dwellings likely to be delivered, especially apartments, limiting delivery rates overall. Smaller sites are unlikely to deliver private rented supply e.g. Build to Rent. Greater market delivery at villages would likely result in a reduction in the number of rural exception sites for affordable housing taken forward. The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the 	

Option Focus and Description	Pros	Cons	Other comments
<p>6a. Public Transport Corridors (Minimum)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> • North East Cambridge (delivery by 2041 assumption, using historic delivery rates) • One smaller new settlement of 4,500 homes on a public transport corridor (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure). • Minimal balance to find spread 	<ul style="list-style-type: none"> • Good commuting relationship between jobs and houses to meet demand where it exists. • Development in accessible villages, urban extensions and new settlements provides opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. • Able to demonstrate a five-year housing land supply at 	<p>Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p> <ul style="list-style-type: none"> • Not likely to deliver small sites to meet the NPPF paragraph 68 requirement. • There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level 	<ul style="list-style-type: none"> • Balance to find at eighteen villages could be increased to reduce risks resulting from delay or under-delivery at North East Cambridge.

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Option Focus and Description	Pros	Cons	Other comments
<p>across eighteen villages sited along existing or proposed public transport corridors</p>	<p>plan adoption (using the Councils' assumptions of build-out rates and lead-in times).</p>	<p>of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p>	
<p>6b. Public Transport Corridors (Medium) Option focus source of supply</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using historic delivery rates) One larger new settlement of 9,000 homes on a public transport corridor (delivery by 2041, using historic delivery rates) <p>Balance to find spread across eighteen villages sited along existing or proposed public transport corridors</p>	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Development in accessible villages, urban extensions and new settlements provides opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Sites at the eighteen villages would be likely to deliver sufficient small sites to meet the NPPF paragraph 68 requirement. Providing development in the villages (alongside an urban extension and a new settlement) will provide a wider choice of housing in the 	<ul style="list-style-type: none"> Marginally does not demonstrate a five-year housing land supply at plan adoption (4.9 years) (using the Councils' assumptions of lead-in times and build-out rates), however it would do with a smoother trajectory for village allocations delivering sooner after plan adoption. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site 	<p>-</p>

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Option Focus and Description	Pros	Cons	Other comments
	<p>market for people in terms of size and location and will increase the market absorption rate.</p>	<p>should be kept under review during the plan making process.</p>	
<p>6c. Public Transport Corridors (Maximum) N.B. Assumes additional delivery by 2041 at committed new settlements. Option focus source of supply North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))</p> <ul style="list-style-type: none"> • One larger new settlement of 9,000 homes on a public transport corridor (delivery by 2041, using higher delivery rates) • Balance to find spread across eighteen villages sited along existing or proposed public transport corridors 	<ul style="list-style-type: none"> • Good commuting relationship between jobs and houses to meet demand where it exists. • Development in accessible villages, urban extensions and new settlements provides opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. • Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of build-out rates and lead-in times). • Site at the eighteen villages would be likely to deliver sufficient small sites to meet the NPPF paragraph 68 	<ul style="list-style-type: none"> • There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process. • The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial 	<p>-</p>

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Option Focus and Description	Pros	Cons	Other comments
	<p>requirement.</p> <ul style="list-style-type: none"> • Providing development in the villages (alongside an urban extension and a new settlement) will provide a wider choice of housing in the market for people in terms of size and location and will increase the market absorption rate. 	<p>research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p>	
<p>7a. Supporting a high-tech corridor by integrating homes and jobs (southern cluster) (Minimum)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> • One smaller new settlement of 4,500 homes on a public transport corridor within the 	<ul style="list-style-type: none"> • Good commuting relationship between jobs and houses to meet demand where it exists. • Mix of sites and focus on the south of the city will reduce competition with committed new settlements to the north and west of Cambridge, 	<ul style="list-style-type: none"> • Reliance on performance of the high-tech sectors of the economy in this location and demand for homes tied to this. • Estimated annual completions are consistently below the annual housing requirement from 2032/33 onwards which 	<p>-</p>

Option Focus and Description	Pros	Cons	Other comments
<p>southern cluster area (delivery by 2041, using historic delivery rates)</p> <ul style="list-style-type: none"> Balance to find distributed equally between the five villages located within the core southern cluster area that are also on a public transport corridor. 	<p>minimising absorption rate issues.</p> <ul style="list-style-type: none"> Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). Will deliver small sites in villages to help meet the NPPF paragraph 68 requirement. 	<p>would result in the need for additional mid-longer term allocations to avoid losing a five-year housing land supply.</p>	
<p>7b. Supporting a high-tech corridor by integrating homes and jobs (southern cluster) (Medium)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> One smaller new settlement of 4,500 homes on a public transport corridor within the 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Mix of sites and focus on the south of the city will reduce competition with committed new settlements to the north and west of Cambridge, 	<ul style="list-style-type: none"> Reliance on performance of the high-tech sectors of the economy in this location and demand for homes tied to this. Marginally does not demonstrate a five-year housing land supply at plan adoption (4.9 years) (using the 	

Option Focus and Description	Pros	Cons	Other comments
<p>southern cluster area (delivery by 2041, using historic delivery rates)</p> <ul style="list-style-type: none"> Balance to find spread across five villages sited along existing or proposed public transport corridors within the core southern cluster area (70%), and further villages within Southern Cluster core area not on PT corridors (including Group villages (20%) and Infill villages (10%). 	<p>minimising absorption rate issues.</p> <ul style="list-style-type: none"> Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Will deliver small sites in villages to help meet the NPPF paragraph 68 requirement. 	<p>Councils' assumptions of lead-in times and build-out rates), however it would do with a smoother trajectory for village allocations delivering sooner after plan adoption.</p> <ul style="list-style-type: none"> A dispersed growth pattern to villages could lead to less concentrated infrastructure investment because growth would be distributed across numerous settlements over a broad geographical area. 	
<p>13c. Supporting a high-tech corridor by integrating homes and jobs (southern cluster) (Maximum)</p> <p>N.B. Assumes additional delivery by 2041 at committed new settlements.</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> One larger new settlement of 9,000 homes on a public transport corridor within the southern cluster (delivery by 2041, using higher delivery rates) 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Mix of sites and focus on the south of the city will reduce competition with committed new settlements to the north and west of Cambridge, minimising absorption rate issues. Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along 	<ul style="list-style-type: none"> Reliance on performance of the high-tech sectors of the economy in this location and demand for homes tied to this. Not able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). A dispersed growth pattern to villages could lead to less concentrated infrastructure investment because growth would be distributed across 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by high delivery rates at North East Cambridge and Cambridge Airport. There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to relocate and seeks to

Option Focus and Description	Pros	Cons	Other comments
<p>• Balance to find spread equally across five villages sited at existing or proposed public transport nodes within the southern cluster.</p> <p>Additional sources of supply to make up balance</p> <p>• Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates)</p> <p>• North East Cambridge (delivery by 2041 assumption, using delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).</p>	<p>the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates.</p> <p>• Will deliver small sites in villages to help meet the NPPF paragraph 68 requirement.</p>	<p>numerous settlements over a broad geographical area.</p> <p>• The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations</p>	<p>demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate.</p> <p>• There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian Water has started the process</p>

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Option Focus and Description	Pros	Cons	Other comments
		<p>will be required to deliver the requirement by 2041.</p>	<p>of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge.
<p>a. Expanding a growth area around transport nodes (Minimum)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Expansion of Cambourne by the equivalent of one smaller new settlement (delivery by 2041, using historic delivery rates) <ul style="list-style-type: none"> completions and commitments + 4,500 dwellings = 11,300 (and close to further development of 3,500 at Bourn Airfield New Village) Balance to find spread across 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. Able to demonstrate a five-year housing land supply at plan adoption (using the 	<ul style="list-style-type: none"> The lead-in times for strategic transport infrastructure delivery such as East-West Rail, the proposed new station at Cambourne and Cambridgeshire Autonomous Metro may delay housing delivery until after the infrastructure is operational. The annual housing requirement is not met in any year from 2033/34 onwards which would require additional longer-term sites to avoid the loss of a five-year housing land 	<p>-</p>

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Option Focus and Description	Pros	Cons	Other comments
three villages sited along the A428 public transport corridor	<p>Councils' assumptions of lead-in times and build-out rates).</p> <ul style="list-style-type: none"> • New development in the villages (alongside new settlements) would provide a wider choice of housing in the market for people in terms of size and location, and therefore maximise the market absorption rate. • Development at A428 villages provides opportunities for small site delivery to meet NPPF paragraph 68 requirement. 	<p>supply later in the plan period.</p> <ul style="list-style-type: none"> • A new settlement expanding Cambourne would deliver additional housing that is fairly similar to the existing commitments, and it is expected to be delivering alongside Cambourne West and Bourn Airfield which would likely result in competition between the sites, therefore affecting market absorption and build-out rates. 	
<p>8b. Expanding a growth area around transport nodes (Medium)</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> • Expansion of Cambourne by the equivalent of one smaller new settlement (delivery by 2041, using historic delivery rates) <ul style="list-style-type: none"> – completions and commitments + 4,500 dwellings = 11,300 dwellings (and close to further development of 3,500 at 	<ul style="list-style-type: none"> • Good commuting relationship between jobs and houses to meet demand where it exists. • Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. • Able to demonstrate a five- 	<ul style="list-style-type: none"> • The lead-in times for strategic transport infrastructure delivery such as East-West Rail, the proposed new station at Cambourne and Cambridgeshire Autonomous Metro may delay housing delivery until after the infrastructure is operational. • Focuses a significant amount of development concurrently at Cambourne and along the wider A428 corridor, which creates a 	<ul style="list-style-type: none"> • Under this option the Councils have assumed that the balance would be made up by development at North East Cambridge. There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding

Option Focus and Description	Pros	Cons	Other comments
<p>Bourn Airfield New Village)</p> <ul style="list-style-type: none"> Balance to find spread across three villages sited along the A428 public transport corridor (60%) and four further Minor Rural Centre/Group villages sited within 5km of Cambourne (40%). <p>Additional sources of supply to make up balance</p> <ul style="list-style-type: none"> North East Cambridge (delivery by 2041 assumption, using historic delivery rates) 	<p>year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates).</p> <ul style="list-style-type: none"> Development at A428 villages provides opportunities for small site delivery to meet NPPF paragraph 68 requirement. 	<p>risk of market saturation and absorption rate issues.</p>	<p>through the Housing Investment Fund and Anglian Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge.
<p>8c. Expanding a growth area around transport nodes (Maximum)</p> <p>N.B. Assumes additional delivery by 2041 at committed new settlements.</p> <p>Option focus source of supply</p> <ul style="list-style-type: none"> Expansion of Cambourne by the equivalent of one larger new settlement (delivery by 2041, using higher delivery rates) <ul style="list-style-type: none"> – completions and 	<ul style="list-style-type: none"> Good commuting relationship between jobs and houses to meet demand where it exists. Opportunities for higher density, build-to-rent, and affordable housing. Can also tie in village locations along the corridors where larger family/executive homes may be appropriate, maximising the opportunities for higher build-out rates. 	<ul style="list-style-type: none"> The lead-in times for strategic transport infrastructure delivery such as East-West Rail, the proposed new station at Cambourne and Cambridgeshire Autonomous Metro may delay housing delivery until after the infrastructure is operational. Focuses a significant amount of development concurrently at Cambourne and along the wider A428 corridor, which creates a 	<ul style="list-style-type: none"> Under this option the Councils have assumed that the balance would be made up by high delivery rates at North East Cambridge and Cambridge Airport. There may be a risk to relying on housing delivery from Cambridge Airport during the middle of the plan period, notwithstanding that Marshall recently confirmed to the Councils its commitment to

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Option Focus and Description	Pros	Cons	Other comments
<p>commitments + 9,000 dwellings = 15,800 dwellings (and close to further development of 3,500 at Bourn Airfield New Village)</p> <ul style="list-style-type: none"> Balance to find (accounting for sources of supply below) spread across: <ul style="list-style-type: none"> three villages sited along the A428 public transport corridor (60%) one Minor Rural Centre and three Group villages within 5km of Cambourne (40%) Additional sources of supply to make up balance Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates) North East Cambridge (delivery by 2041 assumption, using delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure) 	<ul style="list-style-type: none"> Development at A428 villages provides opportunities for small site delivery to meet the NPPF paragraph 68 requirement. 	<p>risk of market saturation and absorption rate issues.</p> <ul style="list-style-type: none"> Not able to demonstrate a five-year housing land supply at plan adoption (using the Councils' assumptions of lead-in times and build-out rates). The Councils' have assumed that build-out rates at new settlements and strategic sites can be doubled to 500dpa for the purposes of testing the spatial options from the 250dpa agreed during the formulation of the current Local Plans. Initial research from other local authorities in the OxCam Arc shows that an average of 300dpa is the highest delivery rate expected to be delivered at a strategic site in those other housing trajectories and is considered a reasonable assumption to use (without the Councils committing to more interventionist approaches to increase delivery on future sites). It is unlikely that significantly more dwellings can be built per annum on existing 	<p>relocate and seeks to demonstrate the availability and deliverability of the site, whilst being keen to stress that no final decisions have yet been made. It advises that it has a signed option agreement at Cranfield Airport, Bedford and that there would be no commercial, planning, technical or regulatory impediment to a move to Cranfield and vacant possession is anticipated by 2030. The position should be kept under review during the plan making process as appropriate.</p> <ul style="list-style-type: none"> There may be a risk to relying on delivery from North East Cambridge during the middle part of the plan period subject to progress in the process to relocate the Cambridge Wastewater Treatment Plant. The relocation of the works has secured government funding through the Housing Investment Fund and Anglian

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Option Focus and Description	Pros	Cons	Other comments
		<p>committed strategic sites (and indeed attempts to do so may extend lead-in times where proposals are well-progressed), therefore further site allocations will be required to deliver the requirement by 2041.</p>	<p>Water has started the process of preparing a Development Control Order for an alternative site. The level of confidence in the availability and deliverability of the site should be kept under review during the plan making process.</p> <ul style="list-style-type: none"> Alternative options to deliver in the middle of the plan period could include additional new settlements or Green Belt urban extensions to Cambridge.

4. Interim Conclusions

- 4.1 The interim findings show that all of the Minimum options can deliver the overall housing requirement and that the Councils will be able to demonstrate a five-year housing land supply at plan adoption. The Medium options show that: all options can meet the overall housing requirement over the plan period; three options can demonstrate a five-year housing land supply at plan adoption; and the five options that cannot demonstrate a five-year housing land supply at plan adoption are marginal and would be able to do so if a small number of short-term site allocations were included in the package of sites.
- 4.2 The interim findings show that the Maximum options under the Councils' working assumptions are highly likely to be undeliverable (based on current market conditions and no intervention) due to the assumption that strategic sites can deliver 500dpa. Additionally, given the high level of commitments and the imbalance between committed jobs and housing, the Minimum options would lead to unsustainable development and increase levels of in-commuting if the economy performs as anticipated by the GL Hearn studies. This really just leaves the Medium/Central growth scenario as the only "reasonable" option of the three from a housing delivery perspective, however this option is broadly in line with recent delivery and therefore it may be achievable to deliver more than this.
- 4.3 We believe that an annual housing requirement that is higher than the Medium option may be achievable, but we are not yet able to advise on what level of growth may be deliverable at this stage of the study in advance of more detailed testing and engagement with the development industry.
- 4.4 The NPPF (paragraph 72) recognises the role that new settlements or significant extensions to existing villages and towns can make, whilst cautioning that a realistic assessment of likely rates of delivery, given the lead-in times for large scale sites is required, alongside the identification of 'opportunities for supporting rapid implementation (such as through joint ventures or locally-led development corporations)'. Footnote 35 of the NPPF also acknowledges that *'large scale developments may need to extend beyond an individual plan period, and the associated infrastructure requirements may not be capable of being identified fully at the outset. Anticipated rates of delivery and infrastructure requirements should, therefore, be kept under review and reflected as policies are updated.'*
- 4.5 In light of this national policy context, we would recommend that if the Councils are to include new strategic sites (e.g. North East Cambridge and Cambridge Airport) as part of the spatial strategy that they apply cautious trajectory assumptions on these sites and over-allocate against the housing requirement to provide ample buffer/headroom. Milton Keynes Council took this approach with the Land East of the M1 allocation, which assumed a small number of completions at the end of the plan period but had the potential to deliver more should HIF funding be secured. Similarly East Hertfordshire District Council over allocated with the removal of Gilston from the Harlow Green Belt, recognising that some 7,000 homes would be delivered in the next plan period (or earlier), providing certainty to the market and stakeholders and allowing them to pursue strategic infrastructure improvements with their partners on the Harlow and Gilston Garden Town (e.g. HIF bid for second Stort crossing).

- 4.6 In testing the deliverability of the Maximum option, there needs to be further thought as to what a deliverable Maximum option could look like based on realistic lead-in times and build-out rates of promoted strategic sites. Such an approach is likely to involve sources of supply taken from all spatial scenarios (rather than only using a small number of these sources at high delivery rates in combination with high build out assumptions at existing committed sites) and will necessitate more detailed site-specific analysis as the Greater Cambridge spatial strategy evolves iteratively. It may be that there is only one option that can deliver the maximum requirement option during the plan period, or it may not be possible at all. The final Housing Delivery Study will help to advise on this matter.
- 4.7 Generally, the options that mix short-medium term sources of supply (smaller sites in urban areas and villages) with longer-term sources (new settlements, urban extensions and Green Belt release) are better-able to deliver across the plan period as a whole with a smoother trajectory. These sites also have different characteristics and are likely to result in variety in terms of location, size, type and tenure of housing, and also be more geographically spread to reduce competition, thus better-matching the housing supply with demand.
- 4.8 In order to optimise housing delivery, demonstrate a five-year housing land supply, and maintain delivery across the plan period to ensure delivery against the chosen requirement, it will be necessary to gap-fill the “troughs” in the baseline trajectory with additional sources of supply, underpinned by cautious but realistic lead-in times and build-out rates, and “over-allocate” against the requirement by a suitable buffer (we recommend at least 10%) to ensure that any unforeseen delays to delivering individual site allocations during the plan period, or changes to market conditions, do not result in under-delivery.

Next steps

- 4.9 The final study will provide updated lead-in times and build-out rates information which can be used by the Councils in the HELAA and future iterations of the growth options work, and will also make recommendations on windfall allowance and delivery from other forms of development. This information will help inform the Councils evidence base and subsequent decision-making process on the selection of a preferred housing requirement, development strategy and site allocations.

Appendix 1 Delivery analysis of the 24 spatial options

Please Note: The assumptions, figures and tables in this appendix represent theoretical models for distribution based on the differing spatial scenarios and growth levels being tested by GCSP and their appointed consultants (for the sole purpose of testing the implications of differing options). They do not represent draft policy of GCSP or preferred strategies. In addition, AECOM has applied their own assumptions to help produce visual outputs for illustrative purposes only.

Option 1a: Densification of existing urban areas (Minimum)

Summary of option

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge: this is the last major brownfield site within Cambridge urban area and is being taken forward separately via an Area Action Plan.

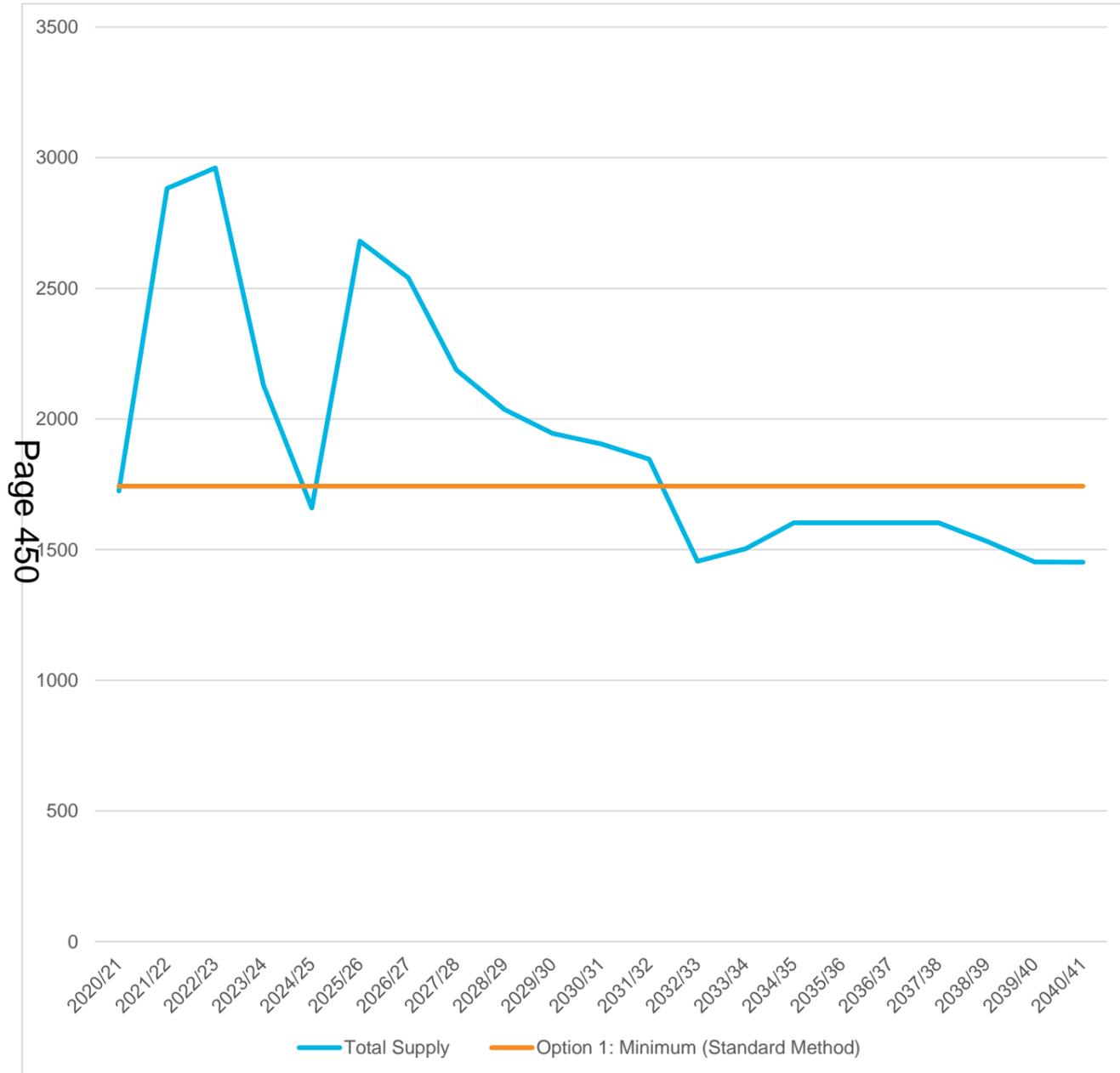
Minimum:

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- Cambridge urban area (low density) – not total capacity, only enough dwellings to fulfil balance to find

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	2590	
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	2,000
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1,900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	2681	2541	2188	2036	1945	1905	1846	1456	1538	1603	1603	1603	1603	1533	1453	1453	1453	40342
Option 1: Minimum (Standard Method)	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	36603
Comparison against Option 1: Minimum (Standard Method)	-19	1139	1218	387	-84	938	798	445	293	202	162	103	-287	-205	-140	-140	-140	-140	-210	-290	-290	3739	
Cumulative delivery	1724	4606	7567	9697	11356	14037	16578	18766	20802	22747	24652	26498	27954	29491	31094	32697	34300	35903	37436	38889	40342	-	
Cumulative requirement Option 1: Minimum (Standard Method)	1743	3486	5229	6972	8715	10458	12201	13944	15687	17430	19173	20916	22659	24402	26145	27888	29631	31374	33117	34860	36603	-	

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Rolling HDT	-	-	145%	152%	129%	124%	132%	142%	129%	118%	113%	109%	100%	93%	88%	91%	92%	92%	91%	88%	85%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1743dpa x 5	8715.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-2641.0
(d)	5 year requirement + Shortfall/Surplus	(1743 x 5) + (c)	8715.0
(e)	Add 10% buffer	(d) x 1.10	9586.5
(f)	Annual target	(e) / 5 years	1917.3
(g)	Supply within first 5 years		11391.0
(h)	Land supply	(g) / (f)	5.94
(i)	Deficit / surplus	(g) - (e)	1805

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Minimum housing requirement is largely met by existing commitments and the windfall allowance. Additional supply later in the plan period would act as a buffer to ensure delivery against the overall housing requirement. Some under-delivery against the annual housing requirement is anticipated later in the plan period from 2032/33 onwards which would result in the loss of a five-year housing land supply without additional allocations or changes to the phasing of the delivery of sites.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	Cambridge Urban Area would provide greater choice in the market throughout the plan period providing smaller units in a high demand location to complement the committed strategic sites, increasing market absorption.
House building capacity	Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.94 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	Concentrating development at sites within Cambridge urban area is likely to yield a number of sites that would meet the NPPF Paragraph 68 definition of "small sites", assisting with meeting the small sites requirement.
Housing Delivery Test	Housing Delivery Test is met until 3033/34 onwards when an Action Plan would need to be prepared. Delivery is not anticipated to drop below 85%, avoiding triggering the use of a 20% buffer on the five-year housing land supply.

Option 1b: Densification of existing urban areas (Medium)

Summary of option

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge: this is the last major brownfield site within Cambridge urban area and is being taken forward separately via an Area Action Plan.

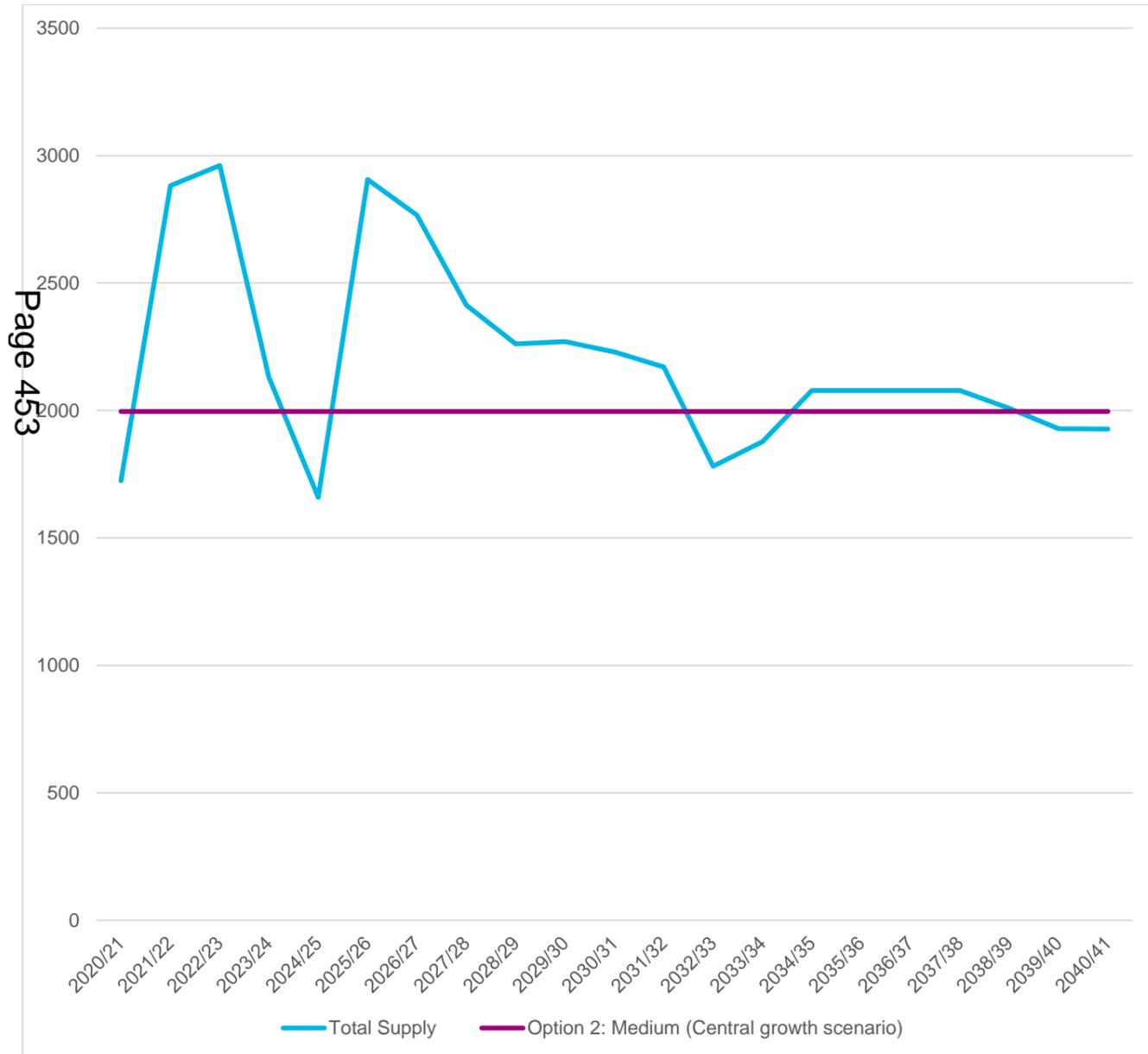
Medium:

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- Cambridge urban area (medium density)
- Cambridge Airport (initial phase post 2030, outside Green Belt, using historic delivery rates)
- Edge of Cambridge - Green Belt (equivalent to one site / broad location, using historic delivery rates) – not total capacity, only enough dwellings to fulfil balance to find
-

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Sambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	5,600
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1,900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1,900
Green Belt Fringe	0	0	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	0	0	400
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	2906	2766	2413	2261	2270	2230	2171	1781	2013	2078	2078	2078	2078	2008	1928	1928	1928	46342
Option 2: Medium (Central growth scenario)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	41916
Comparison against Option 2: Medium	-272	886	965	134	-337	910	770	417	265	274	234	175	-215	17	82	82	82	82	12	-68	-68	4426	

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
(Central growth scenario)																							
Cumulative delivery	1724	4606	7567	9697	11356	14262	17028	19441	21702	23972	26202	28373	30154	32166	34244	36322	38400	40478	42486	44414	46342	-	
Cumulative requirement Option 2: Medium (Central growth scenario)	1996	3992	5988	7984	9980	11976	13972	15968	17964	19960	21956	23952	25948	27944	29940	31936	33932	35928	37924	39920	41916	-	
Rolling HDT	-	-	145%	152%	129%	128%	140%	155%	142%	133%	129%	128%	118%	114%	112%	118%	119%	119%	118%	115%	112%	-	

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1996dpa x 5	9980.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-1376.0
(d)	5 year requirement + Shortfall/Surplus	(1996 x 5) + (c)	9980.0
(e)	Add 10% buffer	(d) x 1.10	10978.0
(f)	Annual target	(e) / 5 years	2195.6
(g)	Supply within first 5 years		12616.0
(h)	Land supply	(g) / (f)	5.75
(i)	Deficit / surplus	(g) - (e)	1638

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Additional supply in the mid-latter part of the plan period will enable delivery against the overall medium housing requirement. The urban area sites are anticipated to deliver from plan adoption onwards whilst the small-scale Green Belt sites would add supply to the middle part of the plan period, before the longer-term North East Cambridge and Cambridge Airport sites would be delivered. The option would enable the annual housing requirement to be met throughout the plan period apart from minor under-delivery in 2024/25, 2032/33 and 2039/40-2040/41.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	Cambridge Urban Area and urban extension sites would provide greater choice in the market throughout the plan period providing smaller units in a high demand location to complement the committed strategic sites, increasing market absorption. If Cambridge Airport and North East Cambridge were delivered concurrently it may result in a degree of competition, however there is considerable scope to ensure that the sites are sufficiently differentiated in terms of housing type and size to provide sufficient choice in the market.
House building capacity	This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.75 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	Concentrating development at sites within Cambridge urban area is likely to yield a number of sites that would meet the NPPF Paragraph 68 definition of "small sites", assisting with meeting the small sites requirement.
Housing Delivery Test	As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.

Option 1c: Densification of existing urban areas (Maximum)

Summary of option

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge: this is the last major brownfield site within Cambridge urban area and is being taken forward separately via an Area Action Plan.

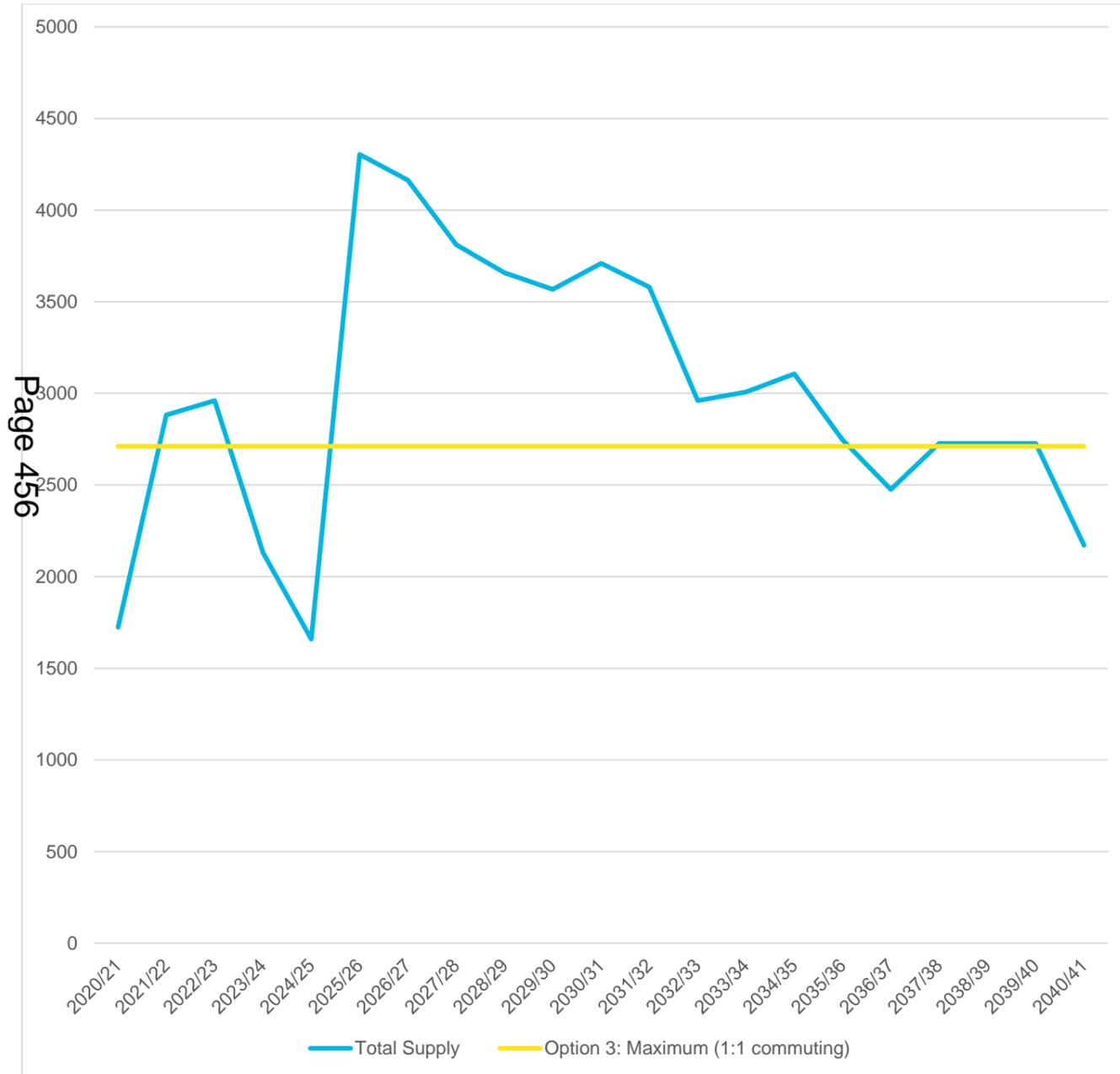
Maximum:

- All existing committed strategic sites assume double historic delivery rates from 2025/26 onwards (Northstowe 500dpa; Waterbeach 500dpa; Bourn Airfield 300dpa and Cambourne 300dpa).
- North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))
- Cambridge urban area (at high density)
- Cambridge airport (initial phase post 2030, outside Green Belt, higher delivery rates) – delivery by 2041 constrained to provide only enough dwellings to fulfil balance to find

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	319	9323
Waterbeach New Town	0	150	250	250	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	8900
Bourn Airfield	0	0	35	75	120	300	300	300	300	300	300	300	300	300	300	270	0	0	0	0	0	0	3500
Cambourne West	0	80	160	160	160	300	300	300	300	300	300	230	0	0	0	0	0	0	0	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	6,800
North East Cambridge	0	0	0	0	0	523	523	523	523	523	704	704	704	704	703	374	373	373	373	373	373	0	8,000
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	500	500	500	500	2,900	
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	4304	4164	3811	3659	3568	3709	3580	2960	3042	3106	2747	2476	2726	2726	2726	2242	62901	
Option 3: Maximum (1:1 commuting)	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	56931
Comparison against Option 3: Maximum (1:1 commuting)	-987	171	250	-581	-1052	1593	1453	1100	948	857	998	869	249	331	395	36	-235	15	15	15	-469	5970	
Cumulative delivery	1724	4606	7567	9697	11356	15660	19824	23635	27294	30862	34571	38151	41111	44152	47258	50005	52481	55207	57933	60659	62901	-	

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Cumulative requirement Option 3: Maximum (1:1 commuting)	2711	5422	8133	10844	13555	16266	18977	21688	24399	27110	29821	32532	35243	37954	40665	43376	46087	48798	51509	54220	56931	-
Rolling HDT	-	-	145%	152%	129%	155%	194%	235%	222%	211%	209%	208%	196%	183%	174%	170%	159%	152%	152%	156%	147%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	2711dpa x 5	13555.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	2199.0
(d)	5 year requirement + Shortfall/Surplus	(2711 x 5) + (c)	15754.0
(e)	Add 10% buffer	(d) x 1.10	17329.4
(f)	Annual target	(e) / 5 years	3465.9
(g)	Supply within first 5 years		19506.0
(h)	Land supply	(g) / (f)	5.63
(i)	Deficit / surplus	(g) - (e)	2177

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Additional supply in the mid-latter part of the plan period will enable delivery against the overall maximum housing requirement. The plan period starts with a shortfall against the significantly increased housing requirement figure, which results in the need for the shortfall to be met within the first five years under the Sedgefield method, increasing the five-year housing land supply requirement.</p> <p>The urban area sites are anticipated to deliver from plan adoption onward, before the longer-term Cambridge Airport site would be delivered. It is noted that this option includes the draft North East Cambridge AAP housing trajectory for the site, and if delivery is delayed against this trajectory then the five-year housing land supply position will be worsened.</p> <p>The urban area sites are assumed as “high density” options, and are expected to be delivered alongside windfall completions at the current rate. Capacity from the HELAA sites and from the windfall allowance, both currently being assessed, will need to ensure that there is no double-counting of capacity for this option to be realistic.</p> <p>The trajectory shows a peak in the middle of the plan period, in the first 5 years after plan adoption. This in turn is based on an assumption by the Councils that delivery rates can be doubled on existing strategic sites that are already consented or allocated and working their way through the development management process. A build-out rate of 500dpa is assumed on existing sites from 2025/26 (plan adoption) onwards. This is considered unrealistic for sites that are already allocated and working their way through the system.</p> <p>Average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models. Secondary sources and emerging primary research suggests that a traditional approach would be unlikely to exceed 300 dpa.</p>
Stepped housing requirement	<p>The maximum scenario would be a step-change in housing delivery, 88% higher than historic completions in 2002/03-2018/19. Given the projected under-delivery in the period 2020/21 to plan adoption (1st April 2025) the shortfall should be met in the first 5 years under the Sedgefield method under the PPG (unless the Liverpool method can be justified). Due to the fact that, under the Councils’ assumptions, this option can deliver a five-year housing land supply at plan adoption under the Sedgefield method, a stepped annual housing requirement is not necessary. If it transpires that delivery rates of 500dpa at existing committed strategic sites are not deliverable, then a stepped annual housing requirement would be necessary; although this would further increase an already challenging housing requirement later in the plan period.</p>
Market absorption including competition from similar sites	<p>Cambridge Urban Area and urban extension sites would provide greater choice in the market throughout the plan period providing smaller units in a high demand location to complement the committed strategic sites, increasing market absorption. If Cambridge Airport and North East Cambridge were delivered concurrently it may result in a degree of competition, however there is considerable scope to ensure that the sites are sufficiently differentiated in terms of housing type and size to provide sufficient choice in the market. Under this option only limited windfall development would be proposed villages, which could further increase absorption rates.</p>
House building capacity	<p>This level of supply is significantly (88%) above historic trends, which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 5.63 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council’s trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. This calculation has been undertaken using the Councils’ assumptions for lead-in times and build-out rates. As discussed above the assumptions for strategic sites under the maximum scenario are considered unrealistic and undeliverable, therefore it is unlikely that a five-year housing land supply would actually be able to be demonstrated at plan adoption if evidence confirms that only lower rates are deliverable.</p>
Meeting the small sites requirement	<p>Concentrating development at sites within Cambridge urban area is likely to yield a number of sites that would meet the NPPF Paragraph 68 definition of “small sites”, assisting with meeting the small sites requirement.</p>
Housing Delivery Test	<p>As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.</p>

Option 2a: Edge of Cambridge – outside the Green Belt (Minimum)

Summary of option

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

Minimum:

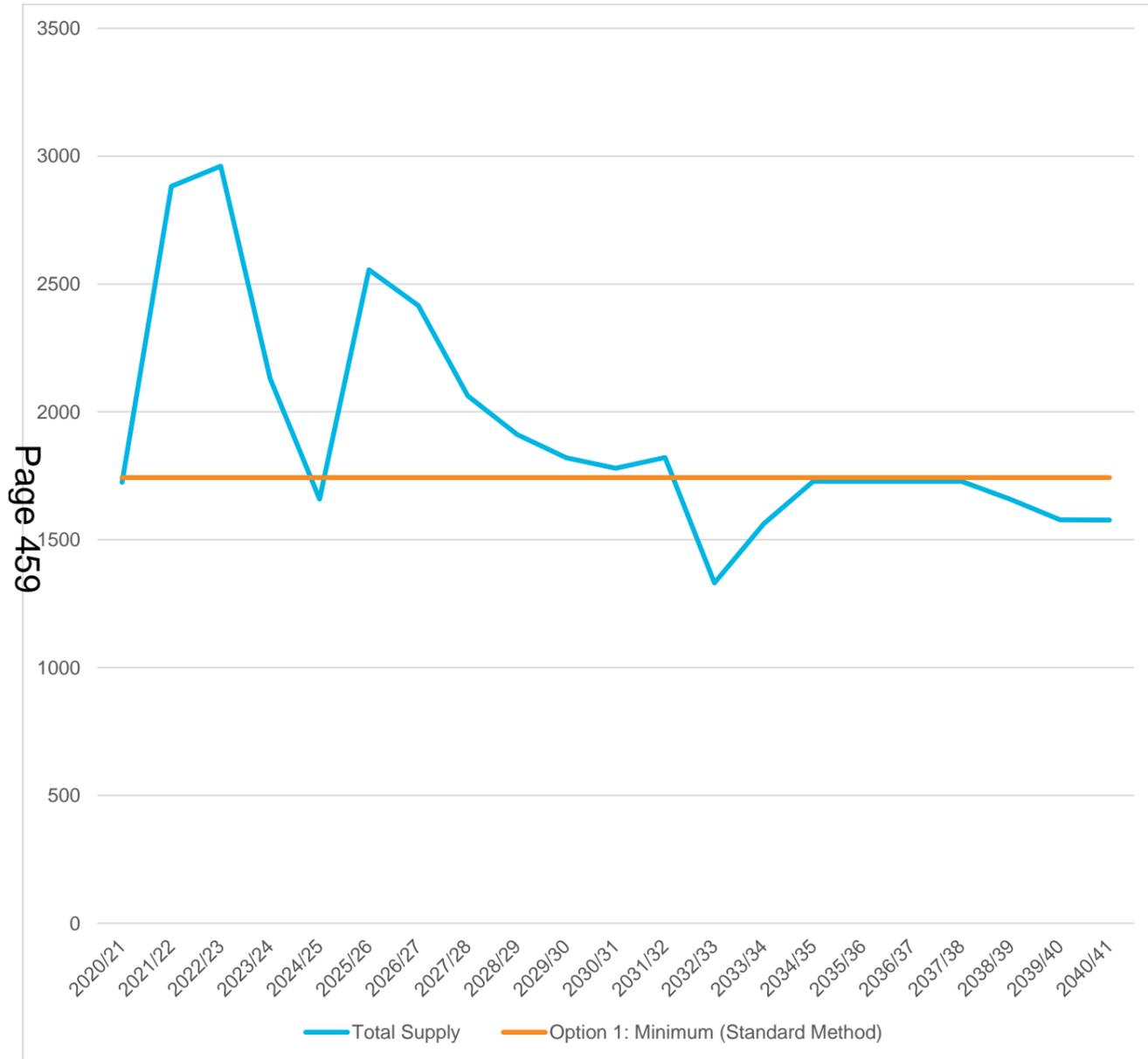
- Cambridge airport (initial phase post 2030, outside Green Belt, using historic delivery rates)
- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- One village site at a Rural Centre and outside the Green Belt to make up balance to find

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambridge West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	2590	
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736	
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1,900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1,900
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	100
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	1911	1820	1780	1821	1331	1563	1728	1728	1728	1728	1658	1578	1578	1578	40342
Option 1: Minimum (Standard Method)	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	36603
Comparison against Option 1: Minimum (Standard Method)	-19	1139	1218	387	-84	813	673	320	168	77	37	78	-412	-180	-15	-15	-15	-15	-85	-165	-165	3739	
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20302	22122	23902	25723	27054	28616	30344	32072	33800	35528	37186	38764	40342	-	
Cumulative requirement Option 1:	1743	3486	5229	6972	8715	10458	12201	13944	15687	17430	19173	20916	22659	24402	26145	27888	29631	31374	33117	34860	36603	-	

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
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Minimum (Standard Method)																						
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	122%	111%	105%	104%	94%	90%	88%	96%	99%	99%	98%	95%	92%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1743dpa x 5	8715.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-2641.0
(d)	5 year requirement + Shortfall/Surplus	(1743 x 5) + (c)	8715.0
(e)	Add 10% buffer	(d) x 1.10	9586.5
(f)	Annual target	(e) / 5 years	1917.3
(g)	Supply within first 5 years		10766.0
(h)	Land supply	(g) / (f)	5.62
(i)	Deficit / surplus	(g) - (e)	1180

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Minimum housing requirement is largely met by existing commitments and the windfall allowance. Additional supply later in the plan period would act as a buffer to ensure delivery against the overall housing requirement. Some under-delivery against the annual housing requirement is anticipated later in the plan period from 2032/33-2033/34 and 2039/40-2040/41 which would result in the loss of a five-year housing land supply without additional allocations or alternative phasing.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	Urban extension sites towards the end of the plan period would provide greater choice in the market, meeting needs in a high demand location to complement the committed strategic sites, reducing the risk of competition and increasing market absorption.
House building capacity	Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.62 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	The 100 dwellings at villages could yield small sites to help meet the NPPF Paragraph 68 small sites requirement. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not anticipated that this option will enable the Councils to meet NPPF requirements.
Housing Delivery Test	Housing Delivery Test is met until 3032/33 onwards when an Action Plan would need to be prepared. Delivery is not anticipated to drop below 85%, avoiding triggering the use of a 20% buffer on the five-year housing land supply.

Option 2b: Edge of Cambridge – outside the Green Belt (Medium)

Summary of option

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

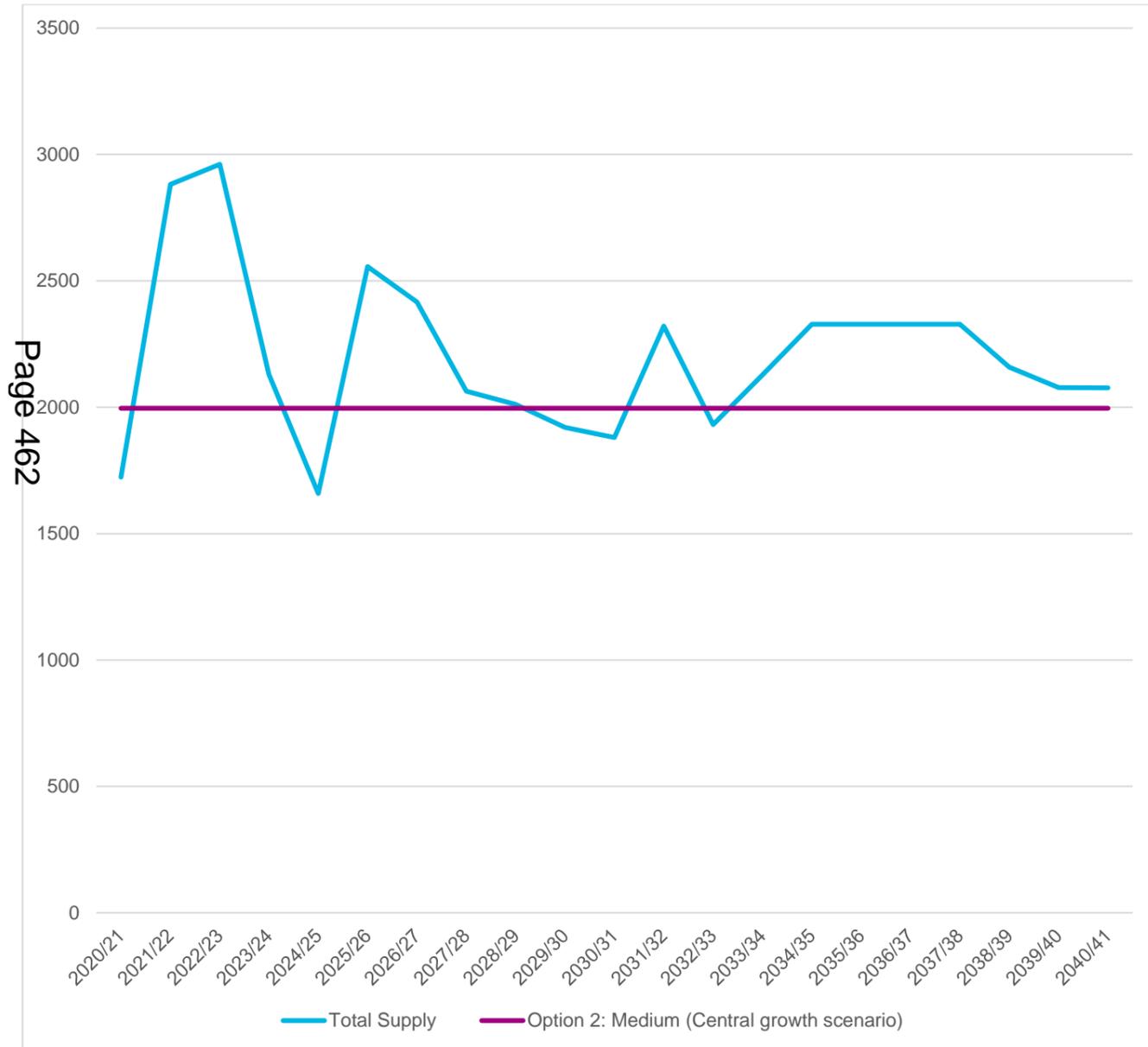
Medium:

- Cambridge airport (initial phase post 2030, outside Green Belt, using historic delivery rates)
- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- Two smaller new settlements of 4,500 dwellings on public transport corridors to meet the balance to find (delivery by 2041, using historic delivery rates)
- Balance to find spread across the Rural Centre (30%) and Minor Rural Centres (70%) outside of the Green Belt

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1,900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1,900
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	500	500	500	500	500	500	500	500	500	500	500	5000
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	0	0	0	0	1000
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	2011	1920	2000	2321	1931	2163	2328	2328	2328	2328	2158	2078	2078	2078	46362
Option 2: Medium (Central growth scenario)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	41916
Comparison against Option 2: Medium (Central growth scenario)	-272	886	965	134	-337	560	420	67	15	-76	4	325	-65	167	332	332	332	332	162	82	82	82	4446

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20402	22322	24322	26643	28574	30736	33064	35392	37720	40048	42206	44284	46362	-
Cumulative requirement Option 2: Medium (Central growth scenario)	1996	3992	5988	7984	9980	11976	13972	15968	17964	19960	21956	23952	25948	27944	29940	31936	33932	35928	37924	39920	41916	-
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	124%	115%	113%	119%	120%	123%	123%	130%	134%	134%	130%	126%	121%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1996dpa x 5	9980.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-1376.0
(d)	5 year requirement + Shortfall/Surplus	(1996 x 5) + (c)	9980.0
(e)	Add 10% buffer	(d) x 1.10	10978.0
(f)	Annual target	(e) / 5 years	2195.6
(g)	Supply within first 5 years		10966.0
(h)	Land supply	(g) / (f)	4.99
(i)	Deficit / surplus	(g) - (e)	-12

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Additional supply in the mid-latter part of the plan period will enable delivery against the overall medium housing requirement. North East Cambridge, Cambridge Airport and two new settlement sites are anticipated to deliver in the longer-term which leaves minor under-delivery against the annual housing requirement in 2029/30-2030/31 and 2032/33.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	Urban extension sites towards the end of the plan period would provide greater choice in the market, meeting needs in a high demand location to complement the committed strategic sites, reducing the risk of competition and increasing market absorption. However the two new settlements would compete with the committed new settlements from 2030 onwards when a total of six new settlements would be under construction, selling a similar product in similar locations. This may result in a reduction in the build-out rate.
House building capacity	This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 4.99 years is anticipated at plan adoption with a 10% buffer. This is marginal and should be kept under review. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. The marginal lack of a five-year housing land supply is based on a cautious assumption that 100dpa would come forward in the villages from 2028/29 onwards; however shorter lead-in times and higher annual completions may be possible.
Meeting the small sites requirement	The 1,000 dwellings at villages could yield small sites to help meet the NPPF Paragraph 68 small sites requirement. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, the 1,000 dwellings in the villages will need to be used to make small site allocations to enable the Councils to meet NPPF requirements.
Housing Delivery Test	As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.

Option 2c: Edge of Cambridge – outside the Green Belt (Maximum)

Summary of option

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

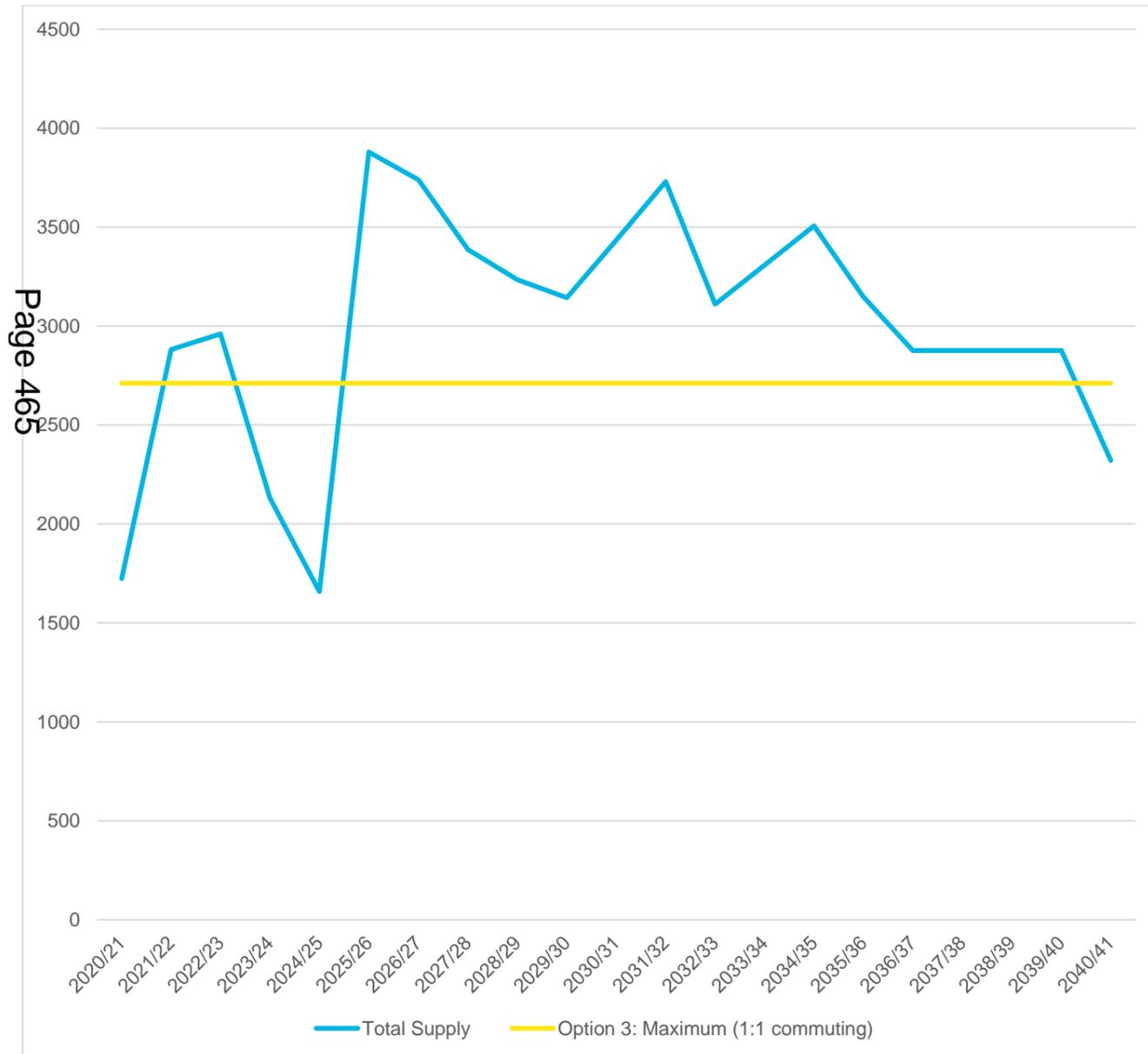
Maximum:

- All existing committed strategic sites assume double historic delivery rates from 2025/26 onwards (Northstowe 500dpa; Waterbeach 500dpa; Bourn Airfield 300dpa and Cambourne 300dpa).
- Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates)
- North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))
- One larger new settlement of 9,000 dwellings on a public transport corridor (delivery by 2041, using higher delivery rates but constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure)
- One smaller new settlement of 4,500 dwellings on a public transport corridor (delivery by 2041, using higher delivery rates but constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure)

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	319	9323
Waterbeach New Town	0	150	250	250	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	8900
Bourn Airfield	0	0	35	75	120	300	300	300	300	300	300	300	300	300	300	270	0	0	0	0	0	0	3500
Cambourne West	0	80	160	160	160	300	300	300	300	300	300	230	0	0	0	0	0	0	0	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	523	523	523	523	523	704	704	704	704	703	374	373	373	373	373	373	0	8,000
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	300	500	500	500	500	500	500	500	500	3800
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	150	575	575	575	575	575	575	575	575	575	575	575	5900
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	3879	3739	3386	3234	3143	3434	3730	3110	3507	3506	3147	2876	2876	2876	2876	2392	63066	
Option 3: Maximum (1:1 commuting)	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	56931

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
Comparison against Option 3: Maximum (1:1 commuting)	-987	171	250	-581	-1052	1168	1028	675	523	432	723	1019	399	796	795	436	165	165	165	165	-319	6135
Cumulative delivery	1724	4606	7567	9697	11356	15235	18974	22360	25594	28737	32171	35901	39011	42517	46023	49170	52046	54922	57798	60674	63066	-
Cumulative requirement Option 3: Maximum (1:1 commuting)	2711	5422	8133	10844	13555	16266	18977	21688	24399	27110	29821	32532	35243	37954	40665	43376	46087	48798	51509	54220	56931	-
Rolling HDT	-	-	145%	152%	129%	147%	177%	210%	198%	187%	188%	197%	196%	198%	194%	194%	182%	170%	165%	165%	156%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component Step	Calculation	Number
(a) Requirement from start of plan period (1st April 2020 - 31st March 2025)	2711dpa x 5	13555.0
(b) Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c) Shortfall/Surplus*	(a) - (b)	2199.0
(d) 5 year requirement + Shortfall/Surplus	(2711 x 5) + (c)	15754.0
(e) Add 10% buffer	(d) x 1.10	17329.4
(f) Annual target	(e) / 5 years	3465.9
(g) Supply within first 5 years		17381.0
(h) Land supply	(g) / (f)	5.01
(i) Deficit / surplus	(g) - (e)	52

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and

pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Additional supply in the mid-latter part of the plan period will enable delivery against the overall maximum housing requirement. The plan period starts with a shortfall against the significantly increased annual housing requirement figure, which results in the need for the shortfall to be met within the first five years under the Sedgefield method, increasing the five-year housing land supply requirement. North East Cambridge, Cambridge Airport and two new settlement sites are anticipated to deliver in the longer-term. It is noted that this option includes the draft North East Cambridge AAP housing trajectory for the site, and if delivery is delayed against this trajectory then the five-year housing land supply position will be worsened.</p> <p>The trajectory shows a peak in the middle of the plan period, in the first 5 years after plan adoption. This in turn is based on an assumption by the Councils that delivery rates can be doubled on existing strategic sites that are already consented or allocated and working their way through the development sites process. A build-out rate of 500dpa is assumed on existing sites from 2025/26 (plan adoption) onwards. This is considered unrealistic for sites that are already allocated and working their way through the system.</p> <p>Average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models. Secondary sources and emerging primary research suggests that a traditional approach would be unlikely to exceed 300 dpa.</p>
Stepped housing requirement	<p>The maximum scenario would be a step-change in housing delivery, 88% higher than historic completions in 2002/03-2018/19. Given the projected under-delivery in the period 2020/21 to plan adoption (1st April 2025) the shortfall should be met in the first 5 years under the Sedgefield method under the PPG (unless the Liverpool method can be justified). Due to the fact that, under the Councils' assumptions, this option can deliver a marginal five-year housing land supply at plan adoption under the Sedgefield method, a stepped annual housing requirement is not necessary. If it transpires that delivery rates of 500dpa at existing committed strategic sites is not deliverable, then a stepped annual housing requirement would be necessary; although this would further increase an already challenging annual housing requirement later in the plan period.</p>
Market absorption including competition from similar sites	<p>Urban extension sites towards the end of the plan period would provide greater choice in the market, meeting needs in a high demand location to complement the committed strategic sites, reducing the risk of competition and increasing market absorption. However the proposed new settlements would compete with the committed new settlements from 2030 onwards when a total of five new settlements would be under construction, selling a similar product in similar locations. This may result in a reduction in the build-out rate. Under the Council's assumptions there could be over 2,000 dwellings being delivered in 2030/31 from new settlements alone.</p>
House building capacity	<p>This level of supply is significantly (88%) above historic trends, which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 5.01 years is anticipated at plan adoption with a 10% buffer. This is marginal and should be kept under review. This calculation has been undertaken using the Councils' assumptions for lead-in times and build-out rates. As discussed above the assumptions for strategic sites under the maximum scenario are considered unrealistic and undeliverable, therefore it is unlikely that a five-year housing land supply would actually be able to be demonstrated at plan adoption if evidence confirms that only lower rates are deliverable. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a less marginal five-year housing land supply to be demonstrated some new sites that can deliver in the short-term, such as small sites in villages, would be needed, or an argument advanced for a stepped annual housing requirement.</p>
Meeting the small sites requirement	<p>No new small sites are proposed in this option. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not expected that this option will enable the Councils to meet NPPF requirements.</p>
Housing Delivery Test	<p>As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.</p>

Option 3a: Edge of Cambridge – Green Belt (Minimum)

Summary of option

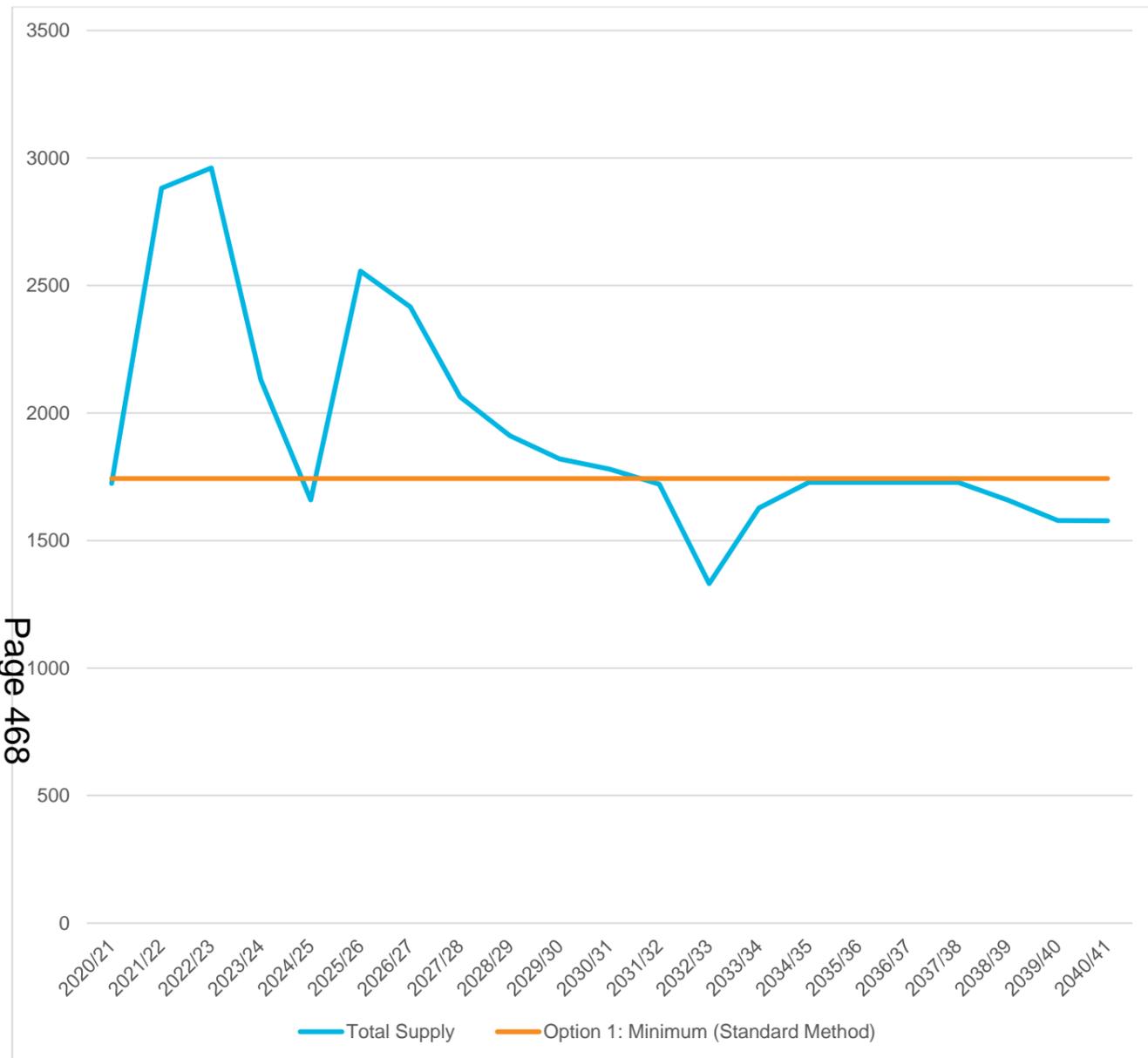
This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

Minimum:

- Edge of Cambridge - Green Belt (equivalent to three sites / broad locations, with development limited to ensure that the strategic option homes total equals the balance to find.

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	2590	
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	400	500	500	500	500	500	500	500	500	3,900
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	1911	1820	1780	1721	1331	1628	1728	1728	1728	1728	1658	1578	1578	40307	
Option 1: Minimum (Standard Method)	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	36603	
Comparison against Option 1: Minimum (Standard Method)	-19	1139	1218	387	-84	813	673	320	168	77	37	-22	-412	-115	-15	-15	-15	-15	-85	-165	-165	3704	
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20302	22122	23902	25623	26954	28581	30309	32037	33765	35493	37151	38729	40307	-	
Cumulative requirement Option 1: Minimum (Standard Method)	1743	3486	5229	6972	8715	10458	12201	13944	15687	17430	19173	20916	22659	24402	26145	27888	29631	31374	33117	34860	36603	-	
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	122%	111%	105%	102%	92%	89%	90%	97%	99%	99%	98%	95%	92%	-	

Housing trajectory



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Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1743dpa x 5	8715.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-2641.0
(d)	5 year requirement + Shortfall/Surplus	(1743 x 5) + (c)	8715.0
(e)	Add 10% buffer	(d) x 1.10	9586.5
(f)	Annual target	(e) / 5 years	1917.3
(g)	Supply within first 5 years		10766.0
(h)	Land supply	(g) / (f)	5.62
(i)	Deficit / surplus	(g) - (e)	1180

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Minimum housing requirement is largely met by existing commitments and the windfall allowance. Additional supply later in the plan period would act as a buffer to ensure delivery against the overall housing requirement. Some under-delivery against the annual housing requirement anticipated later in the plan period from 2032/33-2033/34 and 2038/39-2040/41 which would result in the loss of a five-year housing land supply without additional allocations or changes to the phasing of the delivery of sites.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	Urban extension sites towards the end of the plan period would provide greater choice in the market, meeting needs in a high demand location to complement the committed strategic sites, reducing the risk of competition and increasing market absorption. Given the need for Green Belt release through adoption of a new plan the lead-in times would be fairly lengthy, and the sites would likely be delivering concurrently, competing with one another, which could reduce market absorption.
House building capacity	Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.62 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	It is unlikely that Green Belt allocations would yield additional small sites. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not anticipated that this option will enable the Councils to meet NPPF requirements.
Housing Delivery Test	Housing Delivery Test is met until 3032/33 onwards when an Action Plan would need to be prepared. Delivery is not anticipated to drop below 85%, avoiding triggering the use of a 20% buffer on the five-year housing land supply.

Option 3b: Edge of Cambridge – Green Belt (Medium)

Summary of option

This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

Medium:

- Edge of Cambridge - Green Belt (equivalent to five sites / broad locations, using historic delivery rates)
- Minimal balance to find located within Cambridge urban area.
-

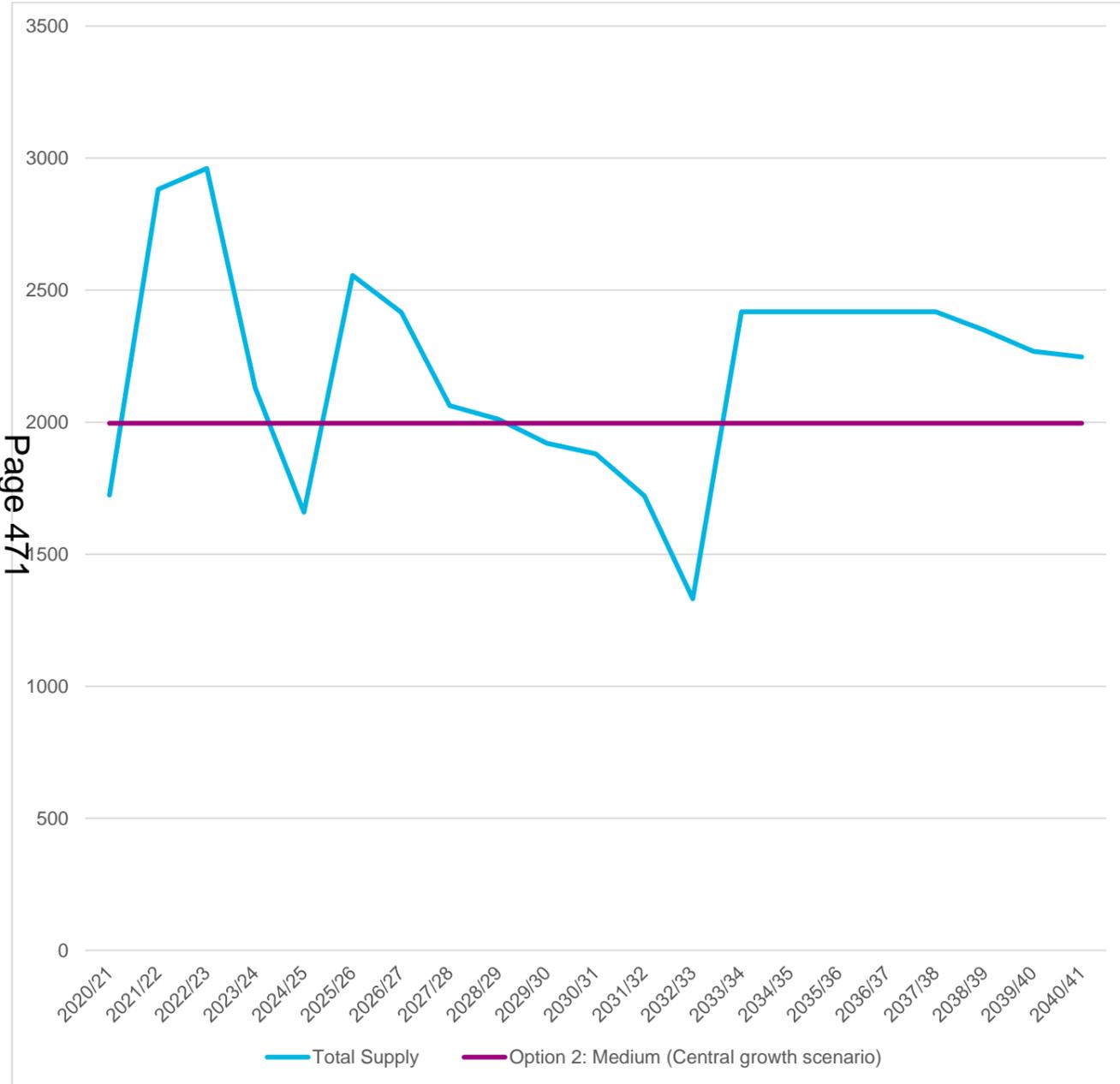
Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80				2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736	
Cambridge Urban Area	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	0	0	0	0	0	0	0	300
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	1190	1190	1190	1190	1190	1190	1190	1170	9,500	
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	2011	1920	1880	1721	1331	2418	2418	2418	2418	2418	2348	2268	2268	46227	
Option 2: Medium (Central growth scenario)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	41916	
Comparison against Option 2: Medium (Central growth scenario)	-272	886	965	134	-337	560	420	67	15	-76	-116	-275	-665	422	422	422	422	422	352	272	272	4311	
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20402	22322	24202	25923	27254	29671	32089	34507	36925	39343	41691	43959	46227	-	
Cumulative requirement Option 2:	1996	3992	5988	7984	9980	11976	13972	15968	17964	19960	21956	23952	25948	27944	29940	31936	33932	35928	37924	39920	41916	-	

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
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Medium (Central growth scenario)

Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	124%	115%	111%	106%	94%	105%	118%	139%	139%	139%	137%	135%	132%	-
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Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1996dpa x 5	9980.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-1376.0
(d)	5 year requirement + Shortfall/Surplus	(1996 x 5) + (c)	9980.0
(e)	Add 10% buffer	(d) x 1.10	10978.0
(f)	Annual target	(e) / 5 years	2195.6
(g)	Supply within first 5 years		10966.0
(h)	Land supply	(g) / (f)	4.99
(i)	Deficit / surplus	(g) - (e)	-12

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from previous years". The PPG does not state that over-delivery in the past can be used to offset future supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Additional supply in the mid-latter part of the plan period will enable delivery against the overall medium housing requirement. The Green Belt sites would add supply to the middle to latter part of the plan period, however the small amount of development in Cambridge Urban Area (300 dwellings) in addition to existing commitments would not be sufficient to deliver the annual housing requirement in the middle of the plan period. The option would enable the annual housing requirement to be met throughout the plan period apart from the years 2029/30-2032/33. Potentially removing one or two of the Green Belt sites and reallocating the development in the urban area would lead to a smoother trajectory.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	Urban extension sites towards the end of the plan period would provide greater choice in the market, meeting needs in a high demand location to complement the committed strategic sites, reducing the risk of competition and increasing market absorption. Given the need for Green Belt release through adoption of a new plan the lead-in times would be fairly lengthy, and the sites would likely be delivering concurrently, competing with one another, which could reduce market absorption. It is noted that there are five potential Green Belt sites that are anticipated to deliver concurrently. Providing that they are sufficiently distant from one another to reduce competition, this should reduce the potential for competition between the sites and with the new settlement commitments.
House building capacity	This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 4.99 years is anticipated at plan adoption with a 10% buffer. This is marginal and should be kept under review. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. The marginal lack of a five-year housing land supply is based on the assumption that Green Belt sites would not come forward until 2033/34; however shorter lead-in times may be possible. However, to enable a five-year housing land supply to be met alternative short-term allocations could be made (such as small sites in villages), or potentially an argument could be advanced for a stepped annual housing requirement, but it is not considered that a convincing case could be made in light of the PPG requirement for the increase to be "significant" and to "not seek to unnecessarily delay meeting identified development needs".
Meeting the small sites requirement	It is unlikely that Green Belt allocations would yield additional small sites. The urban area sites (300 dwellings) may yield small sites, but it is unlikely to do so at scale. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not anticipated that this option will enable the Councils to meet NPPF requirements.
Housing Delivery Test	As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.

Option 3c: Edge of Cambridge – Green Belt (Maximum)

Summary of option

This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

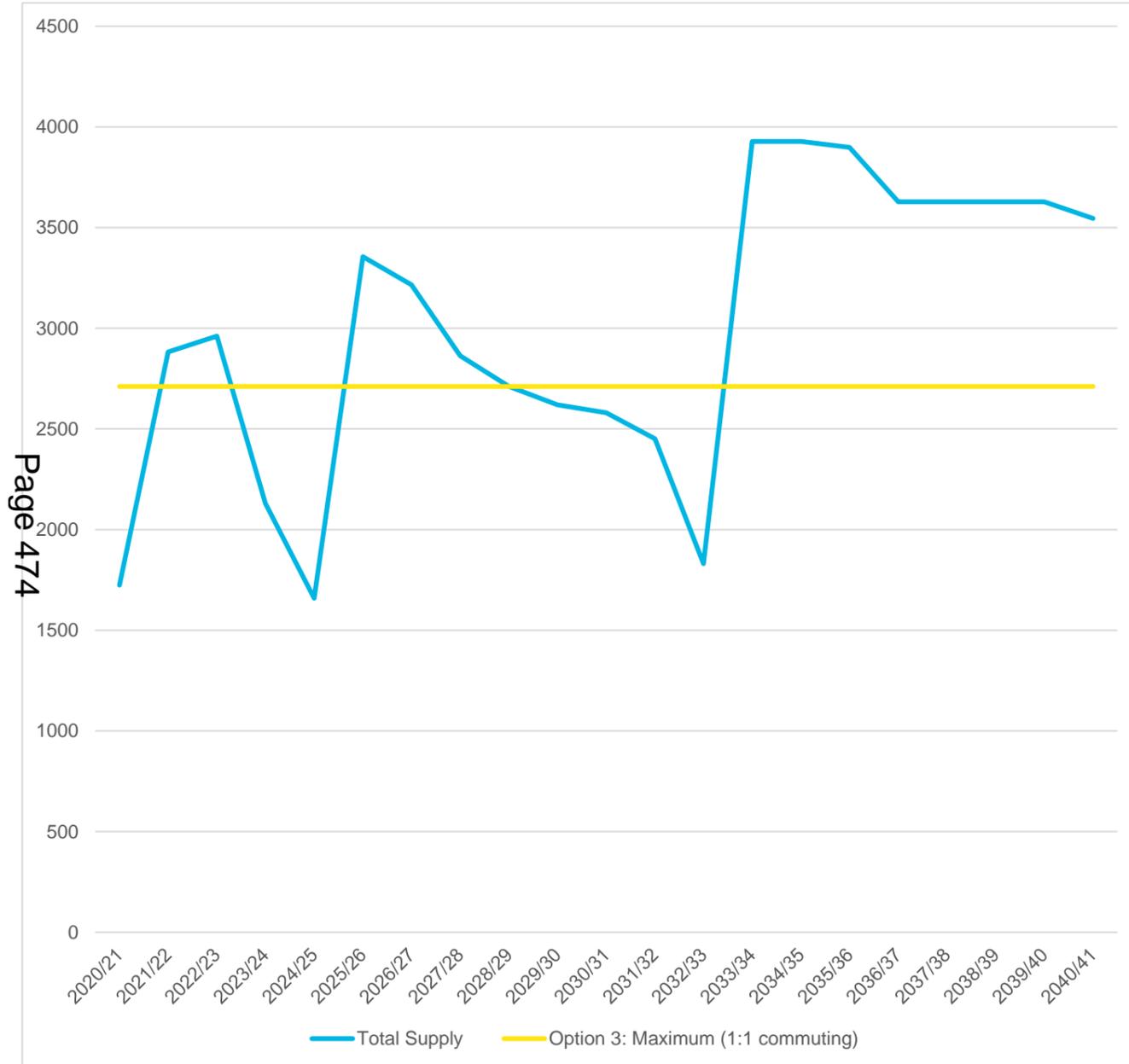
Maximum:

- All existing committed strategic sites assume double historic delivery rates from 2025/26 onwards (Northstowe 500dpa; Waterbeach 500dpa; Bourn Airfield 300dpa and Cambourne 300dpa).
- Edge of Cambridge - Green Belt (equivalent to five sites / broad locations, using higher delivery rates, with development limited to ensure the strategic option equals the balance to find).

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	319	9323
Waterbeach New Town	0	150	250	250	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	8900
Bourn Airfield	0	0	35	75	120	300	300	300	300	300	300	300	300	300	300	270	0	0	0	0	0	0	3500
Cambourne West	0	80	160	160	160	300	300	300	300	300	300	230	0	0	0	0	0	0	0	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	2200	2200	2200	2200	2200	2200	2200	2200	2300	17,700
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	3356	3216	2863	2711	2620	2580	2451	1831	3928	3928	3898	3628	3628	3628	3628	3447	62696	
Option 3: Maximum (1:1 commuting)	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	56931
Comparison against Option 3: Maximum (1:1 commuting)	-987	171	250	-581	-1052	645	505	152	0	-91	-131	-260	-880	1217	1217	1187	917	917	917	917	736	5765	
Cumulative delivery	1724	4606	7567	9697	11356	14712	17928	20791	23502	26122	28702	31153	32984	36911	40839	44737	48365	51993	55621	59249	62696	-	
Cumulative requirement Option 3: Maximum (1:1 commuting)	2711	5422	8133	10844	13555	16266	18977	21688	24399	27110	29821	32532	35243	37954	40665	43376	46087	48798	51509	54220	56931	-	

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
Rolling HDT	-	-	145%	152%	129%	137%	157%	180%	168%	157%	151%	146%	131%	157%	185%	225%	219%	213%	208%	208%	205%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	2711dpa x 5	13555.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	2199.0
(d)	5 year requirement + Shortfall/Surplus	(2711 x 5) + (c)	15754.0
(e)	Add 10% buffer	(d) x 1.10	17329.4
(f)	Annual target	(e) / 5 years	3465.9
(g)	Supply within first 5 years		14766.0
(h)	Land supply	(g) / (f)	4.26
(i)	Deficit / surplus	(g) - (e)	-2563

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Additional supply in the mid-latter part of the plan period will enable delivery against the overall maximum housing requirement. The Green Belt sites would add supply to the middle to latter part of the plan period, however it would not be sufficient to deliver the annual housing requirement in the middle of the plan period. The option would enable the annual housing requirement to be met throughout the plan period apart from the years 2029/30-2032/33. Potentially removing one or two of the Green Belt sites and reallocating the development in the urban area would lead to a smoother trajectory.</p> <p>The plan period starts with a shortfall against the significantly increased housing requirement figure, which results in the need for the shortfall to be met within the first five years under the Sedgefield method, increasing the five-year housing land supply requirement beyond that which can be delivered under this option, resulting in the need for a stepped annual housing requirement and/or the Liverpool method to meeting the shortfall over the plan period.</p> <p>The trajectory shows a peak in the middle of the plan period, in the first 5 years after plan adoption. This in turn is based on an assumption by the Councils that delivery rates can be doubled on existing strategic sites that are already consented or allocated and working their way through the development management process. A build-out rate of 500dpa is assumed on existing sites from 2025/26 (plan adoption) onwards. This is considered unrealistic for sites that are already allocated and working their way through the system.</p> <p>Average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models. Secondary sources and emerging primary research suggests that a traditional approach would be unlikely to exceed 300 dpa</p>
Stepped housing requirement	<p>The maximum scenario would be a step-change in housing delivery, 88% higher than historic completions in 2002/03-2018/19. Given the projected under-delivery in the period 2020/21 to plan adoption (1st April 2025) the shortfall should be met in the first 5 years under the Sedgefield method under the PPG (unless the Liverpool method can be justified). Due to the fact that, under the Councils' assumptions, this option cannot deliver a five-year housing land supply at plan adoption under the Sedgefield method, either the Liverpool method or a stepped annual housing requirement is necessary. If it transpires that delivery rates of 500dpa at existing committed strategic sites is not deliverable, then a stepped annual housing requirement would be necessary; although this would further increase an already challenging housing requirement later in the plan period.</p>
Market absorption including competition from similar sites	<p>Urban extension sites towards the end of the plan period would provide greater choice in the market, meeting needs in a high demand location to complement the committed strategic sites, reducing the risk of competition and increasing market absorption. Given the need for Green Belt release through adoption of a new plan the lead-in times would be fairly lengthy, and the sites would likely be delivering concurrently, competing with one another, which could reduce market absorption. It is noted that there are five potential Green Belt sites that are anticipated to deliver concurrently at significant scale. Such a level of sustained planned delivery in similar locations would lead to competition between the sites which could reduce build-out rates.</p>
House building capacity	<p>This level of supply is significantly (88%) above historic trends, which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 4.26 years is anticipated at plan adoption with a 10% buffer. This calculation has been undertaken using the Councils' assumptions for lead-in times and build-out rates. As discussed above the assumptions for strategic allocations under the maximum scenario are considered unrealistic and undeliverable, therefore it is unlikely that a five-year housing land supply would actually be able to be demonstrated at plan adoption if evidence confirms that only lower rates are deliverable. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met additional short-term allocations could be made (such as small sites in villages), or an argument advanced for a stepped annual housing requirement.</p>
Meeting the small sites requirement	<p>It is assumed that Green Belt allocations would not yield additional small sites. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not anticipated that this option will enable the Councils to meet NPPF requirements.</p>
Housing Delivery Test	<p>As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.</p>

Option 4a: Dispersal – new settlements (Minimum)

Summary of option

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

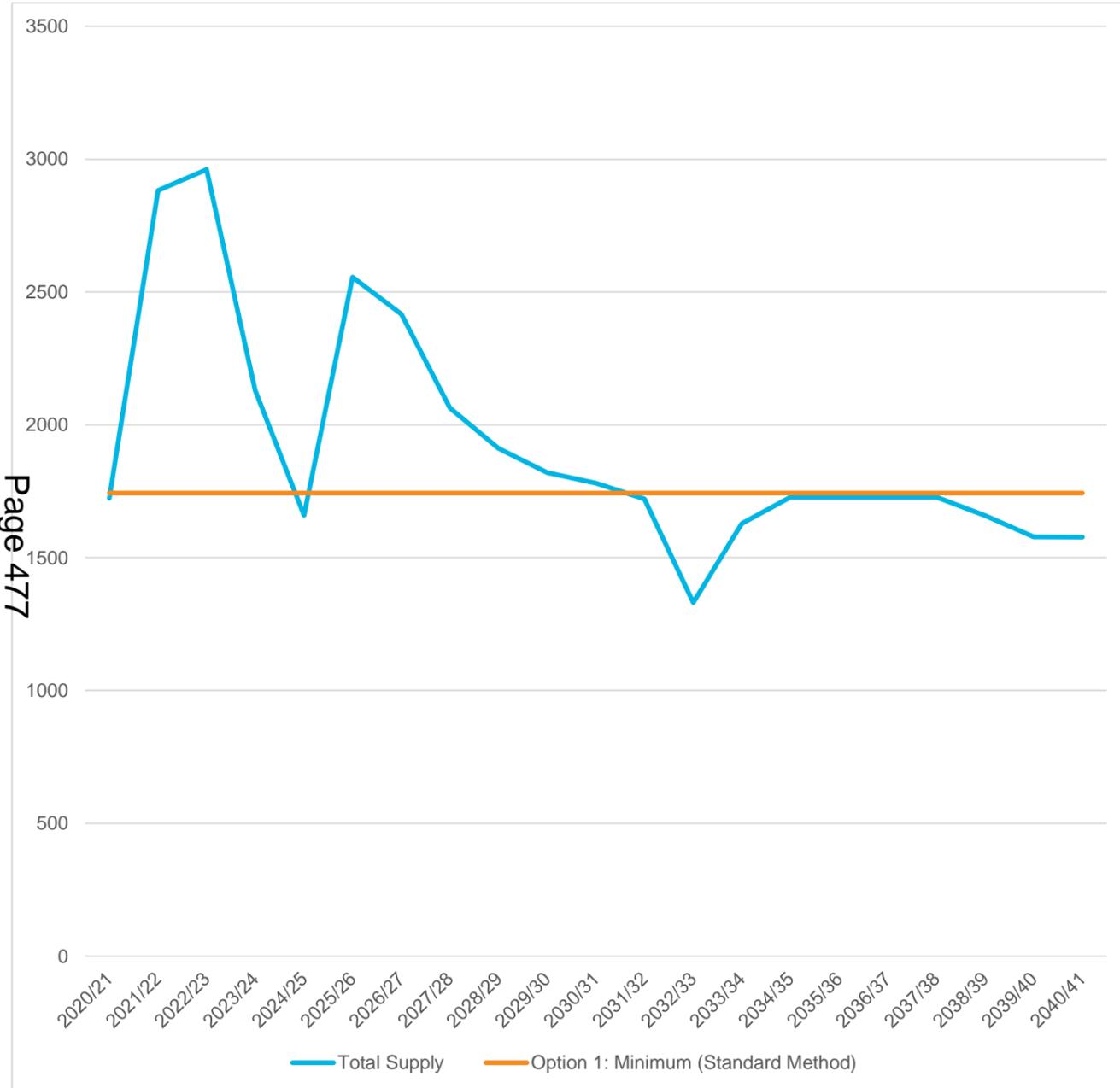
Minimum:

- Two smaller new settlements of 4,500 dwellings on a public transport corridor (delivery by 2041, using historic delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80				2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	400	500	500	500	500	500	500	500	500	3900
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	1911	1820	1780	1721	1331	1628	1728	1728	1728	1728	1658	1578	1578	1578	40307
Option 1: Minimum (Standard Method)	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	36603
Comparison against Option 1: Minimum (Standard Method)	-19	1139	1218	387	-84	813	673	320	168	77	37	-22	-412	-115	-15	-15	-15	-15	-85	-165	-165	3704	
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20302	22122	23902	25623	26954	28581	30309	32037	33765	35493	37151	38729	40307	-	
Cumulative requirement Option 1: Minimum (Standard Method)	1743	3486	5229	6972	8715	10458	12201	13944	15687	17430	19173	20916	22659	24402	26145	27888	29631	31374	33117	34860	36603	-	

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	122%	111%	105%	102%	92%	89%	90%	97%	99%	99%	98%	95%	92%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1743dpa x 5	8715.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-2641.0
(d)	5 year requirement + Shortfall/Surplus	(1743 x 5) + (c)	8715.0
(e)	Add 10% buffer	(d) x 1.10	9586.5
(f)	Annual target	(e) / 5 years	1917.3
(g)	Supply within first 5 years		10766.0
(h)	Land supply	(g) / (f)	5.62
(i)	Deficit / surplus	(g) - (e)	1180

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Minimum housing requirement is largely met by existing commitments and the windfall allowance. Additional supply later in the plan period would act as a buffer to ensure delivery against the overall housing requirement. Some under-delivery against the annual housing requirement anticipated later in the plan period from 2032/33-2033/34 and 2038/39-2040/41 which would result in the loss of a five-year housing land supply without additional allocations or changes to the phasing of the delivery of sites.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	New settlement sites towards the end of the plan period would deliver a similar product to the existing new settlements that are committed, which may not result in delivery of a wide enough range of the different types of housing in the different locations that the market wants. This would result in increased competition between committed and proposed new settlements, potentially reducing build-out rates as the market struggles to absorb a fairly homogenous product.
House building capacity	Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.62 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	No new small sites are proposed in this option. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not anticipated that this option will enable the Councils to meet NPPF requirements.
Housing Delivery Test	Housing Delivery Test is met until 3032/33 onwards when an Action Plan would need to be prepared. Delivery is not anticipated to drop below 85%, avoiding triggering the use of a 20% buffer on the five-year housing land supply.

Option 4b: Dispersal – new settlements (Medium)

Summary of option

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

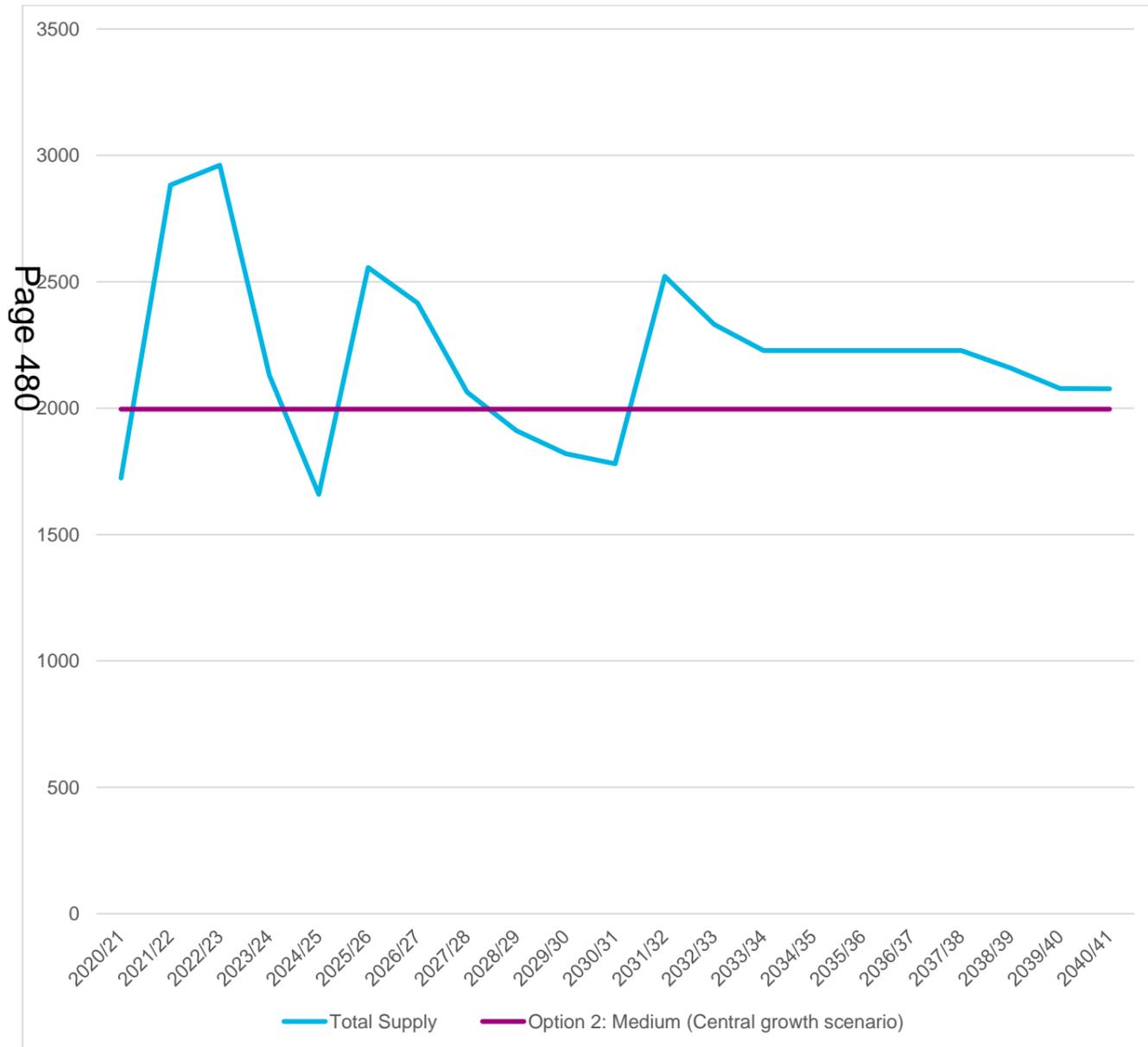
Medium:

- Three new settlements on public transport corridors (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures), including:
 - Two larger new settlements of 9,000 dwellings
 - One smaller new settlement of 4,500 dwellings
- One smaller new settlement of 4,500 homes on the road network (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures).

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	27	14419
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Hambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	600	750	750	750	750	750	750	750	750	750	750	7350
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	200	250	250	250	250	250	250	250	250	250	250	2450
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	1911	1820	1780	2571	2331	2228	2228	2228	2228	2228	2158	2078	2078	2078	46257
Option 2: Medium (Central growth scenario)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	41916

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Comparison against Option 2: Medium (Central growth scenario)	-272	886	965	134	-337	560	420	67	-85	-176	-216	575	335	232	232	232	232	232	162	82	82	4341
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20302	22122	23902	26473	28804	31031	33259	35487	37715	39943	42101	44179	46257	-
Cumulative requirement Option 2: Medium (Central growth scenario)	1996	3992	5988	7984	9980	11976	13972	15968	17964	19960	21956	23952	25948	27944	29940	31936	33932	35928	37924	39920	41916	-
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	122%	111%	105%	118%	128%	136%	130%	128%	128%	128%	126%	124%	121%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1996dpa x 5	9980.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-1376.0
(d)	5 year requirement + Shortfall/Surplus	(1996 x 5) + (c)	9980.0
(e)	Add 10% buffer	(d) x 1.10	10978.0
(f)	Annual target	(e) / 5 years	2195.6
(g)	Supply within first 5 years		10766.0
(h)	Land supply	(g) / (f)	4.90
(i)	Deficit / surplus	(g) - (e)	-212

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and

pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Additional supply in the mid-latter part of the plan period will enable delivery against the overall medium housing requirement. The four new settlement sites are anticipated to deliver in the longer-term which leaves a marginal shortfall against the annual housing requirement in the middle of the plan period. Using the Councils' assumptions this option would enable the annual housing requirement to be met throughout the plan period apart from minor under-delivery in 2028/29 and 2030/31. Additional smaller site allocations with short lead-in times may be required to meet the annual housing requirement in the middle of the plan period.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	New settlement sites towards the end of the plan period would deliver a similar product to the existing new settlements that are committed, which may not result in delivery of a wide enough range of the different types of housing in the different locations that the market wants. This would result in increased competition between committed and proposed new settlements, potentially reducing build-out rates as the market struggles to absorb a fairly homogenous product. The four new settlements would compete with the committed new settlements from 2030 onwards when a total of eight new settlements would be under construction, selling a similar product in similar locations. This may see a reduction in the build-out rate as a result.
House building capacity	This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 4.9 years is anticipated at plan adoption with a 10% buffer. This is marginal and should be kept under review. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met alternative short-term allocations could be made (such as small sites in villages), or potentially an argument could be advanced for a stepped annual housing requirement, but it is not considered that a convincing case could be made in light of the PPG requirement for the increase to be "significant" and to "not seek to unnecessarily delay meeting identified development needs".
Meeting the small sites requirement	No new small sites are proposed in this option. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not anticipated that this option will enable the Councils to meet NPPF requirements.
Housing Delivery Test	As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.

Option 4c: Dispersal – new settlements (Maximum)

Summary of option

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

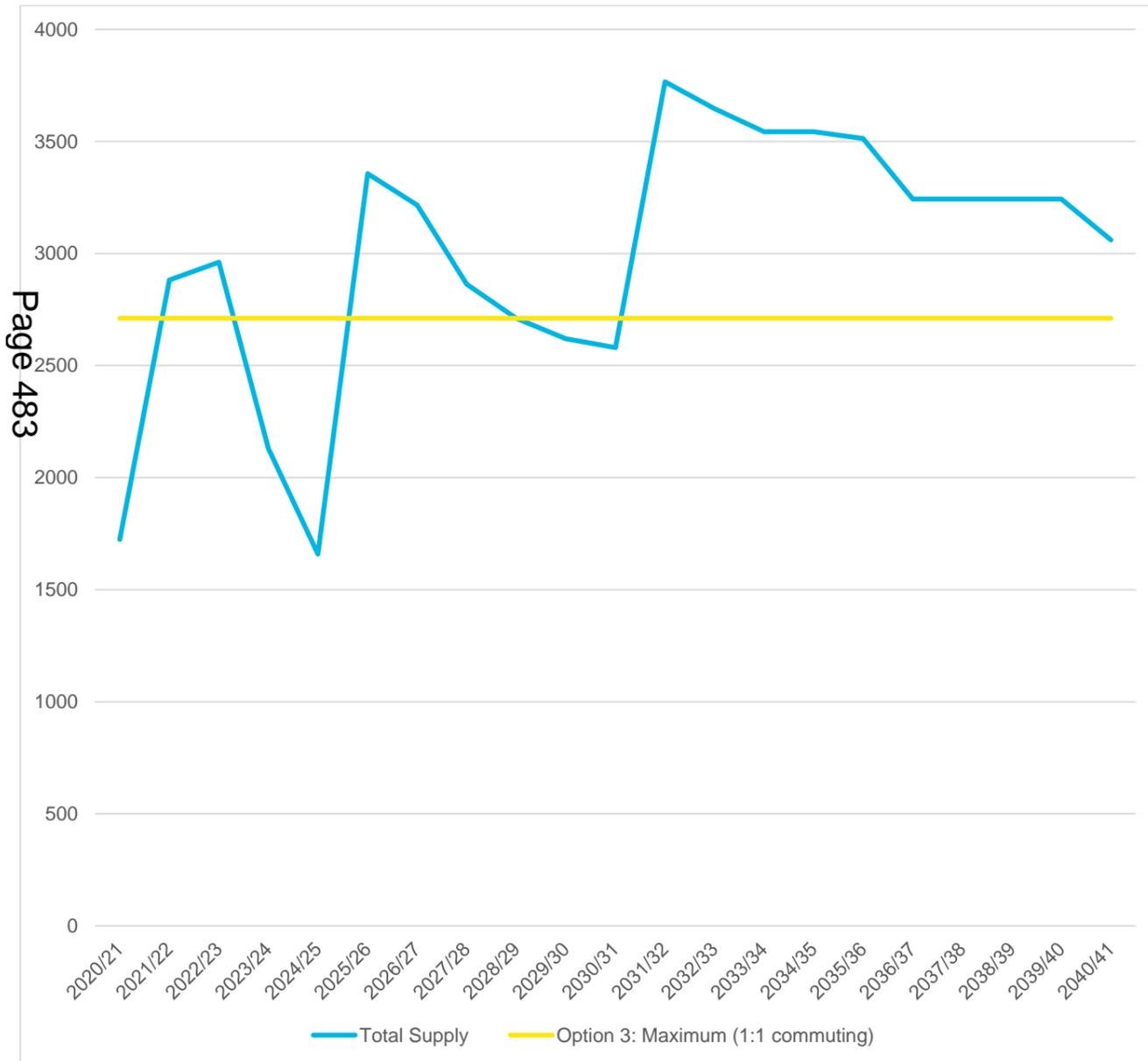
Maximum:

- All existing committed strategic sites assume double historic delivery rates from 2025/26 onwards (Northstowe 500dpa; Waterbeach 500dpa; Bourn Airfield 300dpa and Cambourne 300dpa).
- Three new settlements on public transport corridors (delivery by 2041, using higher delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures), including:
 - Two larger new settlements of 9,000 dwellings
 - One smaller new settlement of 4,500 dwellings
- One smaller new settlement of 4,500 homes on the road network (delivery by 2041, using higher delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures).

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	319	9323
Waterbeach New Town	0	150	250	250	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	8900
Bourn Airfield	0	0	35	75	120	300	300	300	300	300	300	300	300	300	300	270	0	0	0	0	0	0	3500
Cambourne West	0	80	160	160	160	300	300	300	300	300	300	230	0	0	0	0	0	0	0	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	1315	1315	1315	1315	1315	1315	1315	1315	1315	1315	1315	13150
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	500	500	500	500	500	500	500	500	500	500	4500
Villages total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Completions and supply)	1724	2882	2961	2130	1659	3356	3216	2863	2711	2620	2580	3816	3646	3543	3543	3513	3243	3243	3243	3243	3062	62796	
Option 3: Maximum (1:1 commuting)	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	56931

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
Comparison against Option 3: Maximum (1:1 commuting)	-987	171	250	-581	-1052	645	505	152	0	-91	-131	1105	935	832	832	802	532	532	532	532	351	5865
Cumulative delivery	1724	4606	7567	9697	11356	14712	17928	20791	23502	26122	28702	32518	36164	39706	43249	46762	50005	53248	56491	59734	62796	-
Cumulative requirement Option 3: Maximum (1:1 commuting)	2711	5422	8133	10844	13555	16266	18977	21688	24399	27110	29821	32532	35243	37954	40665	43376	46087	48798	51509	54220	56931	-
Rolling HDT	-	-	145%	152%	129%	137%	157%	180%	168%	157%	151%	172%	192%	210%	205%	203%	197%	191%	186%	186%	183%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component Step	Calculation	Number
(a) Requirement from start of plan period (1st April 2020 - 31st March 2025)	2711dpa x 5	13555.0
(b) Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c) Shortfall/Surplus*	(a) - (b)	2199.0
(d) 5 year requirement + Shortfall/Surplus	(2711 x 5) + (c)	15754.0
(e) Add 10% buffer	(d) x 1.10	17329.4
(f) Annual target	(e) / 5 years	3465.9
(g) Supply within first 5 years		14766.0
(h) Land supply	(g) / (f)	4.26
(i) Deficit / surplus	(g) - (e)	-2563

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and

pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Additional supply in the mid-latter part of the plan period will enable delivery against the overall maximum housing requirement. The plan period starts with a shortfall against the significantly increased annual housing requirement figure, which results in the need for the shortfall to be met within the first five years under the Sedgefield method, increasing the five-year housing land supply requirement beyond that which can be delivered under this option, resulting in the need for a stepped annual housing requirement and/or the Liverpool method to meeting the shortfall over the plan period.</p> <p>The four new settlement sites are anticipated to deliver in the longer-term which leaves a marginal shortfall against the annual housing requirement in the middle of the plan period (2028/29-2030/31), which may mean additional smaller site allocations with short lead-in times are needed. The trajectory shows a peak in the middle of the plan period in 2031/32. This in turn is based on an assumption by the Councils that delivery rates can be doubled on existing strategic sites that are already consented or allocated and working their way through the development management process. A build-out rate of 500dpa is assumed on existing sites from 2025/26 (plan adoption) onwards. This is considered unrealistic for sites that are already allocated and working their way through the system.</p> <p>Average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models. Secondary sources and emerging primary research suggests that a traditional approach would be unlikely to exceed 300 dpa.</p>
Stepped housing requirement	<p>The maximum scenario would be a step-change in housing delivery, 88% higher than historic completions in 2002/03-2018/19. Given the projected under-delivery in the period 2020/21 to plan adoption (1st April 2025) the shortfall should be met in the first 5 years under the Sedgefield method under the PPG (unless the Liverpool method can be justified). Due to the fact that, under the Councils' assumptions, this option cannot deliver a five-year housing land supply at plan adoption under the Sedgefield method, either the Liverpool method or a stepped annual housing requirement is necessary. If it transpires that delivery rates of 500dpa at existing committed strategic sites are not deliverable, then a stepped annual housing requirement would be necessary; although this would further increase an already challenging housing requirement later in the plan period.</p>
Market absorption including competition from similar sites	<p>New settlement sites towards the end of the plan period would deliver a similar product to the existing new settlements that are committed, which may not result in delivery of a wide enough range of the different types of housing in the different locations that the market wants. This would result in increased competition between committed and proposed new settlements, potentially reducing build-out rates as the market struggles to absorb a fairly homogenous product. The four new settlements would compete with the committed new settlements from 2030 onwards when a total of seven new settlements would be under construction, selling a similar product in similar locations. This may see a reduction in the build-out rate as a result.</p>
House building capacity	<p>This level of supply is significantly (88%) above historic trends, which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 4.26 years is anticipated at plan adoption with a 10% buffer. As discussed above the assumptions for strategic sites under the maximum scenario are considered unrealistic and undeliverable, therefore it is likely that the five-year housing land supply would be lower in reality at plan adoption if evidence confirms that only lower rates are deliverable. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met alternative short-term allocations could be made (such as small sites in villages), or an argument advanced for a stepped annual housing requirement.</p>
Meeting the small sites requirement	<p>No new small sites are proposed in this option. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not anticipated that this option will enable the Councils to meet NPPF requirements.</p>
Housing Delivery Test	<p>As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.</p>

Option 5a: Dispersal – villages (Minimum)

Summary of option

This approach would spread new homes and jobs out to the villages.

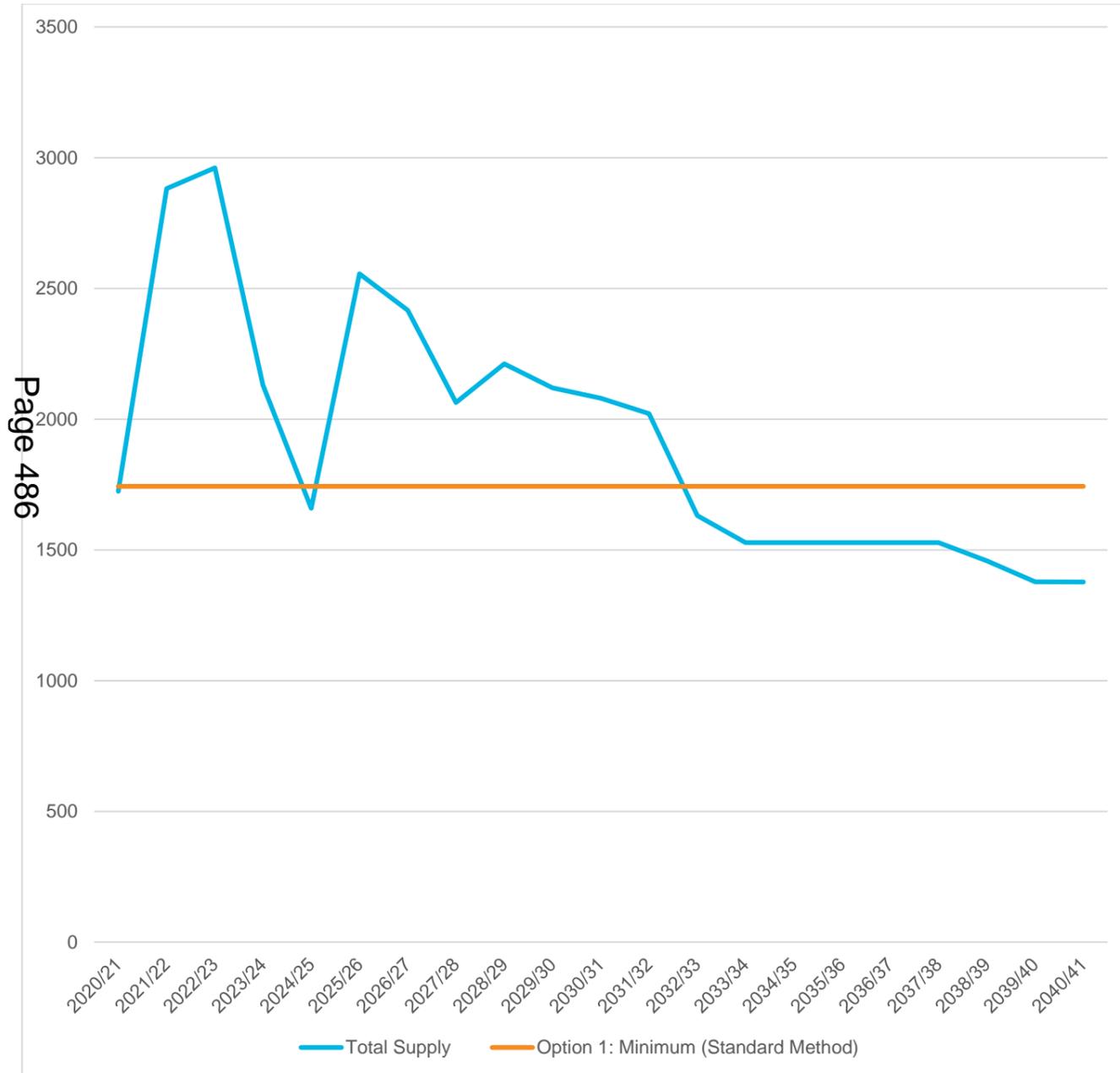
Minimum:

- 40% of balance to find at Rural Centres
- 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre).
- 17% of balance to find at Group villages
- 3% of balance to find at Infill villages

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	27	14419
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80				2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	3900
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	2211	2120	2080	2021	1631	1528	1528	1528	1528	1528	1458	1378	1378	1378	40307
Option 1: Minimum (Standard Method)	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	36603
Comparison against Option 1: Minimum (Standard Method)	-19	1139	1218	387	-84	813	673	320	468	377	337	278	-112	-215	-215	-215	-215	-215	-285	-365	-365	-365	3704
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20602	22722	24802	26823	28454	29981	31509	33037	34565	36093	37551	38929	40307	-	

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Cumulative requirement Option 1: Minimum (Standard Method)	1743	3486	5229	6972	8715	10458	12201	13944	15687	17430	19173	20916	22659	24402	26145	27888	29631	31374	33117	34860	36603	-
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	128%	122%	123%	119%	110%	99%	90%	88%	88%	88%	86%	83%	81%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1743dpa x 5	8715.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-2641.0
(d)	5 year requirement + Shortfall/Surplus	(1743 x 5) + (c)	8715.0
(e)	Add 10% buffer	(d) x 1.10	9586.5
(f)	Annual target	(e) / 5 years	1917.3
(g)	Supply within first 5 years		11366.0
(h)	Land supply	(g) / (f)	5.93
(i)	Deficit / surplus	(g) - (e)	1780

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Minimum housing requirement is largely met by existing commitments and the windfall allowance. Sites in the villages are likely to have shorter lead-in times post Local Plan adoption and therefore are likely to result in additional supply in the middle of the plan period. Because of this medium-term delivery, on top of existing commitments, this option is not expected to be able to meet the annual housing requirement after 2032/33 and would result in the loss of a five-year housing land supply after this point. If decisions over allocations were deferred to Neighbourhood Plans this would extend the lead-in times and deliver sites later in the plan period, but this relies on local communities bringing forward Neighbourhood Plans with sufficient housing allocations at the appropriate time (unless a suitable safeguard mechanism is put in place to allow Councils to make the allocations in a DPD should Neighbourhood Plans not do so). However, additional allocations would be required to meet the annual housing requirement post 2032/33 if over-delivery earlier in the plan period cannot be “banked”.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	Dispersal of new development to the villages would complement the significant amount of committed development planned at new settlements and would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would maximise the market absorption rate.
House building capacity	Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.93 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. This option is considered likely to enable the Councils to meet the NPPF small sites requirement.
Housing Delivery Test	Housing Delivery Test is met until 3032/33 onwards when an Action Plan would need to be prepared. Delivery is anticipated to drop below 85% after 2039/40, which would trigger the use of a 20% buffer on the five-year housing land supply at that stage.

Option 5b: Dispersal – villages (Medium)

Summary of option

This approach would spread new homes and jobs out to the villages.

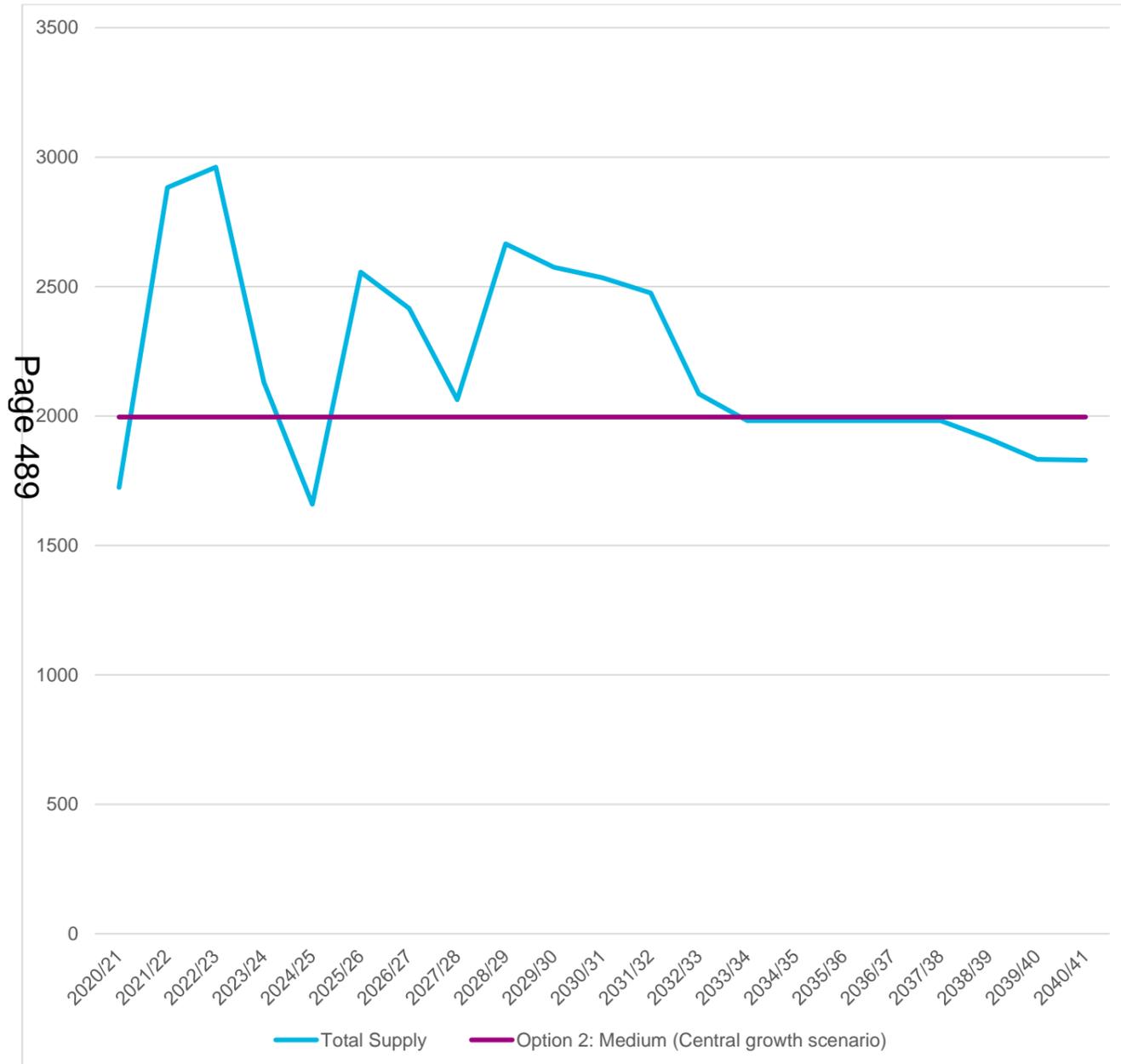
Medium:

- 40% of balance to find at Rural Centres
- 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre).
- 17% of balance to find at Group villages
- 3% of balance to find at Infill villages

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	27	14419
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Pourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambridge West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	754	754	754	754	754	754	754	754	754	754	754	754	752	9800	
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	2665	2574	2534	2475	2085	1982	1982	1982	1982	1982	1912	1832	1832	1832	46209
Option 2: Medium (Central growth scenario)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	41916
Comparison against Option 2: Medium (Central growth scenario)	-272	886	965	134	-337	560	420	67	669	578	538	479	89	-14	-14	-14	-14	-14	-84	-164	-164	-164	4293

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	21056	23630	26164	28639	30724	32705	34687	36669	38651	40633	42545	44377	46209	-
Cumulative requirement Option 2: Medium (Central growth scenario)	1996	3992	5988	7984	9980	11976	13972	15968	17964	19960	21956	23952	25948	27944	29940	31936	33932	35928	37924	39920	41916	-
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	137%	140%	149%	145%	136%	125%	116%	114%	114%	114%	112%	110%	107%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1996dpa x 5	9980.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-1376.0
(d)	5 year requirement + Shortfall/Surplus	(1996 x 5) + (c)	9980.0
(e)	Add 10% buffer	(d) x 1.10	10978.0
(f)	Annual target	(e) / 5 years	2195.6
(g)	Supply within first 5 years		12274.0
(h)	Land supply	(g) / (f)	5.59
(i)	Deficit / surplus	(g) - (e)	1296

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Additional supply in the mid-latter part of the plan period will enable delivery against the overall medium housing requirement. Sites in the villages are likely to have shorter lead-in times post Local Plan adoption and therefore are likely to result in additional supply in the middle of the plan period. Because of this medium-term delivery, on top of existing commitments, this option is not expected to be able to meet the annual housing requirement after 2033/34 and would result in the loss of a five-year housing land supply after this point. If decisions over allocations were deferred to Neighbourhood Plans this would extend the lead-in times and deliver sites later in the plan period, but this relies on local communities bringing forward Neighbourhood Plans with sufficient housing allocations at the appropriate time (unless a suitable safeguard mechanism is put in place to allow Councils to make the allocations in a DPD should Neighbourhood Plans not do so). However, additional allocations would be required to meet the annual housing requirement post 2032/33 if over-delivery earlier in the plan period cannot be “banked”. Delivery of an urban extension or new settlement could provide this additional longer-term delivery.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	Dispersal of new development to the villages would complement the significant amount of committed development planned at new settlements and would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would increase the market absorption rate. However, there remains a question mark at this stage of the study over the full extent of the demand for new housing in the villages, and whether or not this option would over-deliver in the villages (through new allocations) and new settlements (through commitments) and not provide enough housing in and around Cambridge. If there is an oversupply in the villages then the market will not be able to absorb the new housing in accordance with the trajectory.
House building capacity	This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.59 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. This option is considered likely to enable the Councils to meet the NPPF small sites requirement.
Housing Delivery Test	As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.

Option 5c: Dispersal – villages (Maximum)

Summary of option

This approach would spread new homes and jobs out to the villages.

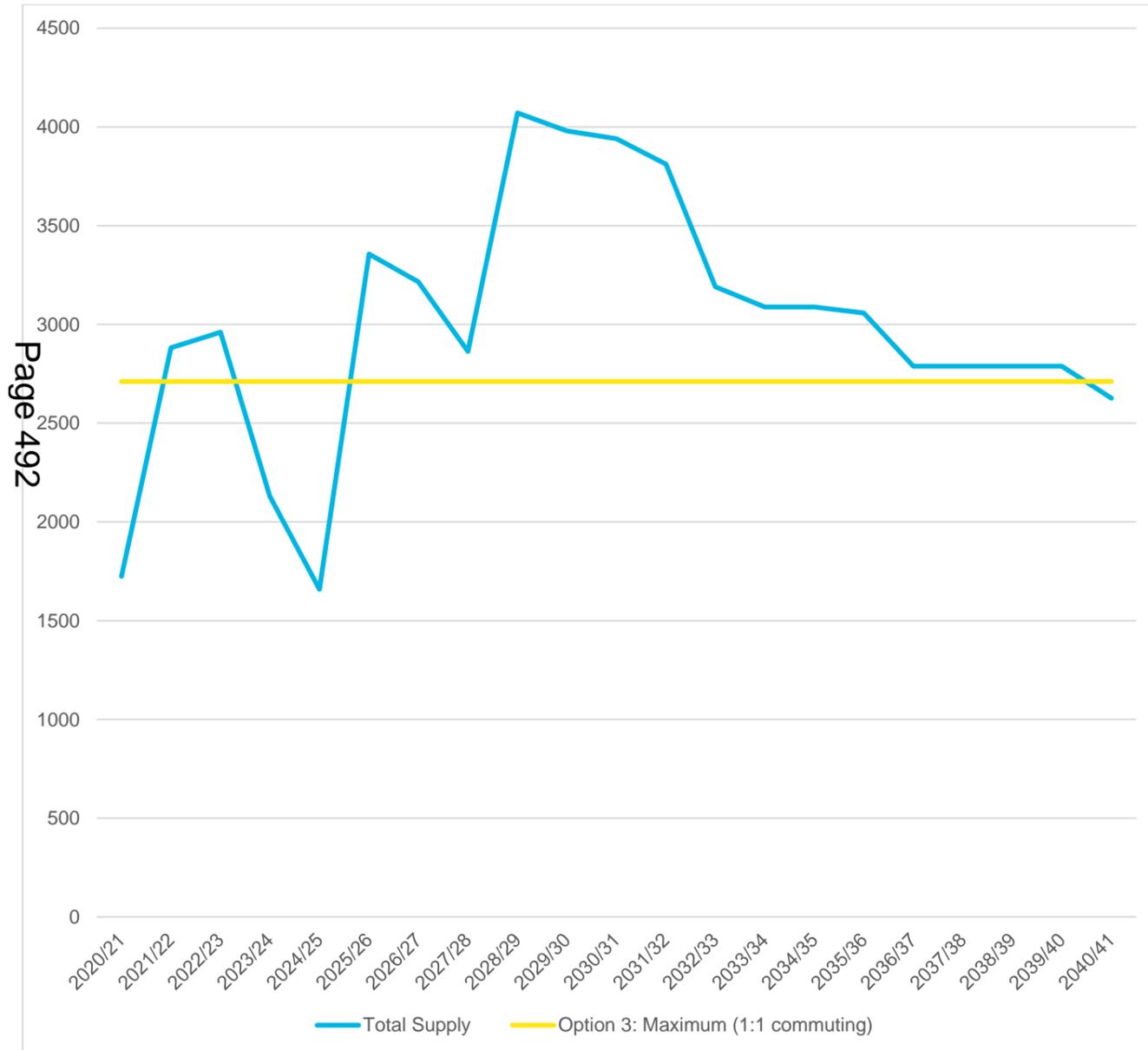
Maximum:

- All existing committed strategic sites assume double historic delivery rates from 2025/26 onwards (Northstowe 500dpa; Waterbeach 500dpa; Bourn Airfield 300dpa and Cambourne 300dpa).
- 40% of balance to find at Rural Centres
- 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre).
- 17% of balance to find at Group villages
- 3% of balance to find at Infill villages

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	319	9323
Waterbeach New Town	0	150	250	250	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	8900
Bourn Airfield	0	0	35	75	120	300	300	300	300	300	300	300	300	300	300	270	0	0	0	0	0	0	3500
Cambourne West	0	80	160	160	160	300	300	300	300	300	300	230	0	0	0	0	0	0	0	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	1360	1360	1360	1360	1360	1360	1360	1360	1360	1360	1360	1360	1380	17700	
Total (Completions and supply)	1724	2882	2961	2130	1659	3356	3216	2863	4071	3980	3940	3811	3191	3088	3088	3058	2788	2788	2788	2788	2607	62776	
Option 3: Maximum (1:1 commuting)	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	56931
Comparison against Option 3: Maximum (1:1 commuting)	-987	171	250	-581	-1052	645	505	152	1360	1269	1229	1100	480	377	377	347	77	77	77	77	-104	5845	

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Cumulative delivery	1724	4606	7567	9697	11356	14712	17928	20791	24862	28842	32782	36593	39784	42871	45959	49017	51805	54593	57381	60169	62776	-
Cumulative requirement Option 3: Maximum (1:1 commuting)	2711	5422	8133	10844	13555	16266	18977	21688	24399	27110	29821	32532	35243	37954	40665	43376	46087	48798	51509	54220	56931	-
Rolling HDT	-	-	145%	152%	129%	137%	157%	180%	194%	209%	229%	224%	209%	193%	179%	177%	171%	165%	160%	160%	156%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	2711dpa x 5	13555.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	2199.0
(d)	5 year requirement + Shortfall/Surplus	(2711 x 5) + (c)	15754.0
(e)	Add 10% buffer	(d) x 1.10	17329.4
(f)	Annual target	(e) / 5 years	3465.9
(g)	Supply within first 5 years		17486.0
(h)	Land supply	(g) / (f)	5.05
(i)	Deficit / surplus	(g) - (e)	157

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Additional supply in the mid-latter part of the plan period will enable delivery against the overall maximum housing requirement. The plan period starts with a shortfall against the significantly increased annual housing requirement figure, which results in the need for the shortfall to be met within the first five years under the Sedgefield method, increasing the five-year housing land supply requirement.</p> <p>Sites in the villages are likely to have shorter lead-in times post Local Plan adoption and therefore are likely to result in a peak of supply in the middle of the plan period. If decisions over allocations were deferred to Neighbourhood Plans this would extend the lead-in times and deliver sites later in the plan period, but this relies on local communities bringing forward Neighbourhood Plans with sufficient housing allocations at the appropriate time (unless a suitable safeguard mechanism is put in place to allow Councils to make the allocations in a DPD should Neighbourhood Plans not do so). However, additional allocations would be required to meet the annual housing requirement post 2032/33 if over-delivery earlier in the plan period cannot be “banked”. The trajectory shows a peak in the middle of the plan period, in the first 5 years after plan adoption. This in turn is based on an assumption by the Councils that delivery rates can be doubled on existing strategic sites that are already consented or allocated and working their way through the development management process. A build-out rate of 500dpa is assumed on existing sites from 2025/26 (plan adoption) onwards. This is considered unrealistic for sites that are already allocated and working their way through the system.</p> <p>Average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models. Secondary sources and emerging primary research suggests that a traditional approach would be unlikely to exceed 300 dpa.</p>
Stepped housing requirement	<p>The maximum scenario would be a step-change in housing delivery, 88% higher than historic completions in 2002/03-2018/19. Given the projected under-delivery in the period 2020/21 to plan adoption (1st April 2025) the shortfall should be met in the first 5 years under the Sedgefield method under the PPG (unless the Liverpool method can be justified). Due to the fact that, under the Councils’ assumptions, this option can deliver a five-year housing land supply at plan adoption under the Sedgefield method, a stepped annual housing requirement is not necessary. If it transpires that delivery rates of 500dpa at existing committed strategic sites are not deliverable, then a stepped housing requirement would be necessary; although this would further increase an already challenging housing requirement later in the plan period.</p>
Market absorption including competition from similar sites	<p>Dispersal of new development to the villages would complement the significant amount of committed development planned at new settlements and would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would increase the market absorption rate. However, there remains a question mark at this stage of the study over the full extent of the demand for new housing in the villages, and whether or not this option would over-deliver in the villages (through new allocations) and new settlements (through commitments) and not provide enough housing in and around Cambridge. If there is an oversupply in the villages then the market will not be able to absorb the new housing in accordance with the trajectory.</p>
House building capacity	<p>This level of supply is significantly (88%) above historic trends, which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 5.05 years is anticipated at plan adoption with a 10% buffer. This is marginal and should be kept under review. This calculation has been undertaken using the Councils’ assumptions for lead-in times and build-out rates. As discussed above the assumptions for strategic sites under the maximum scenario are considered unrealistic and undeliverable, therefore it is unlikely that a five-year housing land supply would actually be able to be demonstrated at plan adoption if evidence confirms that only lower rates are deliverable. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council’s trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met additional short-term allocations could be made (such as sites in Cambridge urban area), or an argument advanced for a stepped annual housing requirement.</p>
Meeting the small sites requirement	<p>It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. This option is considered likely to enable the Councils to meet the NPPF small sites requirement.</p>
Housing Delivery Test	<p>As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.</p>

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Option 6a: Public transport corridors (Minimum)

Summary of option

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

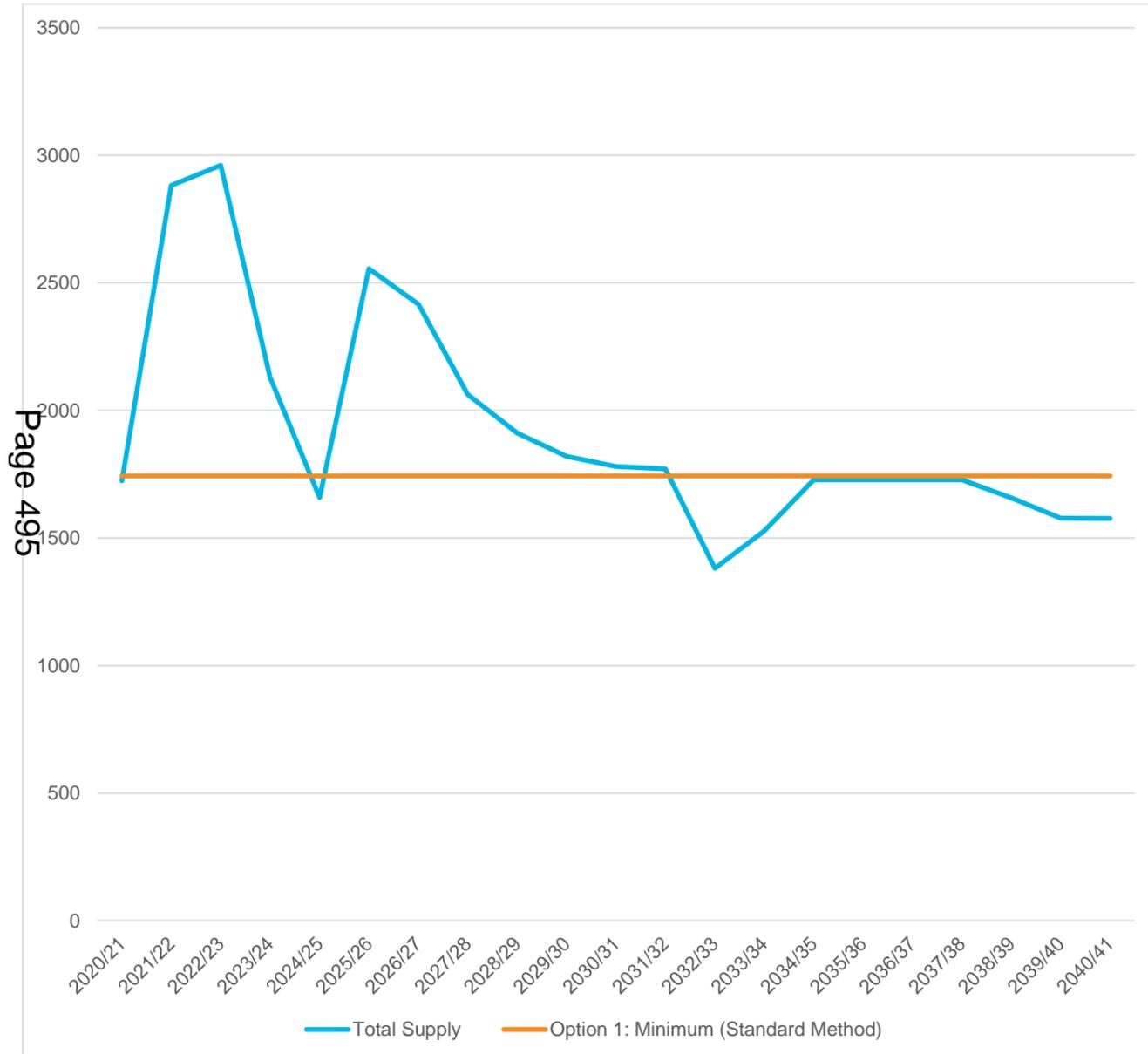
Minimum:

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- One smaller new settlement of 4,500 homes on a public transport corridor (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).
- Minimal balance to find spread across eighteen villages sited along existing or proposed public transport corridors

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	27	14419
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambridge West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1900
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	50	50	0	0	0	0	0	0	0	0	0	100
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	1911	1820	1780	1771	1381	1528	1728	1728	1728	1728	1658	1578	1578	1578	40307
Option 1: Minimum (Standard Method)	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	36603
Comparison against Option 1: Minimum (Standard Method)	-19	1139	1218	387	-84	813	673	320	168	77	37	28	-362	-215	-15	-15	-15	-15	-85	-165	-165	-165	3704
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20302	22122	23902	25673	27054	28581	30309	32037	33765	35493	37151	38729	40307	-	-

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Cumulative requirement Option 1: Minimum (Standard Method)	1743	3486	5229	6972	8715	10458	12201	13944	15687	17430	19173	20916	22659	24402	26145	27888	29631	31374	33117	34860	36603	-
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	122%	111%	105%	103%	94%	89%	89%	95%	99%	99%	98%	95%	92%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1743dpa x 5	8715.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-2641.0
(d)	5 year requirement + Shortfall/Surplus	(1743 x 5) + (c)	8715.0
(e)	Add 10% buffer	(d) x 1.10	9586.5
(f)	Annual target	(e) / 5 years	1917.3
(g)	Supply within first 5 years		10766.0
(h)	Land supply	(g) / (f)	5.62
(i)	Deficit / surplus	(g) - (e)	1180

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Minimum housing requirement is largely met by existing commitments and the windfall allowance. Additional supply later in the plan period would act as a buffer to ensure delivery against the annual housing requirement. Some under-delivery against the annual housing requirement is anticipated later in the plan period in 2032/33-2033/34 and 2038/39-2040/41 which would result in the loss of a five-year housing land supply without additional allocations or changes to the phasing of the delivery of sites.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	An urban extension and a new settlement towards the end of the plan period would deliver additional housing that is fairly similar to the existing commitments, which despite not resulting in the delivery of a wide range of the different types of housing in the different locations that the market wants, is not likely to result in a significant amount of competition between committed and proposed new settlements as the scale of the additional annual new settlement development is not significant. Additionally, the new settlement would be well-located to provide good accessibility to Cambridge, increasing demand. More variety in housing size, location and type would mitigate against the risk of reducing market absorption from new settlements.
House building capacity	Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.62 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	Only the new sites in villages would yield additional small sites. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, it is not anticipated that this option will enable the Councils to meet NPPF requirements.
Housing Delivery Test	Housing Delivery Test is met until 3032/33 onwards when an Action Plan would need to be prepared. Delivery is not anticipated to drop below 85%, avoiding triggering the use of a 20% buffer on the five-year housing land supply.

Option 6b: Public transport corridors (Medium)

Summary of option

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

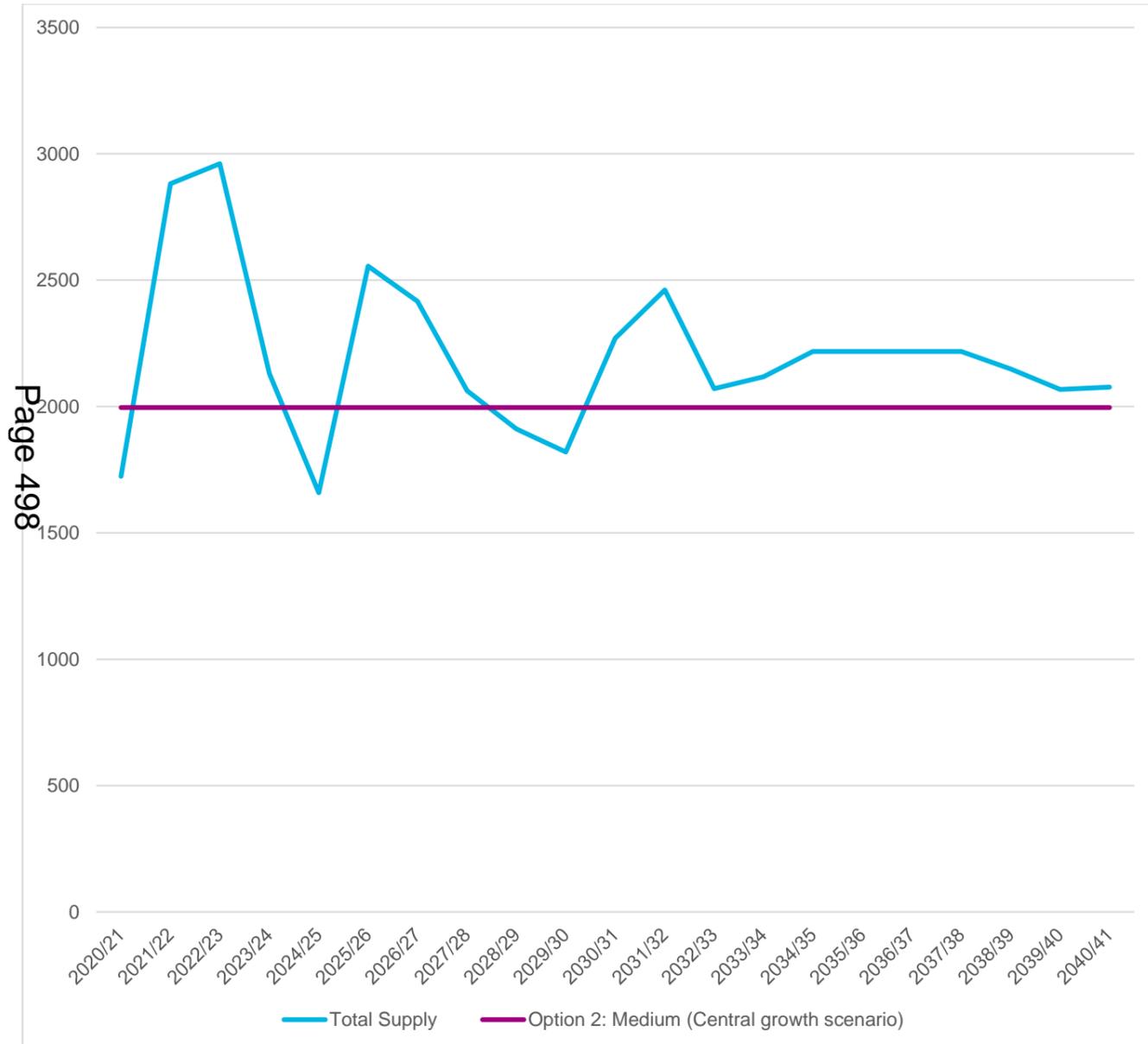
Medium:

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- One larger new settlement of 9,000 homes on a public transport corridor (delivery by 2041, using historic delivery rates)
- Balance to find spread across eighteen villages sited along existing or proposed public transport corridors

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Gambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	2590	
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	250	250	250	250	250	250	250	250	250	250	250	2500
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	490	490	490	490	490	490	490	490	490	490	490	500	5400
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	1911	1820	2270	2461	2071	2118	2218	2218	2218	2218	2148	2068	2068	2068	46197
Option 2: Medium (Central growth scenario)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	41916
Comparison against Option 2: Medium (Central growth scenario)	-272	886	965	134	-337	560	420	67	-85	-176	274	465	75	122	222	222	222	222	152	72	72	4281	
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20302	22122	24392	26853	28924	31041	33259	35477	37695	39913	42061	44129	46197	-	

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Cumulative requirement Option 2: Medium (Central growth scenario)	1996	3992	5988	7984	9980	11976	13972	15968	17964	19960	21956	23952	25948	27944	29940	31936	33932	35928	37924	39920	41916	-
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	122%	111%	115%	125%	130%	127%	123%	125%	127%	127%	126%	123%	120%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1996dpa x 5	9980.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-1376.0
(d)	5 year requirement + Shortfall/Surplus	(1996 x 5) + (c)	9980.0
(e)	Add 10% buffer	(d) x 1.10	10978.0
(f)	Annual target	(e) / 5 years	2195.6
(g)	Supply within first 5 years		10766.0
(h)	Land supply	(g) / (f)	4.90
(i)	Deficit / surplus	(g) - (e)	-212

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Additional supply in the mid-latter part of the plan period will enable delivery against the overall medium housing requirement. North East Cambridge, Cambridge Airport and new settlement sites are anticipated to deliver in the longer-term which leaves a marginal shortfall against the annual housing requirement in the middle of the plan period in 2028/29 – 2029/30. Alternative small-scale site allocations with short lead-in times may be able to address this, for example in Cambridge Urban Area. Additionally, the allocations in the villages may be delivered over a longer time period than that assumed in the trajectory, with more delivering in the first 5 years, which could smooth out the trajectory.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	An urban extension and a new settlement towards the end of the plan period would deliver additional housing that is fairly similar to the existing commitments, which despite not resulting in the delivery of a wide range of the different types of housing in the different locations that the market wants, is not likely to result in a significant amount of competition between committed and proposed new settlements as the scale of the additional annual new settlement development is not significant. Providing the balance of the requirement in the villages will provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would increase the market absorption rate.
House building capacity	This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 4.90 years is anticipated at plan adoption with a 10% buffer. This is marginal and should be kept under review. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met alternative short-term allocations could be made (such as small sites in Cambridge Urban Area), or potentially an argument could be advanced for a stepped annual housing requirement, but it is not considered that a convincing case could be made in light of the PPG requirement for the increase to be "significant" and to "not seek to unnecessarily delay meeting identified development needs".
Meeting the small sites requirement	The 5,390 dwellings at villages could yield a number of small sites to help meet the NPPF Paragraph 68 small sites requirement. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, the 5,390 dwellings in the villages will need to be used to make small site allocations to enable the Councils to meet NPPF requirements.
Housing Delivery Test	As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.

Option 6c: Public transport corridors (Maximum)

Summary of option

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

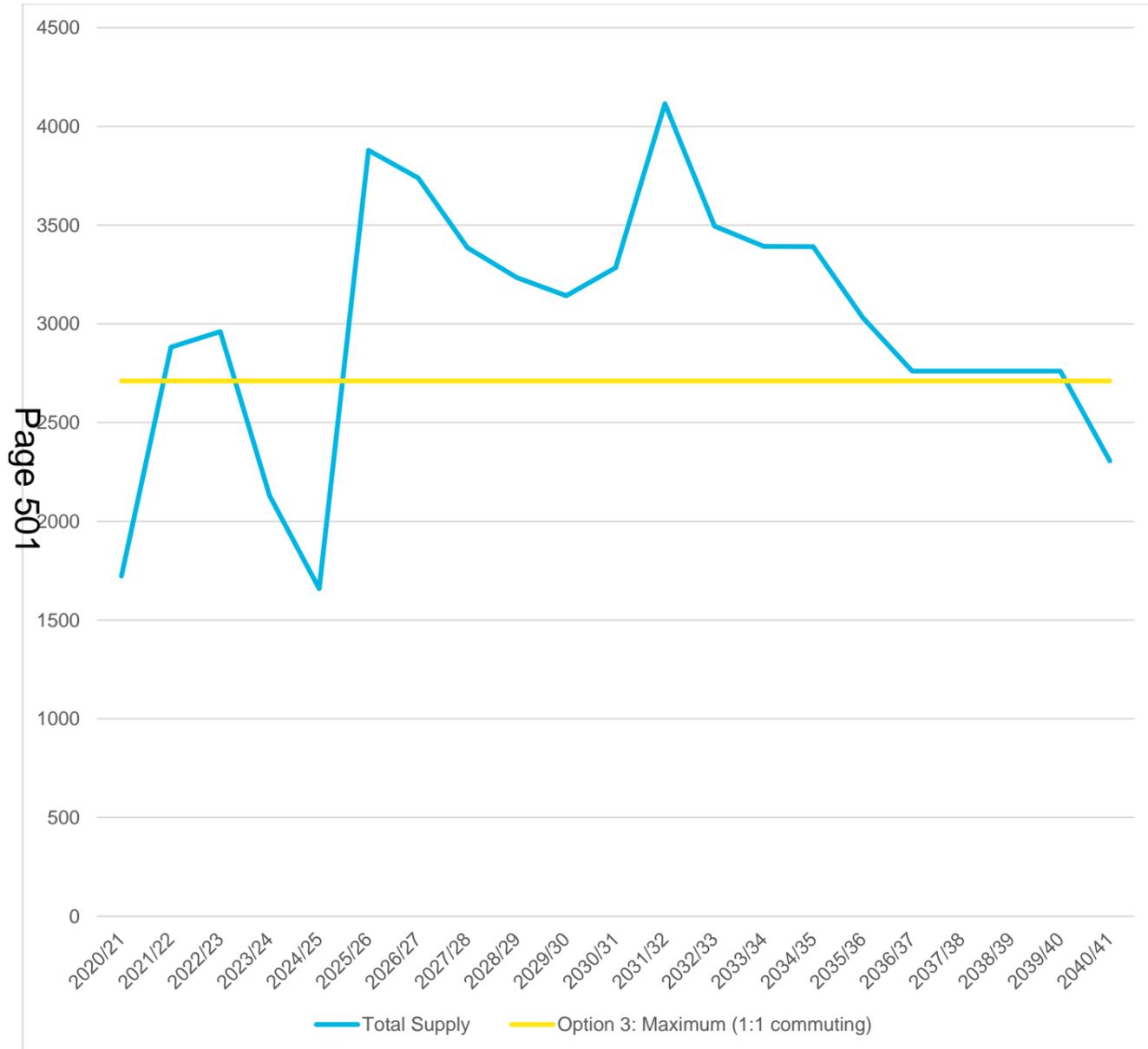
Maximum:

- All existing committed strategic sites assume double historic delivery rates from 2025/26 onwards (Northstowe 500dpa; Waterbeach 500dpa; Bourn Airfield 300dpa and Cambourne 300dpa).
- North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))
- One larger new settlement of 9,000 homes on a public transport corridor (delivery by 2041, using higher delivery rates)
- Balance to find spread across eighteen villages sited along existing or proposed public transport corridors

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	319	9323
Waterbeach New Town	0	150	250	250	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	8900
Bourn Airfield	0	0	35	75	120	300	300	300	300	300	300	300	300	300	300	270	0	0	0	0	0	0	3500
Cambourne West	0	80	160	160	160	300	300	300	300	300	300	230	0	0	0	0	0	0	0	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	523	523	523	523	523	704	704	704	704	703	374	373	373	373	373	373	0	8,000
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	500	500	500	500	500	500	500	500	500	500	600	5100
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	0	460	460	460	460	460	460	460	460	460	460	460	4600
Total (Completions and supply)	1724	2882	2961	2130	1659	3879	3739	3386	3234	3143	3284	4115	3495	3392	3391	3032	2761	2761	2761	2761	2277	62766	
Option 3: Maximum (1:1 commuting)	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	56931
Comparison against Option 3: Maximum (1:1 commuting)	-987	171	250	-581	-1052	1168	1028	675	523	432	573	1404	784	681	680	321	50	50	50	50	-434	5835	
Cumulative delivery	1724	4606	7567	9697	11356	15235	18974	22360	25594	28737	32021	36136	39631	43022	46413	49445	52206	54967	57728	60489	62766	-	

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
Cumulative requirement Option 3: Maximum (1:1 commuting)	2711	5422	8133	10844	13555	16266	18977	21688	24399	27110	29821	32532	35243	37954	40665	43376	46087	48798	51509	54220	56931	-
Rolling HDT	-	-	145%	152%	129%	147%	177%	210%	198%	187%	185%	202%	208%	210%	197%	188%	176%	164%	158%	158%	149%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	2711dpa x 5	13555.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	2199.0
(d)	5 year requirement + Shortfall/Surplus	(2711 x 5) + (c)	15754.0
(e)	Add 10% buffer	(d) x 1.10	17329.4
(f)	Annual target	(e) / 5 years	3465.9
(g)	Supply within first 5 years		17381.0
(h)	Land supply	(g) / (f)	5.01
(i)	Deficit / surplus	(g) - (e)	52

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Additional supply in the mid-latter part of the plan period will enable delivery against the overall maximum housing requirement. North East Cambridge and new settlement sites are anticipated to deliver in the longer-term, whilst the village allocations would be expected to deliver in the middle part of the plan period. The plan period starts with a shortfall against the significantly increased annual housing requirement figure, which results in the need for the shortfall to be met within the first five years under the Sedgefield method, increasing the five-year housing land supply requirement.</p> <p>It is noted that this option includes the draft North East Cambridge AAP housing trajectory for the site, and if delivery is delayed against this trajectory then the five-year housing land supply position will be worsened.</p> <p>The trajectory shows a peak in the middle of the plan period, in the first 5 years after plan adoption. This in turn is based on an assumption by the Councils that delivery rates can be doubled on existing strategic sites that are already consented or allocated and working their way through the development management process. A build-out rate of 500dpa is assumed on existing sites from 2025/26 (plan adoption) onwards. This is considered unrealistic for sites that are already allocated and working their way through the system.</p> <p>Average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models. Secondary sources and emerging primary research suggests that a traditional approach would be unlikely to exceed 300 dpa.</p>
Stepped housing requirement	<p>The maximum scenario would be a step-change in housing delivery, 88% higher than historic completions in 2002/03-2018/19. Given the projected under-delivery in the period 2020/21 to plan adoption (1st April 2025) the shortfall should be met in the first 5 years under the Sedgefield method under the PPG (unless the Liverpool method can be justified). Due to the fact that, under the Councils' assumptions, this option can deliver a five-year housing land supply at plan adoption under the Sedgefield method, a stepped annual housing requirement is not necessary. If it transpires that delivery rates of 500dpa at existing committed strategic sites are not deliverable, then a stepped annual housing requirement would be necessary; although this would further increase an already challenging housing annual housing requirement later in the plan period.</p>
Market absorption including competition from similar sites	<p>An urban extension and a new settlement towards the end of the plan period would deliver additional housing that is fairly similar to the existing commitments, which despite not resulting in the delivery of a wide range of the different types of housing in the different locations that the market wants, is not likely to result in a significant amount of competition between committed and proposed new settlements as the scale of the additional annual new settlement development is not significant. Providing the balance of the requirement in the villages will provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would increase the market absorption rate. However, it is considered unlikely that there is sufficient demand in the market to sustain delivery rates double the historic average for four new settlement sites all being built concurrently.</p>
House building capacity	<p>This level of supply is significantly (88%) above historic trends, which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 5.01 years is anticipated at plan adoption with a 10% buffer. This is marginal and should be kept under review. This calculation has been undertaken using the Councils' assumptions for lead-in times and build-out rates. As discussed above the assumptions for strategic allocations under the maximum scenario are considered unrealistic and undeliverable, therefore it is unlikely that a five-year housing land supply would actually be able to be demonstrated at plan adoption if evidence confirms that only lower rates are deliverable. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met alternative short-term allocations could be made (such as small sites in villages or urban Cambridge), or an argument advanced for a stepped annual housing requirement.</p>
Meeting the small sites requirement	<p>The 4,600 dwellings at villages could yield a number of small sites to help meet the NPPF Paragraph 68 small sites requirement. Given the additional need for small sites beyond those committed and expected to come forward through the windfall allowance, the 4,600 dwellings in the villages will need to be used to make small site allocations to enable the Councils to meet NPPF requirements.</p>
Housing Delivery Test	<p>As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.</p>

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Option 7a: Supporting a high-tech corridor by integrating homes and jobs (Minimum)

Summary of option

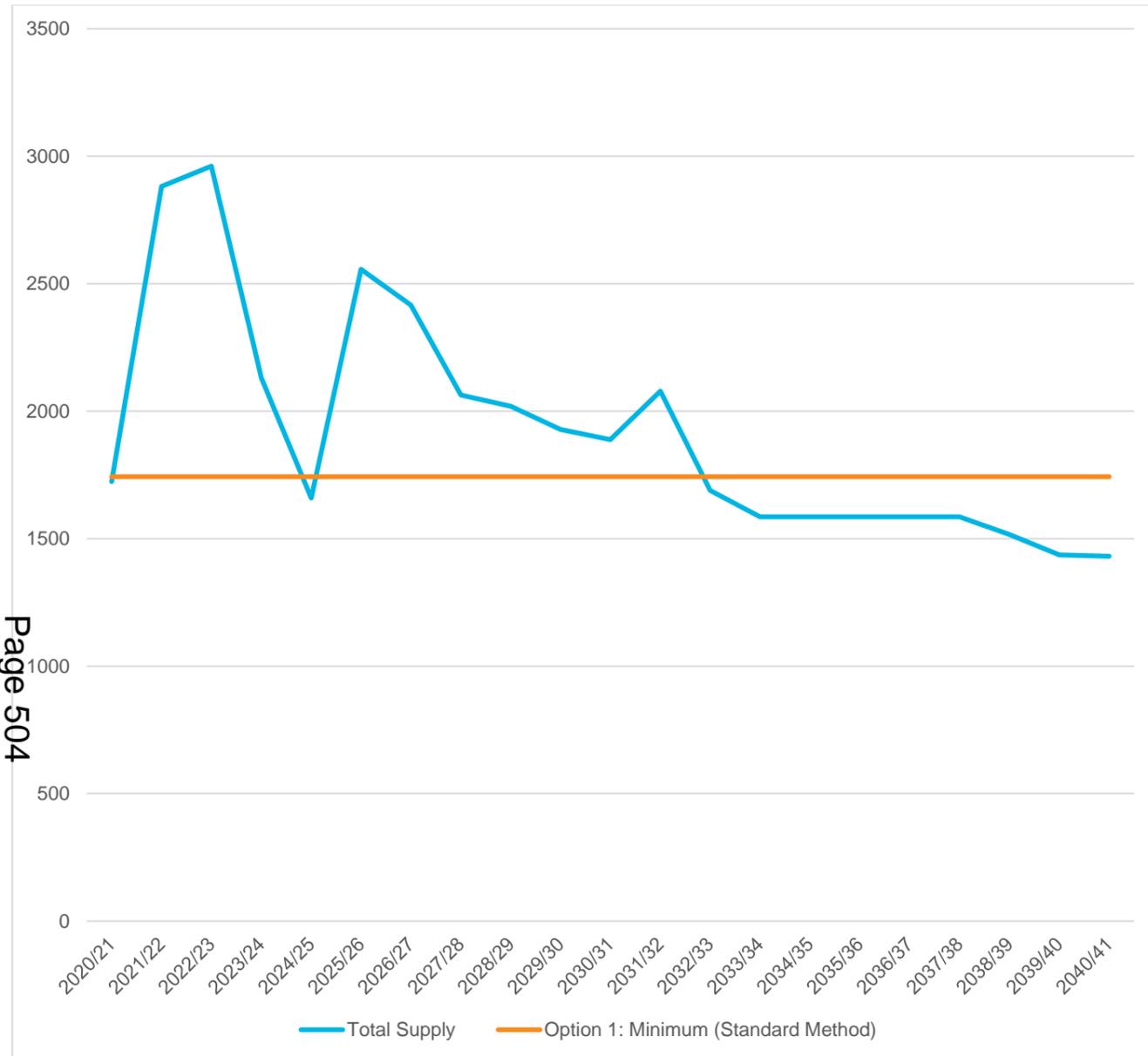
This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

Minimum:

- One smaller new settlement of 4,500 homes on a public transport corridor within the southern cluster area (delivery by 2041, using historic delivery rates)
- Balance to find distributed equally between the five villages located within the core southern cluster area that are also on a public transport corridor.

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	2590	
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	250	250	250	250	250	250	250	250	250	250	250	2500
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	108	108	108	108	108	108	108	108	108	108	108	108	104	1400	
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	2019	1928	1888	2079	1689	1586	1586	1586	1586	1586	1516	1436	1436	40311	
Option 1: Minimum (Standard Method)	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	36603	
Comparison against Option 1: Minimum (Standard Method)	-19	1139	1218	387	-84	813	673	320	276	185	145	336	-54	-157	-157	-157	-157	-157	-227	-307	-307	3708	
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20410	22338	24226	26305	27994	29579	31165	32751	34337	35923	37439	38875	40311	-	
Cumulative requirement Option 1: Minimum (Standard Method)	1743	3486	5229	6972	8715	10458	12201	13944	15687	17430	19173	20916	22659	24402	26145	27888	29631	31374	33117	34860	36603	-	
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	124%	115%	112%	113%	108%	102%	93%	91%	91%	91%	90%	87%	84%	-	

Housing trajectory



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Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1743dpa x 5	8715.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-2641.0
(d)	5 year requirement + Shortfall/Surplus	(1743 x 5) + (c)	8715.0
(e)	Add 10% buffer	(d) x 1.10	9586.5
(f)	Annual target	(e) / 5 years	1917.3
(g)	Supply within first 5 years		10982.0
(h)	Land supply	(g) / (f)	5.73
(i)	Deficit / surplus	(g) - (e)	1396

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Minimum housing requirement is largely met by existing commitments and the windfall allowance. Additional supply from a new settlement later in the plan period would act as a buffer to ensure delivery against the annual housing requirement. Under-delivery against the annual housing requirement is anticipated later in the plan period from 2032/33 onwards which would result in the loss of a five-year housing land supply without additional allocations (if it is not possible to bank over-delivery in the early part of the plan period). Sites in the villages are likely to have shorter lead-in times post Local Plan adoption and therefore are likely to result in additional supply in the middle of the plan period. Because of this medium-term delivery, on top of existing commitments, this option is not expected to be able to meet the annual housing requirement after 2032/33 and would result in the loss of a five-year housing land supply after this point. If decisions over allocations were deferred to Neighbourhood Plans this would extend the lead-in times and deliver sites later in the plan period, but this relies on local communities bringing forward Neighbourhood Plans with sufficient housing allocations at the appropriate time (unless a suitable safeguard mechanism is put in place to allow Councils to make the allocations in a DPD should Neighbourhood Plans not do so). However, additional allocations would be required to meet the annual housing requirement post 2032/33 if over-delivery earlier in the plan period cannot be “banked”.</p>
Stepped housing requirement	<p>Not required as there is no step-change in delivery planned.</p>
Market absorption including competition from similar sites	<p>A new settlement towards the end of the plan period would deliver additional housing that is fairly similar to the existing commitments. It is important to note that the new settlement would be well-located to provide good accessibility to employment opportunities to the south of Cambridge, increasing demand and reducing competition with existing committed sites to the north and west of Cambridge. Dispersal of new development to the villages would complement the significant amount of committed development planned at new settlements and would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would maximise the market absorption rate.</p>
House building capacity	<p>Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 5.73 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.</p>
Meeting the small sites requirement	<p>It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. This option is considered likely to enable the Councils to meet the NPPF small sites requirement.</p>
Housing Delivery Test	<p>Housing Delivery Test is met until 3032/33 onwards when an Action Plan would need to be prepared. Delivery is not anticipated to drop below 85% until the final year of the plan period, avoiding triggering the use of a 20% buffer on the five-year housing land supply until 2040/41.</p>

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Option 7b: Supporting a high-tech corridor by integrating homes and jobs (Medium)

Summary of option

This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

Medium:

- One smaller new settlement of 4,500 homes on a public transport corridor within the southern cluster area (delivery by 2041, using historic delivery rates)
- Balance to find spread across five villages sited along existing or proposed public transport corridors within the core southern cluster area (70%), and further villages within Southern Cluster core area not on PT corridors (including Group villages (20%) and Infill villages (10%).

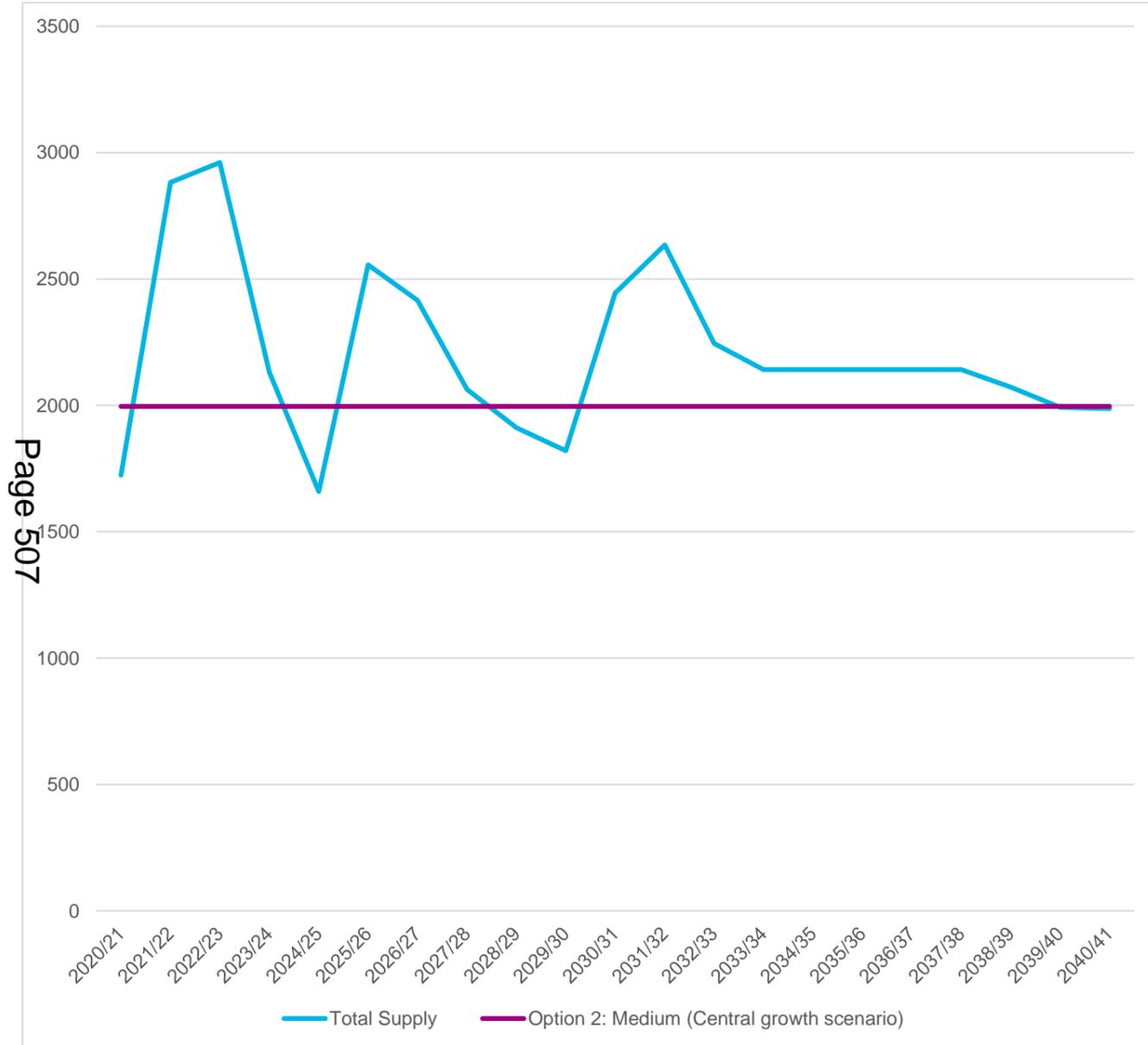
Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	250	250	250	250	250	250	250	250	250	250	250	2500
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	0	0	664	664	664	664	664	664	664	664	664	664	660	660	7300
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	1911	1820	2444	2635	2245	2142	2142	2142	2142	2142	2072	1992	1992	1992	46211
Option 2: Medium (Central growth scenario)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	41916
Comparison against Option 2: Medium (Central growth scenario)	-272	886	965	134	-337	560	420	67	-85	-176	448	639	249	146	146	146	146	146	76	-4	-4	-4	4295
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20302	22122	24566	27201	29446	31587	33729	35871	38013	40155	42227	44219	46211	-	-
Cumulative requirement Option 2:	1996	3992	5988	7984	9980	11976	13972	15968	17964	19960	21956	23952	25948	27944	29940	31936	33932	35928	37924	39920	41916	-	-

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
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Medium (Central growth scenario)

Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	122%	111%	118%	132%	140%	134%	125%	123%	123%	123%	122%	119%	116%	-
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Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1996dpa x 5	9980.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-1376.0
(d)	5 year requirement + Shortfall/Surplus	(1996 x 5) + (c)	9980.0
(e)	Add 10% buffer	(d) x 1.10	10978.0
(f)	Annual target	(e) / 5 years	2195.6
(g)	Supply within first 5 years		10766.0
(h)	Land supply	(g) / (f)	4.90
(i)	Deficit / surplus	(g) - (e)	-212

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Additional supply in the mid-latter part of the plan period will enable delivery against the overall medium housing requirement. The new settlement site is anticipated to deliver in the longer-term which leaves a marginal shortfall against the annual housing requirement in the middle of the plan period in 2028/29 – 2029/30 and at the end of the plan period in 2039/40 and 2040/41. Alternative small-scale site allocations with short lead-in times may be able to address this, for example in Cambridge Urban Area. Additionally, the delivery rates from allocations in the villages may be delivered over a longer time period than that assumed in the trajectory, with more delivering in the first 5 years, which could smooth out the trajectory.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	A new settlement towards the end of the plan period would deliver additional housing that is fairly similar to the existing commitments. It is important to note that the new settlement would be well-located to provide good accessibility to employment opportunities to the south of Cambridge, increasing demand and reducing competition with existing committed sites to the north and west of Cambridge. Dispersal of new development to the villages would complement the significant amount of committed development planned at new settlements and would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would maximise the market absorption rate.
House building capacity	This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 4.9 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met additional short-term allocations could be made (such as sites in Cambridge Urban Area), or potentially an argument could be advanced for a stepped annual housing requirement, but it is not considered that a convincing case could be made in light of the PPG requirement for the increase to be "significant" and to "not seek to unnecessarily delay meeting identified development needs".
Meeting the small sites requirement	It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. This option is considered likely to enable the Councils to meet the NPPF small sites requirement.
Housing Delivery Test	As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.

Option 7c: Supporting a high-tech corridor by integrating homes and jobs (Maximum)

Summary of option

This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

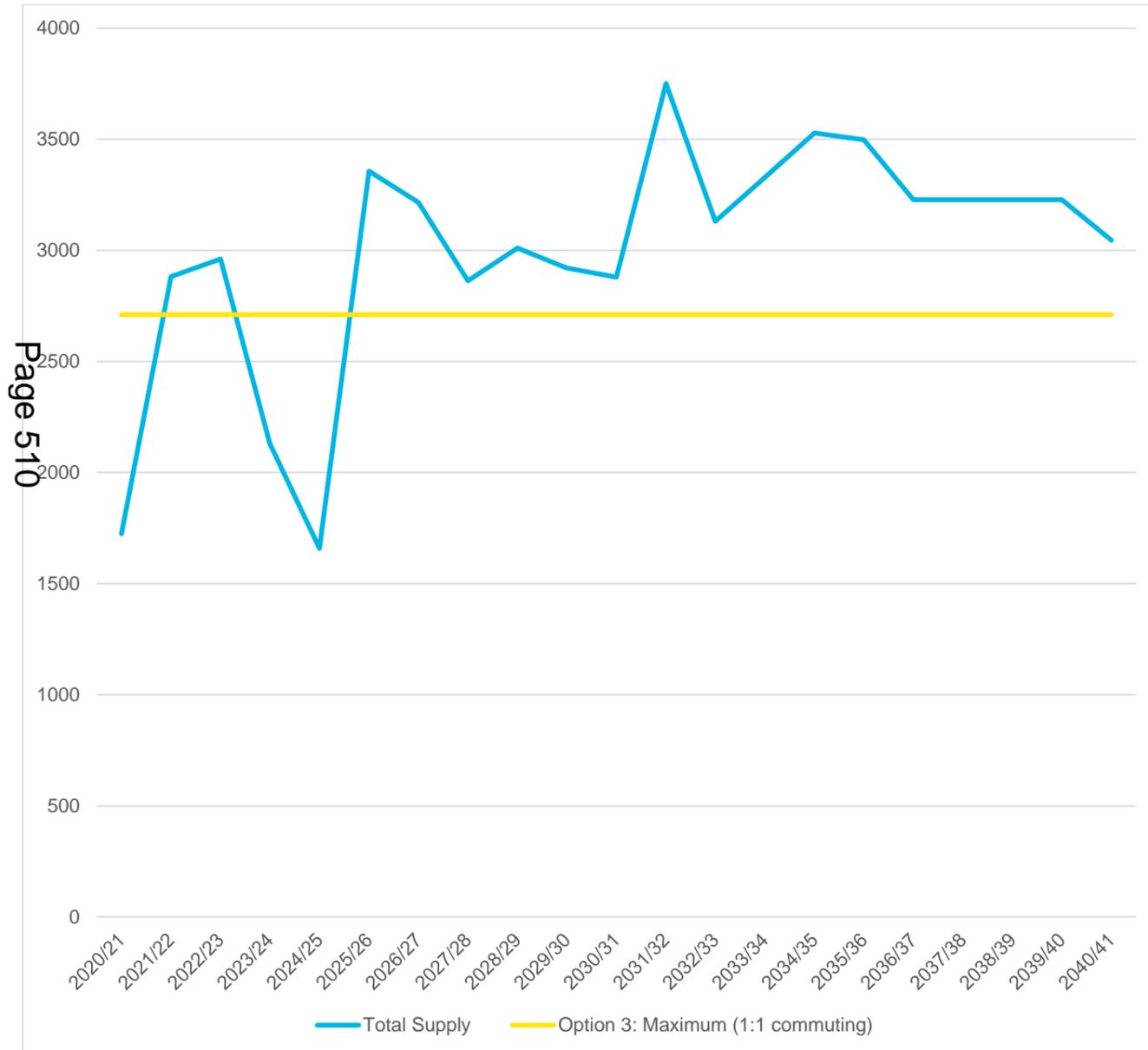
Maximum:

- All existing committed strategic sites assume double historic delivery rates from 2025/26 onwards (Northstowe 500dpa; Waterbeach 500dpa; Bourn Airfield 300dpa and Cambourne 300dpa).
- One larger new settlement of 9,000 homes on a public transport corridor within the southern cluster (delivery by 2041, using higher delivery rates)
- Balance to find spread equally across five villages sited at existing or proposed public transport nodes within the southern cluster.
- Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates)
- North East Cambridge (delivery by 2041 assumption, using delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	27	14419
Northstowe	232	345	395	345	187	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	319	9323
Waterbeach New Town	0	150	250	250	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	8900
Bourn Airfield	0	0	35	75	120	300	300	300	300	300	300	300	300	300	300	270	0	0	0	0	0	0	3500
Cambourne West	0	80	160	160	160	300	300	300	300	300	300	230	0	0	0	0	0	0	0	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	490	490	490	490	490	490	490	490	490	490	490	4900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	300	500	500	500	500	500	500	500	500	3800
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	510	510	510	510	510	510	510	510	510	510	510	5100
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	3900
Total (Completions and supply)	1724	2882	2961	2130	1659	3356	3216	2863	3011	2920	2880	3751	3131	3398	3528	3498	3228	3228	3228	3228	3228	3047	62866
Option 3: Maximum (1:1 commuting)	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	56931
Comparison against Option 3: Maximum (1:1 commuting)	-987	171	250	-581	-1052	645	505	152	300	209	169	1040	420	687	817	787	517	517	517	517	336	5935	

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Cumulative delivery	1724	4606	7567	9697	11356	14712	17928	20791	23802	26722	29602	33353	36484	39881	43409	46907	50135	53363	56591	59819	62866	-
Cumulative requirement Option 3: Maximum (1:1 commuting)	2711	5422	8133	10844	13555	16266	18977	21688	24399	27110	29821	32532	35243	37954	40665	43376	46087	48798	51509	54220	56931	-
Rolling HDT	-	-	145%	152%	129%	137%	157%	180%	174%	168%	168%	183%	187%	197%	192%	199%	196%	190%	185%	185%	182%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	2711dpa x 5	13555.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	2199.0
(d)	5 year requirement + Shortfall/Surplus	(2711 x 5) + (c)	15754.0
(e)	Add 10% buffer	(d) x 1.10	17329.4
(f)	Annual target	(e) / 5 years	3465.9
(g)	Supply within first 5 years		15366.0
(h)	Land supply	(g) / (f)	4.43
(i)	Deficit / surplus	(g) - (e)	-1963

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Additional supply in the mid-latter part of the plan period will enable delivery against the overall maximum housing requirement. The plan period starts with a shortfall against the significantly increased annual housing requirement figure, which results in the need for the shortfall to be met within the first five years under the Sedgefield method, increasing the five-year housing land supply requirement beyond that which can be delivered under this option, resulting in the need for a stepped annual housing requirement and/or the Liverpool method to meeting the shortfall over the plan period.</p> <p>North East Cambridge, Cambridge Airport and the new settlement sites are anticipated to deliver in the longer-term. It is noted that this option includes the assumption of a high delivery rate at Cambridge Airport, North East Cambridge and the new settlement on a public transport corridor. Medium-term supply is provided by allocations in the villages and double delivery rates at existing committed sites.</p> <p>The trajectory shows a peak in the middle of the plan period, in the first 5 years after plan adoption. This in turn is based on an assumption by the Councils that delivery rates can be doubled on existing strategic sites that are already consented or allocated and working their way through the development management process. A build-out rate of 500dpa is assumed on existing sites from 2025/26 (plan adoption) onwards. This is considered unrealistic for sites that are already allocated and working their way through the system.</p> <p>Average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models. Secondary sources and emerging primary research suggests that a traditional approach would be unlikely to exceed 300 dpa.</p>
Stepped housing requirement	<p>The maximum scenario would be a step-change in housing delivery, 88% higher than historic completions in 2002/03-2018/19. Given the projected under-delivery in the period 2020/21 to plan adoption (1st April 2025) the shortfall should be met in the first 5 years under the Sedgefield method under the PPG (unless the Liverpool method can be justified). Due to the fact that, under the Councils' assumptions, this option cannot deliver a five-year housing land supply at plan adoption under the Sedgefield method, either the Liverpool method or a stepped annual housing requirement is necessary. If it transpires that delivery rates of 500dpa at existing committed strategic sites are not deliverable, then a stepped annual housing requirement would be necessary; although this would further increase an already challenging annual housing requirement later in the plan period.</p>
Market absorption including competition from similar sites	<p>Under the Council's assumptions the strategic allocations are deferred to the latter part of the plan period once the existing committed new settlements have been completed, which ensures continuity of delivery whilst avoiding competition. Medium-long term supply is provided through allocations at the villages. Theoretically this has the potential to reduce competition and increase market absorption, however the trajectory assumes all strategic sites are built out at 500dpa which is deemed unrealistic.</p>
House building capacity	<p>This level of supply is significantly (88%) above historic trends, which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 4.43 years is anticipated at plan adoption with a 10% buffer. This calculation has been undertaken using the Councils' assumptions for lead-in times and build-out rates. As discussed above the assumptions for strategic allocations under the maximum scenario are considered unrealistic and undeliverable, therefore it is likely that the five-year housing land supply would be lower in reality at plan adoption if evidence confirms that only lower rates are deliverable. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met alternative short-term allocations could be made (such as small sites in villages), or an argument advanced for a stepped annual housing requirement.</p>
Meeting the small sites requirement	<p>It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. This option is considered likely to enable the Councils to meet the NPPF small sites requirement.</p>
Housing Delivery Test	<p>As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.</p>

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Option 8a: Expanding a growth area around transport nodes (Minimum)

Summary of option

This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

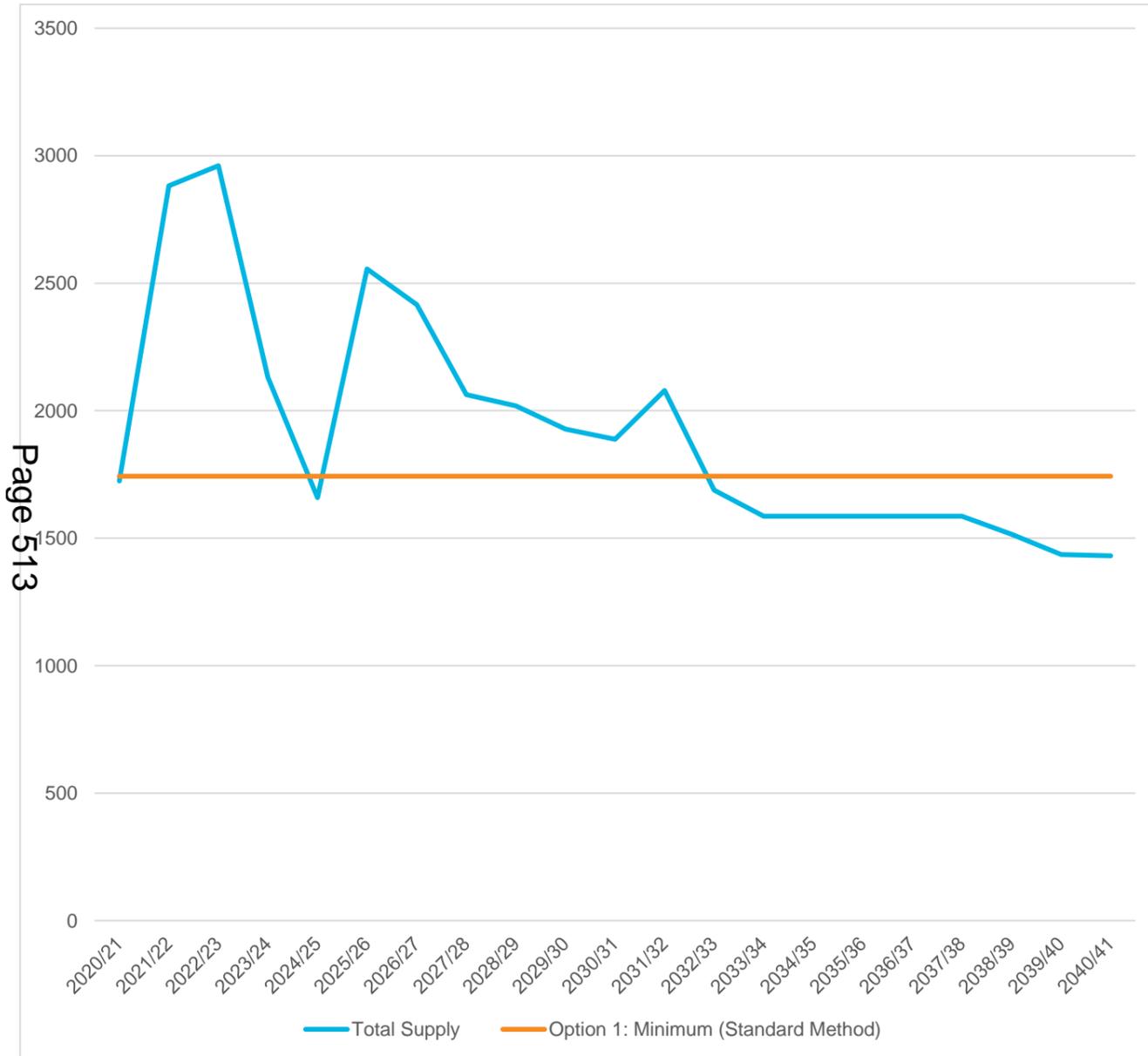
Minimum:

- Expansion of Cambourne by the equivalent of one smaller new settlement (delivery by 2041, using historic delivery rates)
 - completions and commitments + 4,500 dwellings = 11,300 (and close to further development of 3,500 at Bourn Airfield New Village)
- Balance to find spread across three villages sited along the A428 public transport corridor

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	27	14419
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	250	250	250	250	250	250	250	250	250	250	250	2500
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	108	108	108	108	108	108	108	108	108	108	108	108	108	104	1400
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	2019	1928	1888	2079	1689	1586	1586	1586	1586	1586	1516	1436	1431	1431	40307
Option 1: Minimum (Standard Method)	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	1743	36603
Comparison against Option 1: Minimum (Standard Method)	-19	1139	1218	387	-84	813	673	320	276	185	145	336	-54	-157	-157	-157	-157	-157	-227	-307	-312	3704	
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20410	22338	24226	26305	27994	29580	31166	32752	34338	35924	37440	38876	40307	-	
Cumulative requirement Option 1:	1743	3486	5229	6972	8715	10458	12201	13944	15687	17430	19173	20916	22659	24402	26145	27888	29631	31374	33117	34860	36603	-	

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
Minimum (Standard Method)																						
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	124%	115%	112%	113%	108%	102%	93%	91%	91%	91%	90%	87%	84%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1743dpa x 5	8715.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-2641.0
(d)	5 year requirement + Shortfall/Surplus	(1743 x 5) + (c)	8715.0
(e)	Add 10% buffer	(d) x 1.10	9586.5
(f)	Annual target	(e) / 5 years	1917.3
(g)	Supply within first 5 years		10982.0
(h)	Land supply	(g) / (f)	5.73
(i)	Deficit / surplus	(g) - (e)	1396

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Minimum housing requirement is largely met by existing commitments and the windfall allowance. Additional supply from a new settlement later in the plan period would act as a buffer to ensure delivery against the annual housing requirement. Under-delivery against the annual housing requirement is anticipated later in the plan period from 2032/33 onwards which would result in the loss of a five-year housing land supply without additional allocations. (assuming that over-delivery earlier in the plan period cannot be “banked”). Sites in the villages are likely to have shorter lead-in times post Local Plan adoption and therefore are likely to result in additional supply in the middle of the plan period. Because of this medium-term delivery, on top of existing commitments, this option is not expected to be able to meet the annual housing requirement after 2032/33 and would result in the loss of a five-year housing land supply after this point. If decisions over allocations were deferred to Neighbourhood Plans this would extend the lead-in times and deliver sites later in the plan period, but this relies on local communities bringing forward Neighbourhood Plans with sufficient housing allocations at the appropriate time (unless a suitable safeguard mechanism is put in place to allow Councils to make the allocations in a DPD should Neighbourhood Plans not do so). However, additional allocations would be required to meet the annual housing requirement post 2032/33 if over-delivery earlier in the plan period cannot be “banked”.</p>
Stepped housing requirement	<p>Not required as there is no step-change in delivery planned.</p>
Market absorption including competition from similar sites	<p>A new settlement expanding Cambourne towards the end of the plan period would deliver additional housing that is fairly similar to the existing commitments. It is important to note that the new settlement would be expected to be delivering alongside Cambourne West and Bourn Airfield which would likely result in competition between the sites and could affect market absorption and therefore build-out rates by delivering a similar product in a similar location. This is mitigated to a degree by dispersal of new development to the villages which would complement the significant amount of committed development planned at new settlements and would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would maximise the market absorption rate.</p>
House building capacity	<p>Supply is in line with historic trends which should be easily accommodated by the housebuilding industry.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 5.73 years is anticipated at plan adoption with a 10% buffer. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council’s trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.</p>
Meeting the small sites requirement	<p>It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. This option is considered likely to enable the Councils to meet the NPPF small sites requirement.</p>
Housing Delivery Test	<p>Housing Delivery Test is met until 3032/33 onwards when an Action Plan would need to be prepared. Delivery is not anticipated to drop below 85% until the final year of the plan period, avoiding triggering the use of a 20% buffer on the five-year housing land supply until 2040/41.</p>

Option 8b: Expanding a growth area around transport nodes (Medium)

Summary of option

This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

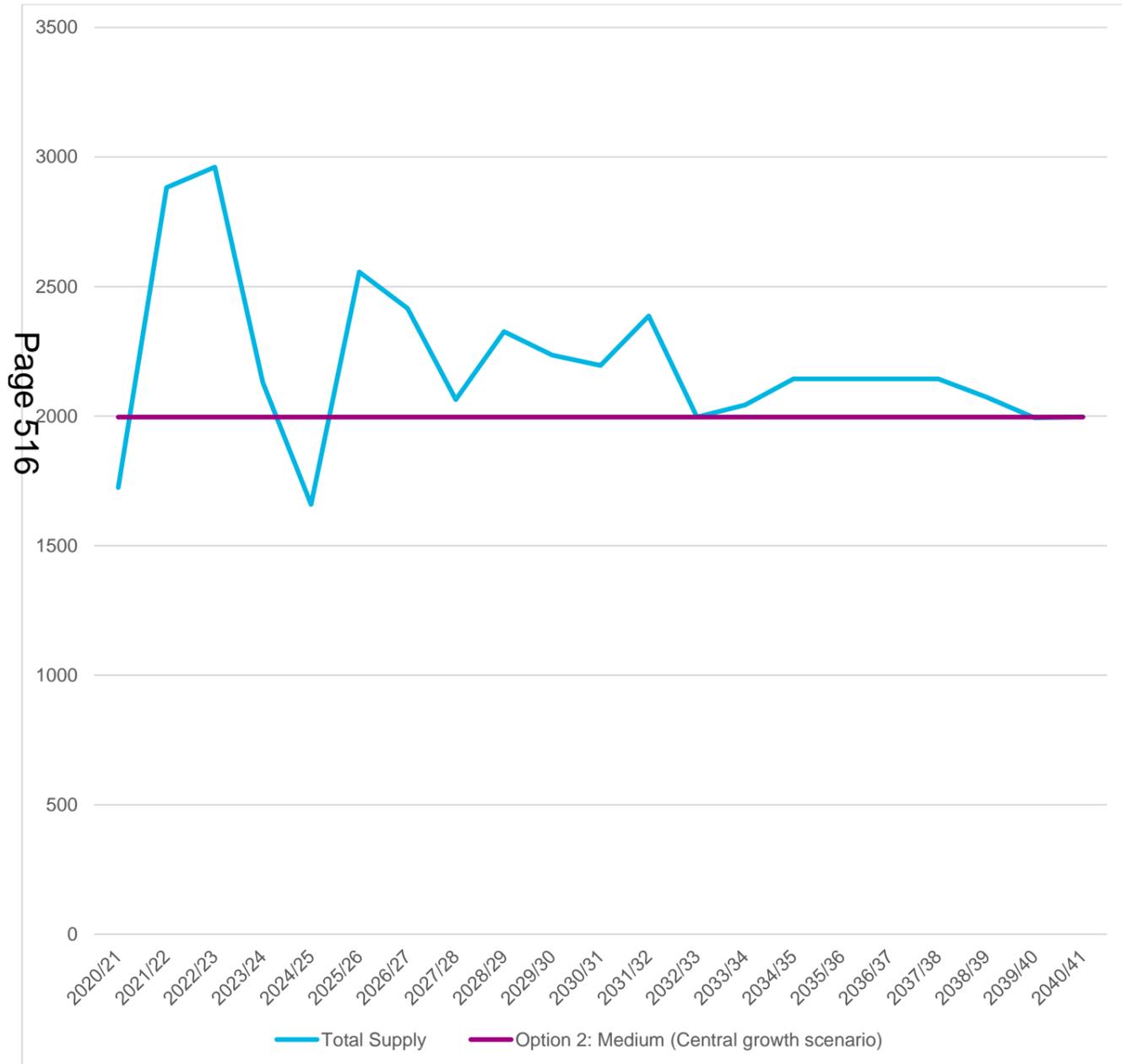
Medium:

- Expansion of Cambourne by the equivalent of one smaller new settlement (delivery by 2041, using historic delivery rates)
 - completions and commitments + 4,500 dwellings = 11,300 dwellings (and close to further development of 3,500 at Bourn Airfield New Village)
- Balance to find spread across three villages sited along the A428 public transport corridor (60%) and four further Minor Rural Centre/Group villages sited within 5km of Cambourne (40%).
- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	5504
Waterbeach New Town	0	150	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	4900
Bourn Airfield	0	0	35	75	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	2630
Cambourne West	0	80	160	160	160	150	150	150	150	150	150	150	150	150	150	150	150	150	80	0	0	2590	
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	0	0	150	250	250	250	250	250	250	250	250	1900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	250	250	250	250	250	250	250	250	250	250	250	2500
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	415	415	415	415	415	415	415	415	415	415	415	415	420	5400	
Total (Completions and supply)	1724	2882	2961	2130	1659	2556	2416	2063	2326	2235	2255	2386	1996	2043	2143	2143	2143	2143	2073	1993	1993	1993	46262
Option 2: Medium (Central growth scenario)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	41916
Comparison against Option 2: Medium (Central growth scenario)	-272	886	965	134	-337	560	420	67	330	239	259	390	0	47	147	147	147	147	77	-3	-3	4346	

Source	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	Total to 2041
Cumulative delivery	1724	4606	7567	9697	11356	13912	16328	18391	20717	22952	25207	27593	29589	31631	33774	35917	38060	40203	42276	44269	46262	-
Cumulative requirement Option 2: Medium (Central growth scenario)	1996	3992	5988	7984	9980	11976	13972	15968	17964	19960	21956	23952	25948	27944	29940	31936	33932	35928	37924	39920	41916	-
Rolling HDT	-	-	145%	152%	129%	121%	127%	135%	130%	127%	130%	131%	127%	123%	118%	121%	123%	123%	122%	119%	116%	-

Housing trajectory



Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	1996dpa x 5	9980.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	-1376.0
(d)	5 year requirement + Shortfall/Surplus	(1996 x 5) + (c)	9980.0
(e)	Add 10% buffer	(d) x 1.10	10978.0
(f)	Annual target	(e) / 5 years	2195.6
(g)	Supply within first 5 years		11596.0
(h)	Land supply	(g) / (f)	5.28
(i)	Deficit / surplus	(g) - (e)	618

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	Additional supply in the mid-latter part of the plan period will enable delivery against the overall medium housing requirement. North East Cambridge and new settlement sites are anticipated to deliver in the longer-term, while allocations in the villages have shorter lead-in times. The annual housing requirement would be met throughout the plan period apart from minor under-delivery at the end of the plan period in 2039/40-2040/41.
Stepped housing requirement	Not required as there is no step-change in delivery planned.
Market absorption including competition from similar sites	A new settlement expanding Cambourne towards the end of the plan period would deliver additional housing that is fairly similar to the existing commitments. It is important to note that the new settlement would be expected to be delivering alongside Cambourne West and Bourn Airfield which would likely result in competition between the sites and could affect market absorption and therefore build-out rates by delivering a similar product in a similar location. This is mitigated to a degree by dispersal of new development to the villages which would complement the significant amount of committed development planned at new settlements and would provide a wider choice of housing in the market for people in terms of size and location. Development in the villages is not likely to compete significantly with new settlements which would maximise the market absorption rate.
House building capacity	This level of supply is consistently above historic trends, but not significantly so, which should be able to be accommodated by the housebuilding industry.
Five year housing land supply	A five-year housing land supply figure of 5.28 years is anticipated at plan adoption with a 10% buffer. This is fairly marginal and should be kept under review. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19.
Meeting the small sites requirement	It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. Given the scale of allocations in the villages this option is considered likely to enable the Councils to meet the NPPF small sites requirement.
Housing Delivery Test	As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.

Option 8c: Expanding a growth area around transport nodes (Maximum)

Summary of option

This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

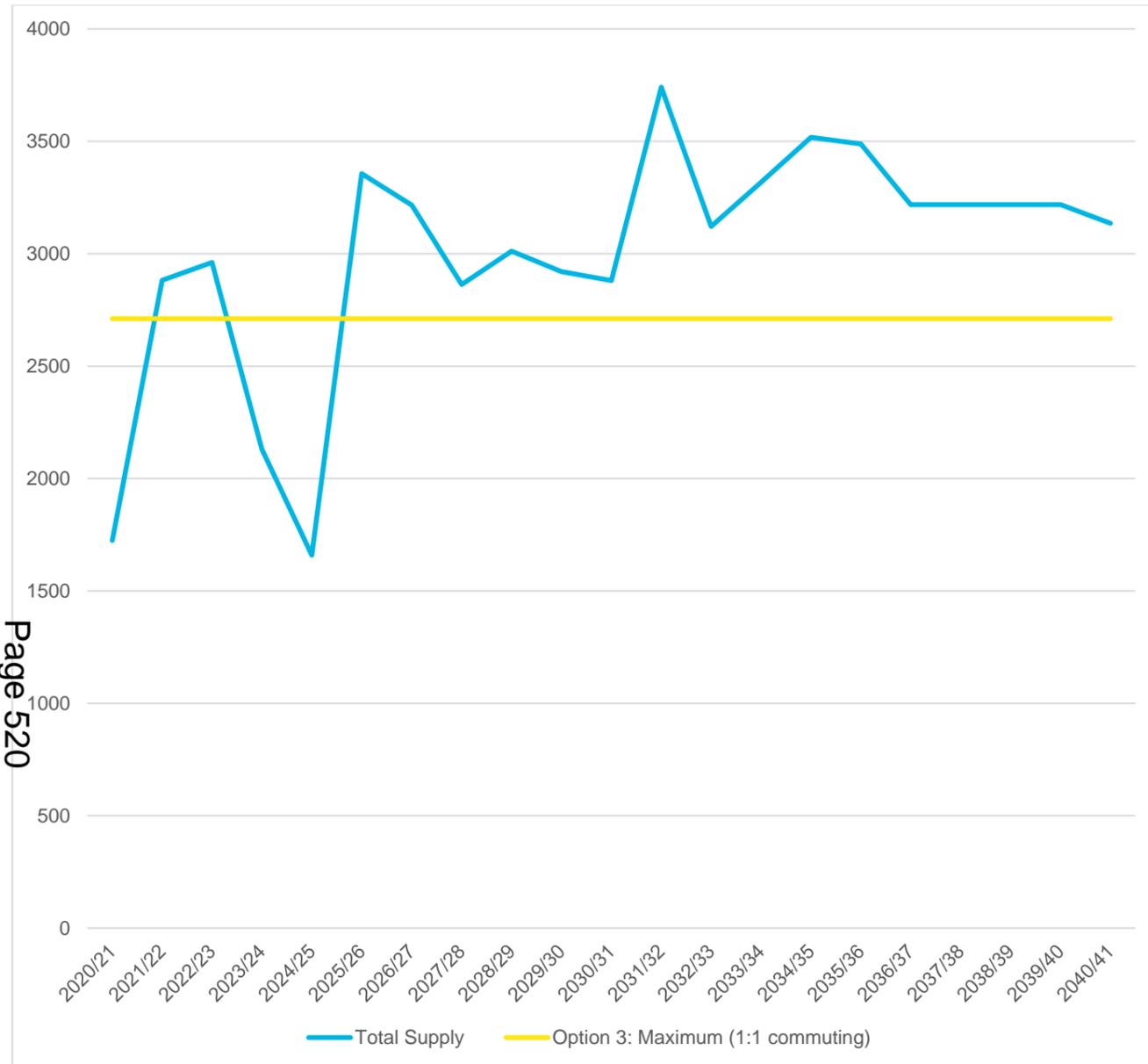
Maximum:

- All existing committed strategic sites assume double historic delivery rates from 2025/26 onwards (Northstowe 500dpa; Waterbeach 500dpa; Bourn Airfield 300dpa and Cambourne 300dpa).
- Expansion of Cambourne by the equivalent of one larger new settlement (delivery by 2041, using higher delivery rates)
 - completions and commitments + 9,000 dwellings = 15,800 dwellings (and close to further development of 3,500 at Bourn Airfield New Village)
- Balance to find (accounting for sources of supply below) spread across:
 - three villages sited along the A428 public transport corridor (60%)
 - one Minor Rural Centre and three Group villages within 5km of Cambourne (40%)
- Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates)
- North East Cambridge (delivery by 2041 assumption, using delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041	
Commitments	1492	2307	2121	1300	942	1406	1215	862	710	619	579	520	130	27	27	27	27	27	27	27	27	14419	
Northstowe	232	345	395	345	187	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	319	9323
Waterbeach New Town	0	150	250	250	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	8900
Bourn Airfield	0	0	35	75	120	300	300	300	300	300	300	300	300	300	300	270	0	0	0	0	0	0	3500
Cambourne West	0	80	160	160	160	300	300	300	300	300	300	230	0	0	0	0	0	0	0	0	0	0	2590
Windfall (City)	0	0	0	0	0	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	2080
Windfall (South Cambs)	0	0	0	0	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	3520
Wellcome Genome Campus	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1500
Uncertain Cambridge Allocations	0	0	0	0	0	0	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-50	-736
Cambridge Urban Area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0	0	0	0	0	0	490	490	490	490	490	490	490	490	490	490	490	4900
Cambridge Airport (safeguarded land)	0	0	0	0	0	0	0	0	0	0	0	0	0	300	500	500	500	500	500	500	500	500	3800
Green Belt Fringe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New settlements on public transport corridors	0	0	0	0	0	0	0	0	0	0	0	500	500	500	500	500	500	500	500	500	500	600	5100
New settlements on road network	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Villages total	0	0	0	0	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	3900

Source	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34	2034/ 35	2035/ 36	2036/ 37	2037/ 38	2038/ 39	2039/ 40	2040/ 41	Total to 2041
Total (Completions and supply)	1724	2882	2961	2130	1659	3356	3216	2863	3011	2920	2880	3741	3121	3318	3518	3488	3218	3218	3218	3218	3037	62696
Option 3: Maximum (1:1 commuting)	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	56931
Comparison against Option 3: Maximum (1:1 commuting)	-987	171	250	-581	-1052	645	505	152	300	209	169	1030	410	607	807	777	507	507	507	507	326	5765
Cumulative delivery	1724	4606	7567	9697	11356	14712	17928	20791	23802	26722	29602	33343	36464	39781	43299	46787	50005	53223	56441	59659	62696	-
Cumulative requirement Option 3: Maximum (1:1 commuting)	2711	5422	8133	10844	13555	16266	18977	21688	24399	27110	29821	32532	35243	37954	40665	43376	46087	48798	51509	54220	56931	-
Rolling HDT	-	-	145%	152%	129%	137%	157%	180%	174%	168%	168%	182%	186%	195%	190%	197%	196%	190%	185%	185%	181%	-

Housing trajectory



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Five-year housing land supply calculation at 1st April 2025 (assumed plan adoption)

Component	Step	Calculation	Number
(a)	Requirement from start of plan period (1st April 2020 - 31st March 2025)	2711dpa x 5	13555.0
(b)	Forecast completions from start of plan period to plan adoption (1st April 2025)		11356.0
(c)	Shortfall/Surplus*	(a) - (b)	2199.0
(d)	5 year requirement + Shortfall/Surplus	(2711 x 5) + (c)	15754.0
(e)	Add 10% buffer	(d) x 1.10	17329.4
(f)	Annual target	(e) / 5 years	3465.9
(g)	Supply within first 5 years		15366.0
(h)	Land supply	(g) / (f)	4.43
(i)	Deficit / surplus	(g) - (e)	-1963

* N.B. the PPG (Paragraph: 032 Reference ID: 68-032-20190722) states that "Where areas deliver more completions than required, the additional supply can be used to offset any shortfalls against requirements from **previous** years". The PPG does not state that over-delivery in the past can be used to offset **future** supply nor does it state that it cannot. It is noted the Secretary of State, in his decision letter in respect of a recovered appeal at Oakridge, Highnam, Tewkesbury (APP/G1630/W/3184272), agreed with overall conclusions and recommendation of an Inspector's which was based in part on a conclusion by the Inspector that an over-supply from previous years should not be 'banked' so as to reduce the five-year housing target in future years. It is fair however to observe that the Secretary of State did not comment expressly on this conclusion by his Inspector in respect of past oversupply. Tewkesbury Borough Council, the LPA involved in that appeal, disagreed with this approach but its attempt to challenge the decision in the High Court did not proceed to a determination for technical reasons. A definitive view on how over-supply should be treated in a five-year housing land supply calculation has not provided by the Secretary of State through the PPG nor has it been determined by the Courts in interpreting current policy and guidance. Therefore, at this interim report stage, it is considered reasonable and pragmatic to adopt a worst case scenario and thereby to assume that any over-supply cannot be used to reduce future five-year housing land supply requirements.

Commentary:

Factor	Commentary
Ability to deliver new homes	<p>Additional supply in the mid-latter part of the plan period will enable delivery against the overall maximum housing requirement. The plan period starts with a shortfall against the significantly increased annual housing requirement figure, which results in the need for the shortfall to be met within the first five years under the Sedgefield method, increasing the five-year housing land supply requirement beyond that which can be delivered under this option, resulting in the need for a stepped annual housing requirement and/or the Liverpool method to meeting the shortfall over the plan period.</p> <p>North East Cambridge, Cambridge Airport and the new settlement sites are anticipated to deliver in the longer-term. It is noted that this option uses a high delivery rate at Cambridge Airport, North East Cambridge and the new settlement at Cambourne. Medium-term supply is provided by allocations in the A428 corridor villages and double delivery rates at existing committed sites.</p> <p>The trajectory shows a peak in the middle of the plan period, in the first 5 years after plan adoption. This in turn is based on an assumption by the Councils that delivery rates can be doubled on existing strategic sites that are already consented or allocated and working their way through the development management process. A build-out rate of 500dpa is assumed on existing sites from 2025/26 (plan adoption) onwards. This is considered unrealistic for sites that are already allocated and working their way through the system.</p> <p>Average build out rates in excess of 300 dwellings per annum (dpa) will only be possible with significant interventions and/or alternative delivery models. Secondary sources and emerging primary research suggests that a traditional approach would be unlikely to exceed 300 dpa.</p>
Stepped housing requirement	<p>The maximum scenario would be a step-change in housing delivery, 88% higher than historic completions in 2002/03-2018/19. Given the projected under-delivery in the period 2020/21 to plan adoption (1st April 2025) the shortfall should be met in the first 5 years under the Sedgefield method under the PPG (unless the Liverpool method can be justified). Due to the fact that, under the Councils' assumptions, this option cannot deliver a five-year housing land supply at plan adoption under the Sedgefield method, either the Liverpool method or a stepped annual housing requirement is necessary. If it transpires that delivery rates of 500dpa at existing committed strategic sites are not deliverable, then a stepped annual housing requirement would be necessary; although this would further increase an already challenging annual housing requirement later in the plan period.</p>
Market absorption including competition from similar sites	<p>A new settlement expanding Cambourne towards the end of the plan period would deliver additional housing that is fairly similar to the existing commitments. It is important to note that the new settlement would be expected to be delivering alongside Cambourne West and Bourn Airfield which would likely result in competition between the sites and could affect market absorption and therefore build-out rates by delivering a similar product in a similar location. This is mitigated to a degree by dispersal of new development to the villages which would complement the significant amount of committed development planned at new settlements and would provide a wider choice of housing in the market for people in terms of size and location, however those villages are in the A428 corridor near Cambourne. Such a significant amount of development in the Cambourne / A428 area may be undeliverable, notwithstanding the plans for a new East West Rail station at Cambourne serving Cambridge, Bedford and Milton Keynes.</p>
House building capacity	<p>This level of supply is significantly (88%) above historic trends, which may present issues for the local housebuilding industry in terms of gearing up to deliver that quantity of development in a short amount of time.</p>
Five year housing land supply	<p>A five-year housing land supply figure of 4.43 years is anticipated at plan adoption with a 10% buffer. This calculation has been undertaken using the Councils' assumptions for lead-in times and build-out rates. As discussed above the assumptions for strategic allocations under the maximum scenario are considered unrealistic and undeliverable, therefore it is likely that the five-year housing land supply would be lower in reality at plan adoption if evidence confirms that only lower rates are deliverable. The poor rate of delivery in 2020/21 could be removed from the plan period if the base date of the plan period is moved forward a year into 2021/22. The five-year housing land supply calculation is based on the Council's trajectory data for 2021/22 and 2022/23 where strong delivery is predicted against the requirement and may be adversely affected by COVID-19. To enable a five-year housing land supply to be met additional short-term allocations could be made (such as small sites in villages), or an argument advanced for a stepped annual housing requirement.</p>
Meeting the small sites requirement	<p>It is assumed that sites delivered in the villages would be smaller scale and therefore more likely to yield additional sites that meet the NPPF Paragraph 68 definition. Given the scale of allocations in the villages this option is considered likely to enable the Councils to meet the NPPF small sites requirement.</p>
Housing Delivery Test	<p>As the supply comfortably exceeds the minimum standard method the Housing Delivery Test will be passed in all years of the plan period.</p>

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Appendix 2 Lead in times and build out rates

Setting realistic delivery rates and lead in times should be considered carefully to ensure assumptions are realistic and backed by evidence. This will allow for a robust identification for how many dwellings each spatial scenario/strategic site can deliver over the plan period.

A useful proxy to establish realistic average annual delivery rates is to consider the performance of the volume housebuilders (**Table A2.3**). Some of which are involved on allocations in the study area. Annual Reports for 2017-2019 illustrate average completions per site (market and affordable) of 47 units per annum per outlet within a range of between 34-102 units per annum⁷. There are also well established norms for new build development e.g. average completions begin low and build up reflecting site-wide infrastructure and servicing being delivered. As a project matures and the landscaping and social infrastructure is completed rates will increase. It was notable that Countryside Properties achieved higher build out rates per outlet, and their annual reports state that they seek to deliver high levels of affordable homes and private rented units, with private sales representing a little over a third of all sales. This shall be explored in greater detail in the final study.

There are several other aspects to deliverability. One aspect is the capacity for the market to absorb development. This has been given much attention recently though the Letwin Report and other notable research reports⁸ - summarised in **Appendix 5**. It is widely recognised that, regardless of the need for housing from population change, the market (developers) will only build and release housing when they know that they can develop it and then sell it at a price at which they can make a return (or profit) based on the price they have paid for the land. In addition, a market saturated with similar schemes and products will be directly competing and push prices down acting as a disincentive for developers to build at pace. If large allocations are not able to provide policy compliant affordable housing, this exacerbates the market absorption risk.

Absorption rates are an important aspect in plan making and need to be analysed for the purposes of the housing trajectory and five year housing land supply. There is little point in allocating a strategic-scale site to meet a particular housing requirement if it is only going to come forward at a very slow rate. It may be more effective (in terms of housing delivery) to over allocate and include a variety of sites being promoted by different bodies (e.g. Homes England) and Small and Medium Enterprise (SME) developers. The rates of delivery are influenced by the characteristics of individual sites, the product built on the sites, and how sites relate

⁷ Based on 2017 - 2019 House builder Annual Reports for Barratts, Berkeley, Persimmon, Taylor Wimpey, Bellway, Bovis, Crest Nicholson, Redrow, Countryside and Linden Homes.

⁸ Planning and housing delivery (Savills, 2019) Accessed at: <http://pdf.euro.savills.co.uk/uk/spotlight-on/planning-and-housing-delivery---2019.pdf>

Independent review of build out: final report (Rt Hon Sir Oliver Letwin MP, October 2018) Accessed at:

<https://www.gov.uk/government/publications/independent-review-of-build-out-final-report>

Start to Finish - How Quickly do Large-Scale Housing Sites Deliver? (Lichfields, November 2016)

Accessed at: <https://lichfields.uk/media/1728/start-to-finish.pdf>

to each other – as well as the general strength of the housing market. Therefore, a homogenous housing land supply should be avoided where possible.

There is potential for sites (normally larger sites) to see a number of outlets building new homes at any one time. Additional outlets are typically in the form of a different house builder, but it can also be in the form of different products sold from different marketing suites by the same house builder.

The final Housing Delivery Study will include more analysis of the housing market area comparator sites and GCSP strategic sites (completions and projections). An initial review of comparator sites is summarised in **Table A2.1** and **Table A2.4**.

Table A2.1: Comparator sites projections summary

	Peak build out dwellings per annum	Average build out dwellings per annum
Max	655	376
Mean	161	102

Source: AECOM, September 2020

Preliminary analysis of GCSP lead in time data (**Table A2.2**) shows it to be broadly consistent with lead in times nationally. The final study will explore those factors that may influence faster lead in times, particularly associated with urban extensions to Cambridge.

The literature review in **Appendix 5** includes information on average lead in times and build out rates, drawn from published research.

Table A2.2: Average lead-in times GCSP

	Count of Length of Time from Outline Planning Application Submitted to First Housing Completions (in months)	Average of Length of Time from Outline Planning Application Submitted to First Housing Completions (in months)	Years
Cambridge	3	76	6.3
10-49	-	-	-
50-99	1	62	5.2
100-199	1	96	8.0
200-999	-	-	-
1000+	1	69	5.8
City/South Cambs - Joint	2	71	5.9
1000+	2	71	5.9
South Cambs	12	45	3.7
10-49	5	41	3.4

	Count of Length of Time from Outline Planning Application Submitted to First Housing Completions (in months)	Average of Length of Time from Outline Planning Application Submitted to First Housing Completions (in months)	Years
50-99	4	37	3.0
100-199	1	56	4.7
200-999	1	67	5.6
1000+	1	61	5.1
Grand Total	17	53	4.4

Table A2.3: Volume Housebuilders Average Completions per Outlet

	Annual Reports 2017			Annual Reports 2018			Annual Reports 2019			Annual Reports 2020		
House Builder	Number of Completions	Number of Sites (Sales Outlets)	Average No. of Completions	Number of Completions	Number of Sites (Sales Outlets)	Average No. of Completions	Number of Completions	Number of Sites (Sales Outlets)	Average No. of Completions	Number of Completions	Number of Sites (Sales Outlets)	Average No. of Completions
Barratt Developments	17,395	366	48	17,579	368	48	17,856	370	48	12,604	366	34
Persimmon Plc	16,043	370	43	16,449	360	46	15,855	350	45	Not published	-	-
Taylor Wimpey	14,541	287	51	14,933	256	58	15,520	250	62	Not published	-	-
Bellway	9,644	230	42	10,307	247	42	10,892	268	41	Not published	-	-
Bovis/Vistry Group*	3,645	92	40	3,759	87	43	3,867	128	30	Not published	-	-
Berkeley**	3,905	58	67	3,536	62	57	3,698	69	54	2,723	70	39
Countryside	3,389	47	72	4,295	53	81	5,733	56	102	Not published	-	-
Crest Nicholson	2,935	51	58	3,020	55	55	2,912	59	49	Not published	-	-
Bedrow	5,416	132	41	5,913	132	45	6,443	126	51	4,032	110	37
Linden Homes/ Galliford Try***	3,296	77	43	3,442	85	40	3,229	80	40	Not published	-	-
Total	80,209	1,710	-	83,233	1,705	-	86,005	1,756	-	19,359	546	-
Average	-	-	50	-	-	51	-	-	52	-	-	36

*Active outlets not stated for Annual Report 2019. $0.58/\text{week average} = 30.16$ dwellings per outlet per year ($3867/30.21 = \sim 128$ outlets)

**Outlets not stated, live sites with 'implementable planning consent and are in construction' used as a proxy

*** Linden Homes and Galliford Try Partnerships acquired by Vistry Group January 2020

Table A2.4: Comparator Strategic Site Trajectories (Please note: this database is in draft and shall be refined prior to the final Housing Delivery Study)

LPA	Strategic site name	Total completed	Total in plan period	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	Peak dwellings per year	Average dwellings per year	
Huntingdonshire	Alconbury Weald / RAF Alconbury / North Huntingdonshire cluster	394	5,104	48	227	119	199	207	209	208	208	300	300	300	300	300	300	300	300	300	300	300	300	-	-	-	300	249
Huntingdonshire	Edison Bell Way	0	342	-	-	-	-	-	42	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	86
Huntingdonshire	Bearcroft Farm, Godmanchester	429	799	87	114	114	114	75	100	110	55	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	114	89
Huntingdonshire	St Neots East Loves Farm (1300388OUT)/Wintringham Park (17/2308/OUT)	4	3,816	-	-	-	4	43	125	150	200	200	200	200	200	200	200	200	200	200	200	200	200	200	-	-	200	172
Huntingdonshire	RAF Upwood & Upwood Hill House	0	450	-	-	-	-	-	18	60	60	22	36	37	37	36	36	36	36	36	-	-	-	-	-	-	60	38
Huntingdonshire	East of Silver Street and South of A1, Buckden	0	270	-	-	-	-	-	-	-	-	-	-	-	20	50	50	50	50	50	-	-	-	-	-	-	50	45
Peterborough	Hampton (Residual sites)	-	1648	-	-	-	50	80	80	80	100	150	150	150	150	150	150	150	150	58	-	-	-	-	-	-	150	118
Peterborough	Land at Paston Reserve	0	963	-	-	-	-	-	-	-	-	100	100	100	100	50	56	-	-	-	-	-	-	-	-	-	100	84
Peterborough	Hampton Gardens	286	866	-	98	188	125	125	125	125	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	188	126
Peterborough	Hampton Heights	0	350	-	-	-	20	30	40	40	40	40	40	40	30	30	-	-	-	-	-	-	-	-	-	-	40	35
Peterborough	Land south of Oakdale Avenue (Residual)	0	483	-	75	75	0	80	80	80	70	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	60
Peterborough	Fletton Quays, land east Station Road	0	358	-	-	229	129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	179
Peterborough	Site of former of Peterborough District Hospital	0	211	-	-	20	20	40	97	30	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	38
Peterborough	Land east of Alwalton Hill (gateway Peterborough)	0	610	-	-	-	-	-	-	-	-	80	80	80	80	80	80	80	50	-	-	-	-	-	-	-	80	76
Peterborough	East of England Show	0	650	-	-	-	-	-	-	-	-	50	125	125	125	125	100	-	-	-	-	-	-	-	-	-	125	108

LPA	Strategic site name	Total completed	Total in plan period	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	Peak dwellings per year	Average dwellings per year
Ground																											
Peterborough	Norwood	0	2000	-	-	-	-	-	50	50	100	150	200	200	200	200	200	200	150	150	100	50	-	-	-	200	143
Peterborough	Former Freemasons Site, Ivatt Way	0	460	-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	70	90	70	80	-	-	-	90	66
Peterborough	Fengate South	0	350	-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	50	50	50	50	-	-	-	50	50
Peterborough	Hampton Centre	0	200	-	-	-	-	-	-	-	50	50	50	50	-	-	-	-	-	-	-	-	-	-	-	50	50
Peterborough	Orton Centre	0	250	-	-	-	-	-	-	-	-	50	50	50	50	50	-	-	-	-	-	-	-	-	-	50	50
Peterborough	Part of Tanholt Farm, Eye	0	250	-	-	-	-	-	-	-	-	50	50	50	50	-	-	-	-	-	-	-	-	-	-	50	50
Peterborough	North Westgate Opportunity Area	0	200	-	-	-	-	-	-	-	-	50	50	50	50	-	-	-	-	-	-	-	-	-	-	50	50
Peterborough	Station West Opportunity Area	0	200	-	-	-	-	-	-	-	-	50	50	100	-	-	-	-	-	-	-	-	-	-	-	100	67
Peterborough	Station East Opportunity Area	0	400	-	-	-	-	-	-	-	-	100	100	100	100	-	-	-	-	-	-	-	-	-	-	100	100
Peterborough	Riverside South	0	200	-	-	-	-	-	-	-	-	50	50	50	50	-	-	-	-	-	-	-	-	-	-	50	50
East Cambridgeshire	Land at High Flyer Farm North of Kings Avenue Ely Cambridgeshire		800				0	0	0	50	50	50	50	50	50	50	50	50	50	50	50	0	0	0	0	50	32
East Cambridgeshire	North Ely Urban Extension (western parcel)		1200				0	0	30	50	50	70	70	75	75	75	75	75	75	75	75	56	0	0	0	75	49
East Cambridgeshire	Land at Newmarket Road Burwell		350				0	0	0	20	60	60	60	60	60	30	0	0	0	0	0	0	0	0	0	60	18
East Cambridgeshire	West of Woodfern Road		250				0	10	50	50	50	50	40	0	0	0	0	0	0	0	0	0	0	0	0	50	13
East Cambridgeshire	Land Parcel North of Grange Lane Littleport Cambridgeshire		680				0	0	0	35	70	70	70	70	70	70	70	70	35	35	15	0	0	0	0	70	36
East Cambridgeshire	Land off Brook Street		400				0	0	0	0	50	50	50	50	50	50	50	50	0	0	0	0	0	0	0	50	21

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LPA	Strategic site name	Total completed	Total in plan period	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	Peak dwellings per year	Average dwellings per year
East Cambridgeshire	Eastern Gateway area		600			0	30	50	50	50	50	50	50	50	50	50	50	50	20	0	0	0	0	0	0	50	32

Source: Various local planning authority Annual Monitoring Reports, housing trajectories and five-year housing land supply statements

At this interim stage the consultant team are continuing to build up an analysis of lead in times and build out rates drawn from the region and other comparable growth areas in the South East/East. To date this task has involved collecting data from sources such as Annual Monitoring Reports, five year housing land supply position statements and extant or submitted housing trajectories attached to Local Plans. The final report will benefit from a more comprehensive dataset and sample from a wider range of local planning authorities, at this stage the data in Table A2.4 only provides a general pattern/high-level indication of lead in times and build out rates from other authorities in Cambridgeshire. Table A2.4 in combination with other secondary sources (e.g. volume housebuilder annual reports and published research) has been used to inform the analysis at this interim stage and assist the Councils to understand what assumptions will need to be analysed further, and possibly amended, prior to publication of the final report.

Appendix 3 Historic Delivery Rates

Table A3.1: Greater Cambridge Historic Completions Data

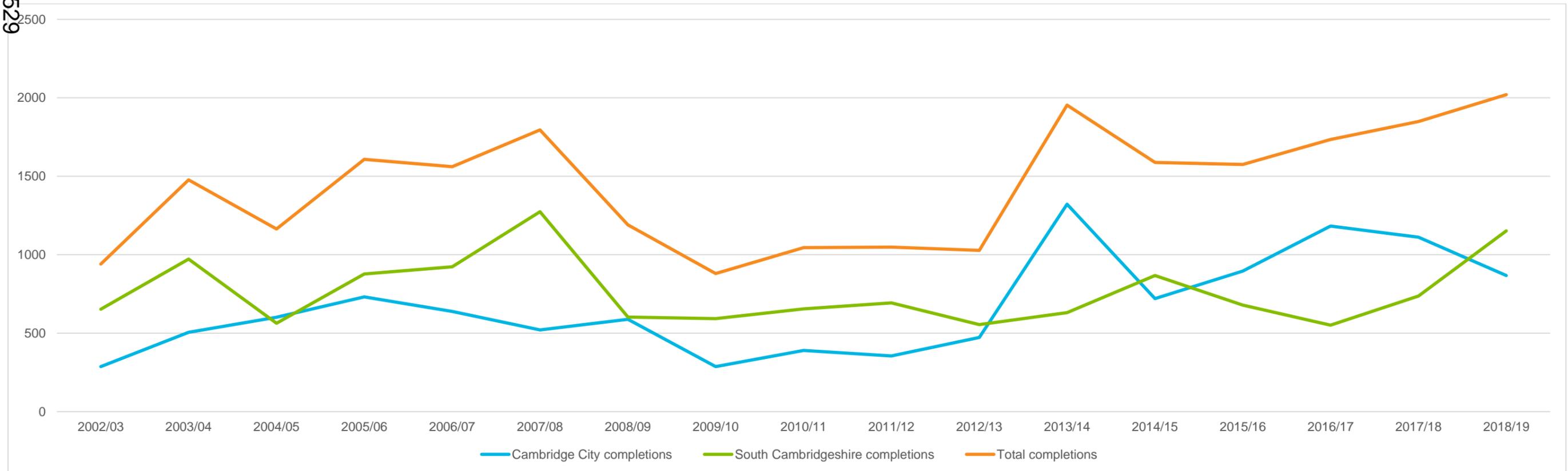
Completions	1999/2001*	2001/02**	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	Total	Average 2002/03-2018/19
Cambridge City completions	325	159	287	505	601	731	638	521	588	287	390	355	473	1,322	720	896	1,183	1,112	868	11,961	675
South Cambridgeshire completions	1,602	525	653	972	563	877	923	1,274	602	593	655	693	555	631	868	679	551	737	1,152	15,105	763
Total completions	1,927	684	940	1,477	1,164	1,608	1,561	1,795	1,190	880	1,045	1,048	1,028	1,953	1,588	1,575	1,734	1,849	2,020	27,066	1,439

Data taken from published Annual Monitoring Reports (AMRs). Cambridge City data 1999-2010/11 is from the Cambridge City 2017/18 AMR. South Cambridgeshire data 1999-2010/11 is from the South Cambridgeshire 2017/18 AMR

Data from 2011/12 onwards is from the Appendix 2 of the Greater Cambridge AMR 2018/19

Source data is only available for a two-year period (1.7.99 – 30.6.01)

* Nine month period as monitoring year was moved from July-June to April-March (1st April to 31st March each year)



Appendix 4 Stepped housing requirement case studies

All of the spatial options assume a “flat” housing requirement across the Joint Local Plan period; however, the Planning Practice Guidance allows for Local Plans to adopt a “stepped” housing requirement which varies during the plan period. The guidance⁹ on stepped requirements is presented below:

When is a stepped housing requirement appropriate for plan-making?

A stepped housing requirement may be appropriate where there is to be a significant change in the level of housing requirement between emerging and previous policies and / or where strategic sites will have a phased delivery or are likely to be delivered later in the plan period. Strategic policy-makers will need to identify the stepped requirement in strategic housing policy, and to set out evidence to support this approach, and not seek to unnecessarily delay meeting identified development needs. Stepped requirements will need to ensure that planned housing requirements are met fully within the plan period. In reviewing and revising policies, strategic policy-makers should ensure there is not continued delay in meeting identified development needs.

Where there is evidence to support a prioritisation of sites, local authorities may wish to identify priority sites which can be delivered earlier in the plan period, such as those on brownfield land and where there is supporting infrastructure in place e.g. transport hubs. These sites will provide additional flexibility and more certainty that authorities will be able to demonstrate a sufficient supply of deliverable sites against the housing requirement.

Paragraph: 021 Reference ID: 68-021-20190722

Revision date: 22 July 2019

In addition to the PPG on stepped housing requirements for the plan period, there is also the guidance on how to address past housing shortfalls during the plan period:

How can past shortfalls in housing completions against planned requirements be addressed?

Where shortfalls in housing completions have been identified against planned requirements, strategic policy-making authorities may consider what factors might have led to this and whether there are any measures that the authority can take, either alone or jointly with other authorities, which may counter the trend. Where the standard method for assessing local housing need is used as the starting point in forming the planned requirement for housing, Step 2 of the standard method factors in past under-delivery as part of the affordability ratio, so there is no requirement to specifically address under-delivery separately

⁹ <https://www.gov.uk/guidance/housing-supply-and-delivery>

when establishing the minimum annual local housing need figure. Under-delivery may need to be considered where the plan being prepared is part way through its proposed plan period, and delivery falls below the housing requirement level set out in the emerging relevant strategic policies for housing.

Where relevant, strategic policy-makers will need to consider the recommendations from the local authority's action plan prepared as a result of past under-delivery, as confirmed by the Housing Delivery Test.

The level of deficit or shortfall will need to be calculated from the base date of the adopted plan and should be added to the plan requirements for the next 5 year period (the Sedgefield approach), then the appropriate buffer should be applied. If a strategic policy-making authority wishes to deal with past under delivery over a longer period, then a case may be made as part of the plan-making and examination process rather than on a case by case basis on appeal.

Where strategic policy-making authorities are unable to address past shortfalls over a 5 year period due to their scale, they may need to reconsider their approach to bringing land forward and the assumptions which they make. For example, by considering developers' past performance on delivery; reducing the length of time a permission is valid; re-prioritising reserve sites which are 'ready to go'; delivering development directly or through arms' length organisations; or subdividing major sites where appropriate, and where it can be demonstrated that this would not be detrimental to the quality or deliverability of a scheme.

Paragraph: 031 Reference ID: 68-031-20190722

Revision date: 22 July 2019

In light of the PPG above it is possible to adopt a plan that varies the housing requirement over the plan period:

- Due to a step change in housing delivery;
- To accommodate the lead-in times of strategic sites which may come forward later in the plan period; and
- To address past under-delivery.

A number of case study examples are presented below to understand existing precedent in how Councils and Planning Inspectors have dealt with proposals for either stepped housing requirements and / or attempts to justify the use of the Liverpool method¹⁰ instead of the Sedgefield approach advocated in the PPG.

¹⁰ The Liverpool method seeks to deliver housing to meet a past shortfall over the entire plan period; whereas the Sedgefield method, endorsed in the Planning Practice Guidance, seeks to meet the shortfall in the first 5 years of the plan.

Cambridge Local Plan (adopted October 2018) and South Cambridgeshire Local Plan (adopted September 2018)

A Memorandum of Understanding was agreed between Cambridge City Council and South Cambridgeshire District Council in September 2014, which agreed that the housing trajectories for Cambridge and South Cambridgeshire, as updated each year in the Annual Monitoring Report, will be considered together for the purposes of phasing of housing delivery, including for calculating 5-year housing land supply in development management decisions that concern housing development.

The adopted plans state that this is consistent with the development sequence and spatial development strategy for Cambridge and South Cambridgeshire, and the phasing of housing delivery reflecting that strategy. As such, sites at the top of the development sequence in and on the edge of the urban area of Cambridge will deliver in the early and middle part of the plan period. Delivery in South Cambridgeshire will be greater in the middle and latter parts of the plan period, in particular as the fringe sites build out from the edge of Cambridge and move across the administrative boundary into South Cambridgeshire and as the new settlements come forward. There will also be some housing in larger villages early in the plan period.

The Councils have a record of providing significant levels of housing and have a significant level of identified housing supply. The development strategy for Cambridge and South Cambridgeshire has been carried forward from previous plans and includes two further new settlements. Under these circumstances the appropriate methodology for calculating five year housing land supply across the two authorities, in the extant Local Plans, is the Liverpool methodology. In response to historic levels of delivery, the appropriate buffer is 20%.

The trajectories rely on information about sites that have the potential to deliver dwellings over the 15 year plan period and beyond, taken from the strategic housing land availability assessments (SHLAA) and work on local plan allocation sites.

Appendix N (of the Cambridge Local Plan) and Appendix A (of the South Cambridgeshire Local Plan) set out the methodology for establishing housing land supply using this approach. The adopted plans included details of the housing land supply position as at November 2017. This showed that the Councils both individually and jointly could demonstrate a five year housing land supply based on the housing requirement included in the local plans, and that this was anticipated to continue for the remainder of the plan period. The housing supply data will be updated annually and published in the Annual Monitoring Report.

The Figure (below) shows past and projected completions for Cambridge and South Cambridgeshire over the plan period (2011/12 to 2030/31). In total, the plans must make provision for a minimum of 33,500 homes over this period, which is represented in the graph by the black 'plan' line (the combined annual housing requirement of 1,675 net homes). It also includes a 'manage' line, which shows the outstanding balance of completions relative to cumulative delivery.

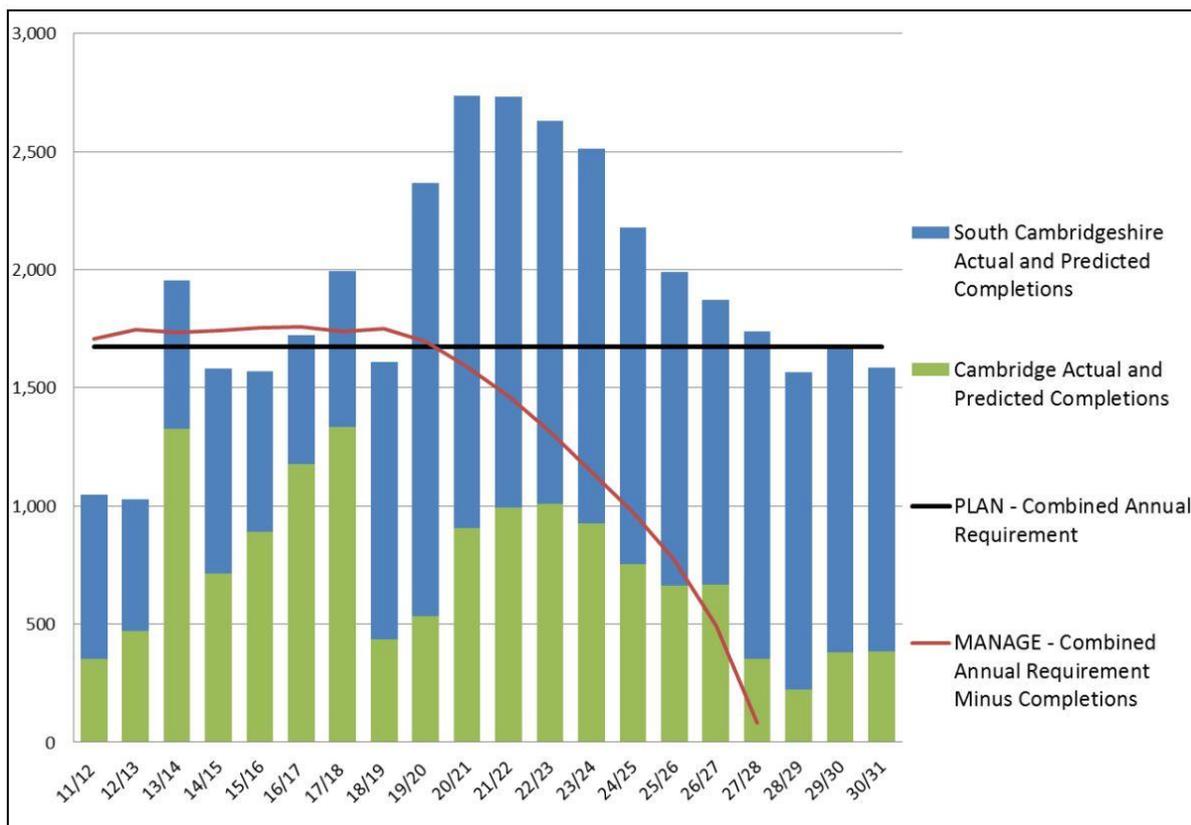


Figure A4.1: Greater Cambridge Housing Trajectory

The South Cambridgeshire Inspector commented that:

40. There has been a shortfall in housing delivery since the start of the plan period of 1,880 up to 31 March 2017. There are two generally recognised approaches to dealing with this undersupply: either within the next five years (known as the Sedgefield method), or over the remainder of the plan period (the Liverpool method). The PPG advises that local planning authorities should aim to deal with any undersupply within the first five years of the plan period ‘where possible’.

41. The Local Plan is reliant on two new settlements at Waterbeach and Bourn to deliver a significant proportion of the housing requirement. Both sites require significant investment in infrastructure and, realistically, may not start to deliver new housing until the mid or later years of the plan period. If the Sedgefield method were to be used it would almost certainly result in increased pressure to develop new housing in the rural areas which are a lower tier in the Sustainable Development Strategy. In the circumstances, the use of the Liverpool method is justified.

The Cambridge City Inspector commented that:

42. The foundation for the Cambridge Local Plan and the South Cambridgeshire Local Plan is the Sustainable Development Strategy Review. ... Although a joint plan has not been prepared, the two plans are both based on the SDSR. ... During the Examination the City Council, together with South Cambridgeshire District Council, prepared a Memorandum of Understanding (RD/Strat/350) which advocates the use of a joint housing trajectory for the two authorities. Overall, the use

of the joint trajectory will lead to a more sustainable pattern of development in accordance with the SDSR.

43. ... The use of the joint trajectory across the two plans will be a temporary measure until a joint local plan is prepared ... which will bring the situation fully into line with PPG. In all the circumstances, this is a reasonable approach.

44. Cambridge City does not have a shortfall in the delivery of new housing in the years 2011-2017. However, for the purposes of the joint trajectory, it is appropriate to deal with the shortfall over the remainder of the plan period, known as the Liverpool method. This is because of the reliance, in the South Cambridgeshire Local Plan, on the delivery of two new settlements which require significant investment in new infrastructure and, realistically, may not start to deliver new housing until the mid or later years of the plan period.

The South Cambridgeshire Inspector noted how the Local Plan strategy was influenced by the timing and lead in of the larger strategic sites:

90. The proposals for Northstowe and Cambourne West are well advanced and highly likely to make a significant contribution to meeting development needs, particularly for housing, during the plan period. The proposals for Waterbeach and Bourn Airfield raise a number of issues, particularly in relation to the provision of new infrastructure. Work is underway, however, to address these issues. The review of the Plan offers an opportunity to consider progress towards ensuring that the requirements of the policies can be met, particularly in relation to sustainable transport measures. On the basis of the evidence before us, we conclude that there is a reasonable prospect that the new settlements will deliver sustainable development to meet identified needs during the plan period.

Key points:

Two separate plans covered by a joint housing trajectory is a novel approach, albeit the Inspector recommends early plan reviews pending a future joint plan. Where the spatial strategy involves emerging new settlement options expected to come forward in the later years of the plan period it would be unreasonable to apply the Sedgefield method. The interaction and balance between urban extensions around Cambridge in the earlier part of the plan period and new settlement options in the latter part of the plan period justified the Liverpool method.

Vale of White Horse Local Plan Part 1 (adopted December 2016)¹¹

A “flat” housing requirement was proposed by Vale of White Horse District Council, but for monitoring purposes the Council proposed to split the housing requirement into two areas – the “Science Vale Ring Fence” and the rest of the district – where the “Science Vale Ring Fence” area is the main focus for a significant amount of new development during the plan period.

¹¹ <http://www.whitehorsedc.gov.uk/services-and-advice/planning-and-building/planning-policy/local-plan-2031>

In the Science Vale Ring Fence area, where a step-change in delivery is planned, the plan proposes to meet the shortfall that accrued since the Local Plan base date (with a 20% buffer) across the plan period (the Liverpool method), but in the rest of the plan area outside of the Science Vale Ring Fence the Sedgefield approach was proposed.

The Inspector's Report¹² stated "I am satisfied that it is appropriate for the Council to apply the 'Liverpool' method to calculation of supply in its "self-imposed" ring fence area and in the application of policy CP5 (giving a supply of 5.9 years within the ring fence even excluding sites 12 and 13), given that across the district as a whole a supply well in excess of 5 years exists when calculated on the more demanding Sedgefield method. Moreover, given that some concern has been raised about the possibility of saturation of the housing market in the South East Vale Sub-Area (where the Science Vale Ring Fence is located), it is questionable whether the number of dwellings required to provide a five year supply using the Sedgefield method could be delivered".

Key points:

Where a 20% buffer to address under-delivery is coupled with a step-change in delivery, and there is a risk that the market may be saturated in the first five years of the plan, the use of the Liverpool method can be justified.

Guildford Local Plan 2015-2034¹³ (adopted April 2019)

A stepped requirement was proposed in the submission plan to boost the early supply of housing in a district with "seriously poor and deteriorating housing affordability" but was abandoned during the examination following updated household projections which lowered the objectively assessed need for housing. Despite this reduction in housing need the proposed Liverpool method to addressing the shortfall since the start of the plan period was found sound. The Local Plan states at paragraph 4.1.15:

"National policy states that where possible the deficit accrued since the start of the plan period should be met within the first five years. Given the step change in housing requirement compared to past delivery rates which have been constrained by Green Belt policy, the accrued backlog at the date of adoption is significant. Whilst the plan includes numerous smaller sites capable of being delivered early in the plan period, there are a number of strategic sites that have longer lead in times. For these reasons, the backlog will be met over the plan period, using the Liverpool approach to calculating a rolling five year housing land supply rather than the Sedgefield approach."

Main Modifications were made to amend the housing requirement from the submitted stepped requirement to a "flat" requirement over the plan period, despite the plan delivering a step-change in delivery compared to the previous plan.

¹²

<http://www.whitehorsedc.gov.uk/sites/default/files/Vale%20of%20White%20Horse%20Local%20Plan%202031%20Part%201%20-%20Inspectors%20Report.pdf>

¹³ <https://www.guildford.gov.uk/localplan/2015-2034>

Additionally the Inspector¹⁴ found that a significant overallocation against the housing requirement (approximately 40% higher) was sound:

“The housing trajectory indicates that there is potential to deliver 14,602 homes over the plan period. The difference between this and the total housing requirement of 10,678 homes has been raised during the examination in the context of whether there are exceptional circumstances to release land from the Green Belt. This is dealt with in more detail under Issue 5. But purely in terms of housing supply, there is enough headroom to ensure that the Plan remains robust in the event that there is slippage in the delivery of housing from the allocated or committed sites, avoiding the need to allocate reserve sites; and enough headroom to provide for the anticipated level of unmet need from Woking, bearing in mind that there would be a continuing level of undersupply over the period of Woking’s newly reviewed plan. The overall plan provision would also provide more affordable housing and go further to address serious and deteriorating housing affordability.”

Key points:

Where sufficient deliverable capacity demonstrably exists it may not be possible to justify a stepped housing requirement and defer meeting housing needs to the end of the plan period. To ensure delivery against a challenging housing requirement within the plan period Guildford significantly over-allocated against the housing requirement (around 40%), providing sufficient “headroom” to mitigate against the risk of under-delivery should strategic sites not deliver as forecast in the trajectory.

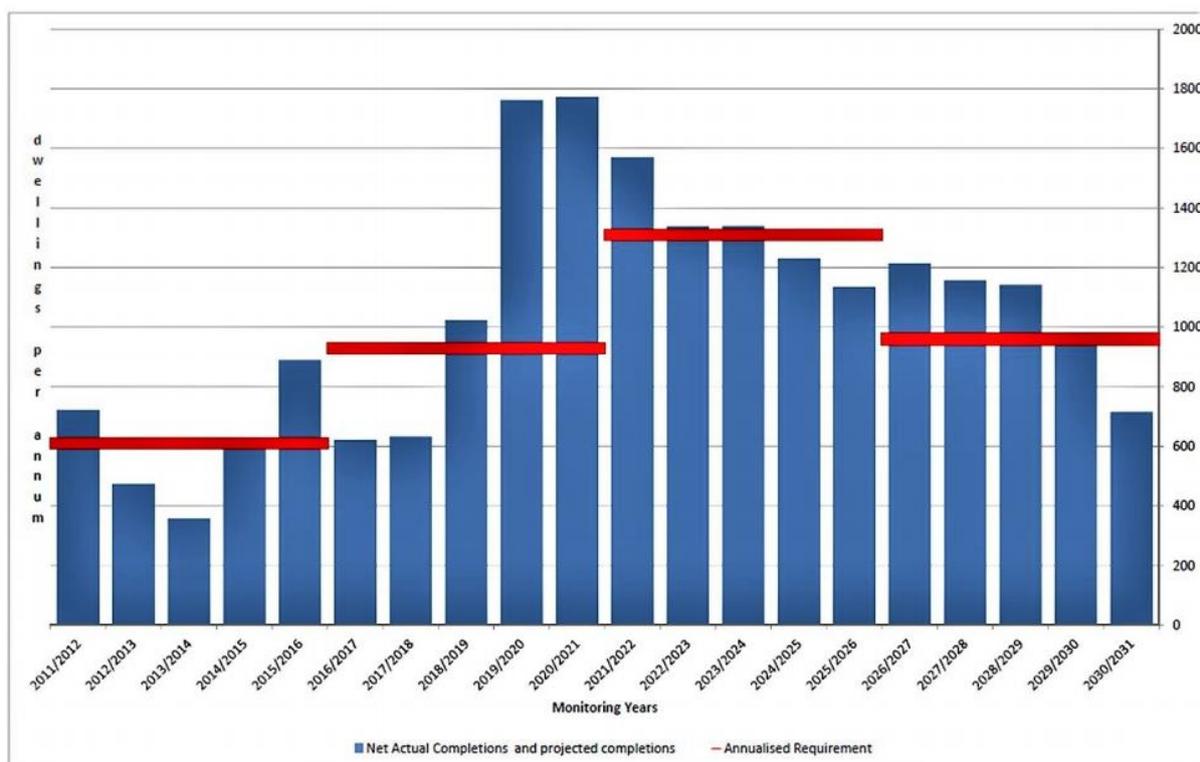
Arun Local Plan 2011-31 (adopted July 2018)¹⁵

The Local Plan’s housing supply is stepped across the plan period to match the planned delivery of strategic site allocations. There are targets for each five-year period in the plan, but these deliver the whole plan target of at least 20,000 homes by 2031. Due to persistent under-delivery the district’s five-year housing land supply calculation has a 20% buffer applied, but the Sedgefield approach was taken to meeting the shortfall.

¹⁴ https://www.guildford.gov.uk/media/29804/Appendix-1-The-Inspector-s-Report/pdf/Appendix_1_-_The_Inspector's_Report.pdf?m=636909200279400000

¹⁵ <https://www.arun.gov.uk/download.cfm?doc=docm93jijm4n12844.pdf&ver=12984>

Figure A4.2: Arun Local Plan Housing Trajectory



The Inspectors report¹⁶ states:

“Policy H SP1 includes a stepped approach to housing delivery increasing from 610 dpa between 2011/12 to 2015/16 to a peak of 1,310 dpa between 2020/21 to 2025/26. The LP proposes strategic allocations to bridge the considerable gap between existing supply and the large increase in the OAN. This will require a step change in delivery. It will not be straightforward to deliver the strategic sites which will require master-planning, related infrastructure and in some cases significant lead in times.

Delivering a greater range of sites within the LP, including smaller sites which would take less time to get off the ground, would have been one way of potentially avoiding a stepped delivery. However, the LP relies on NPs and a Non-Strategic Sites DPD to deliver smaller allocations. To widen the scope of the Plan at this stage would further delay adoption of an up-to-date LP and delivery of housing. Housing targets need to be realistic and deliverable. The stepped approach within Policy H SP1 is justified by the particular circumstances. However, in order to ensure that the policy is effective the 5 year periods need to be clear within the policy and this would be achieved by MM25.

Because a 610 dpa requirement would be applied during the 2011-16 period there is limited undersupply from the early years of the LP but the shortfall should be dealt with by the Sedgfield method. In order to make the approach to calculating the 5 year supply clear to the decision maker, thus making the LP effective, an explanation should be included which would be achieved by MM22. Based on up to date

¹⁶ <https://www.arun.gov.uk/download.cfm?doc=docm93jijm4n12488.pdf&ver=12506>

figures and applying the stepped delivery, a 20% buffer and the Sedgefield method to making up the shortfall, supply was 5.3 years at 31 March 2017.”

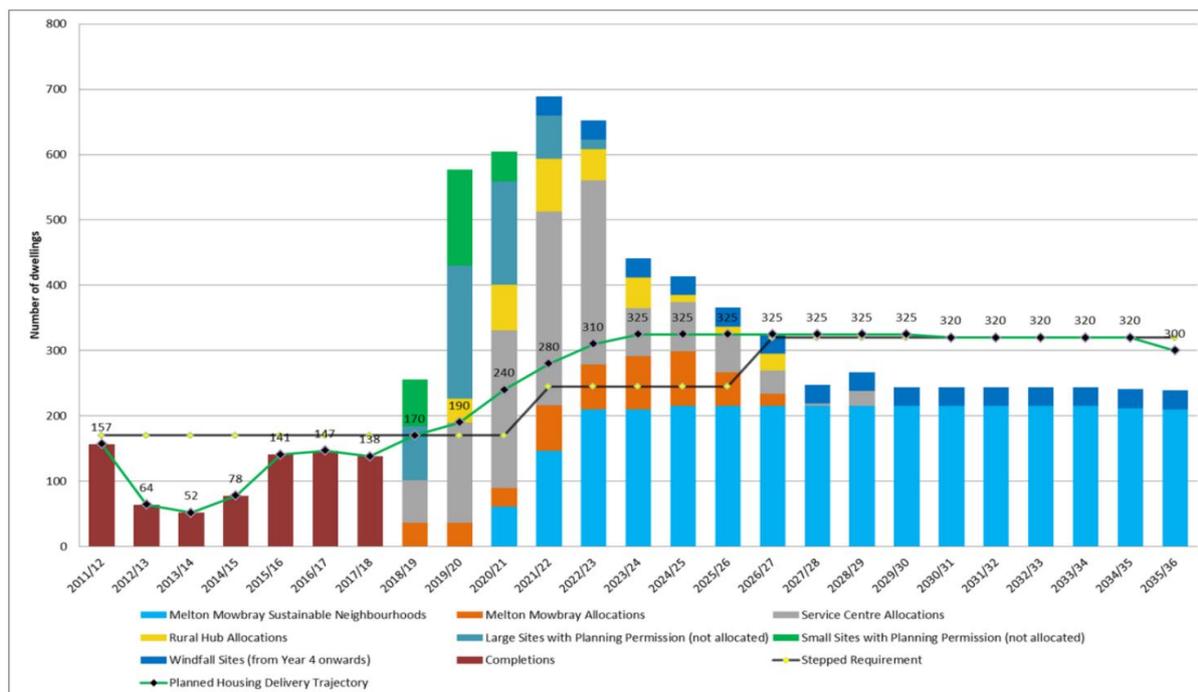
Key points:

The Arun plan was deemed to be delivering a “step change in delivery” yet it was still possible to demonstrate a five-year housing land supply with the Sedgefield method by using a stepped requirement. The nature of the strategic sites, the commitment to allocate non-strategic sites that would deliver immediately after plan adoption, and the Council’s agreement to invite planning applications on policy compliant HELAA sites and the first phases of some of the strategic allocations all convinced the Inspector that a stepped requirement was appropriate in the circumstances. The plan retrospectively applied a lower stepped housing requirement figure to the period prior to plan adoption which reduced the level of the shortfall, and subsequently the Council was able to use the Sedgefield method to meet that lower shortfall in the first five years of the plan.

Melton Local Plan (adopted 2018)¹⁷

Net completions from the beginning of the plan period to plan adoption (2011/12-2017/18) were recorded at an average of 111 dwellings per year, compared to the average annual requirement of 245 per annum. The trajectory is heavily reliant on two sustainable neighbourhoods north and south of Melton Mowbray which would take until 2022/23 to deliver significant numbers at full capacity. To reflect these matters, the annual housing requirement is 170dpa from 2011/12 to 2020/21, 245dpa 2021/22 to 2025/26, and 320dpa from 2026/27 onwards, as shown in **Figure A4.3** below.

Figure A4.3: Melton Local Plan Housing Trajectory



¹⁷ https://40598510-d83b-48fe-b4fd-63400f103e39.filesusr.com/ugd/2778e0_ec19e0e3c5184e2091477ee65acd3bd1.pdf

The Melton Inspectors Report¹⁸ acknowledges that the long-term average housing delivery in the Borough (1994-2016) is 170dpa, and that annual completions had only exceeded 245 dwellings in three of the past 23 years, therefore the plan was seeking a step change in delivery. The Inspectors Report states:

“In proposing the requirement figure of 6125, the Council has considered deliverability, including the implications for growth of the housing stock and comparison with completion rates in recent decades. In regard to the former, an increase of 6125 dwellings implies an average annual growth rate of 1% in the stock of dwellings. This is slightly above the rate of stock growth (0.8- 0.9%) that the White Paper: Fixing the Broken Housing Market seeks nationally. Since 2001, the Borough has averaged 0.8% growth per year, although in other districts in the HMA and in districts elsewhere that are said to be comparable to Melton, growth rates above 1% have been achieved in the same period. Overall, this lends support to the ambition for 6125 dwellings.

However, there is no convincing evidence that the uplift in housing completions that would be required to meet an average requirement of 245dpa from the start of the plan period is likely to be delivered in the short term. Taking account of the shortfall in delivery that has accrued against the requirement of 245dpa since 2011, net completions of 434dpa would be necessary if all of the shortfall were to be addressed within the next 5 years. Or if the shortfall were to be spread over the remainder of the Plan period (the Liverpool approach) as the submitted Plan proposes, it would result in an average requirement of 298dpa.

I am not aware of any precedent in the Borough for a delivery rate of 434dpa, and so far as 298dpa is concerned, net annual completions have exceeded 245 dwellings in only 3 of the past 23 years, the last peak being in 2008/2009, which was coterminous with an exceptionally favourable set of factors that influenced housing completions. Since then, completions dropped to a low of 52 in 2013/14 and have averaged only 142dpa from 2015 to March 2018. In contrast, the Plan is clearly aspirational and ambitious, and it provides for a very significant increase in the supply of deliverable housing land compared with the position earlier in this decade. Even so, the surplus in the supply of deliverable sites that has been identified (see Issue 5) is not an adequate reason to set a housing target for the Borough that would be excessively demanding in the short term. The market will need time to adjust to the Plan’s proposals for a step change in growth, and the economic stimulus arising from the development of the sustainable neighbourhoods at Melton Mowbray and the significant improvement in transport infrastructure through the MMTS and MMDR will take time to come forward.

For the above reasons, and notwithstanding the views of developers and estate agents on this matter, I have concluded that it would be beyond the bounds of realism to require average completions to rise to 298dpa in the short term. It would also have the potential to undermine the spatial strategy, because there would be a significant risk of the

¹⁸ https://40598510-d83b-48fe-b4fd-63400f103e39.filesusr.com/ugd/c2f881_0a3d8c450c7c4b8798fa6175c56c639b.pdf

Council falling short against the annual housing delivery test, leading to pressures for development of unallocated and less sustainable sites across the Borough, particularly in the rural areas.

In these circumstances, it is justified and consistent with national planning policy to consider how the overall target of 6125 dwellings should be stepped over the remainder of the Plan period, to enable a more gradual increase in the annual level of completions that would be required. A number of alternative options were explored during the examination. In this light I have concluded that a 3-step requirement for average delivery rates of 170dpa 2011-2021, 245dpa 2021-2026, and 320dpa 2026-2036 would be aspirational and ambitious, while offering a reasonable prospect of being delivered. Accordingly, Policy SS2, the supporting text and the monitoring framework should be modified by MM1 to set this out. As Figure 6 of the MM shows, planned delivery increases gradually from 170dpa in 2018/19 to 310dpa in 2022/2023, clearly enabling a very significant increase in housing supply.”

Key points:

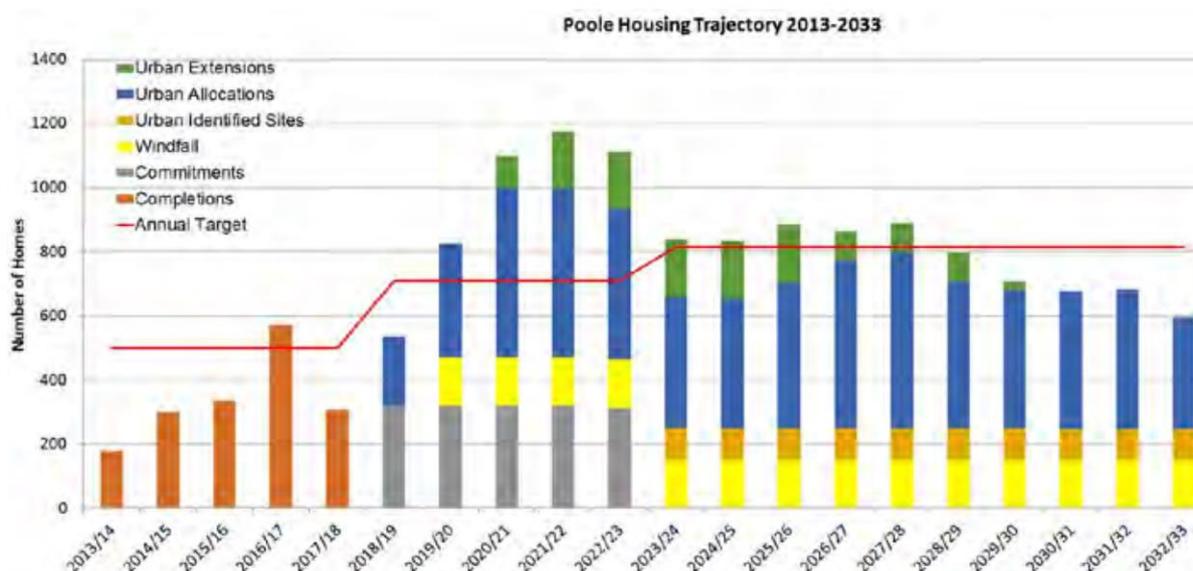
Analysis of historic annual completion figures is important to understand if a step change in delivery is taking place. If the short-term annual housing requirement is so challenging that there is a risk that planning by appeal would occur and/or the Housing Delivery Test would be failed, this can be a justification for a stepped requirement and the use of the Liverpool method. Allowing sufficient time for infrastructure to be delivered can be a justification for a stepped requirement, as can allowing the market time to adjust to a step change in housing delivery and build capacity. The views of developers and estate agents can help Inspectors inform their view on this.

Poole Local Plan¹⁹ (adopted November 2018)

The Poole Local Plan makes provision for a step-change in housing delivery and utilises the Liverpool method for addressing the shortfall that accrued during the period 2013-2018 before the plan was adopted. Against an OAN of 710dpa the housing requirement increases from 500dpa over the period 2013-2018, to 710dpa for the period 2018-2023, to 815dpa over the period 2023-2033 with a requirement for an early review by 2023. The ability to release additional sites to provide short-term delivery is limited by Green Belt and Habitats Regulations issues regarding a Natural England review over the effectiveness of additional SANG provision.

¹⁹ <https://www.poole.gov.uk/resources/assets/attachment/full/0/47235.pdf>

Figure A4. 4: Poole Local Plan Housing Trajectory



The Inspectors Report²⁰ states that “without phasing of the requirement, the number of dwellings to be completed in the period to 2023 would be only 4% less than the likely to be available SANGS capacity²¹”. The Inspector noted that the Council and developers agreed a realistic deliverable supply of 5,053 dwellings within the next five years. With a 20% buffer this would have resulted in a five-year housing land supply of 4.8 years under the Sedgefield approach, or 5.5 years under the Liverpool approach. The Inspector stated that

“to maintain a five year supply of land, it would not be possible to use the ‘Sedgefield’ approach without allocating more sites for development. As already indicated, almost certainly these would need to be sites currently in the Green Belt and I am not persuaded that the exceptional circumstances necessary to remove the sites from the Green Belt would exist simply to ensure a five year supply of housing land in the district using the ‘Sedgefield’ approach. In reaching this conclusion I have also borne in mind that, even if deleted from the Green Belt and allocated for housing, there would not be an absolute guarantee that sufficient housing would be built on them to meet the five year requirement. Consequently, the use of the ‘Liverpool’ approach to recovering past shortfall in delivery is justified in Poole and for the plan to be effective MM7 is necessary to make this point clear. On this basis it is realistic that on adoption of the plan there will be a supply of deliverable housing land exceeding the five year requirement and that this situation will be maintained throughout the plan period.”

Key points:

The Poole Local Plan maximises delivery early in the plan period but the evidence demonstrates that any further short-term delivery to deliver a five-year housing land

²⁰ <https://www.poole.gov.uk/resources/assets/attachment/full/0/45776.pdf>

²¹ Whilst the period of the proposed 500 dpa requirement has now passed, retrospectively increasing the requirement for the 2013-2018 period to 710 dpa would (having regard to actual delivery in the 2013-2018 period and the need to ‘recover’ the resulting shortfall in delivery) have the effect of increasing the actual requirement in the 2018-2023 period well above the average annual requirement of 710 dpa.

supply under the Sedgefield method would be unacceptable in terms of Habitats Regulations and Green Belt policy. Under these circumstances it is appropriate to defer housing delivery until later in the plan period following a review of Natural England SANG mitigation effectiveness.

West Oxfordshire Local Plan 2031 (adopted September 2018)

The West Oxfordshire Local Plan housing trajectory²² provides for a step change in delivery from 365dpa as required under the South East Plan to 550dpa at the beginning of the new Local Plan before stepping up to 1,125 dpa by the end of the plan period. The highest historic delivery record for a single year since 1990 is 865 dwellings in 2007/08.

To address the significant shortfall since the base date of the Local Plan (2011) the Council proposed using the ‘Liverpool’ method. The Council also suggested a stepped housing requirement to help meet the OAN and unmet need from Oxford City, stating that insufficient capacity was identified through the SHLAA and Local Plan to deliver a 5-year supply under the Sedgefield approach which could only be achieved by releasing a large number of sites that were assessed by the Council as being unsuitable for new housing.

The Inspector agreed to make a main modification to the Local Plan to apply a lower initial housing requirement of 550 dwellings per year from 2011/12 – 2020/21, thereafter including an additional 275 homes per year for Oxford’s unmet need and gradually increasing up to a total combined annual requirement of 1,125 homes per year.

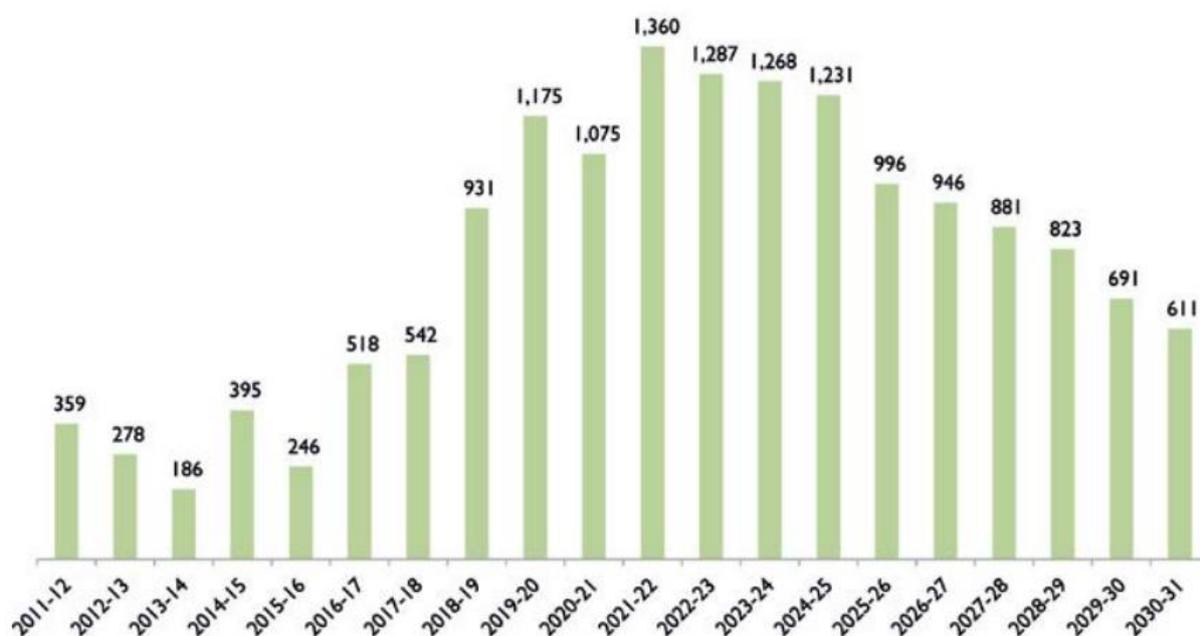
The Inspectors Report²³ states that *“allocating more houses in the plan in an attempt to achieve a five year supply against the plan’s annual average housing requirement figure would be likely to fail and cannot, therefore, be considered to be a sound approach. Moreover, it is the application of the 20% buffer which gives rise to these housing supply difficulties faced by the Council.”*

Supporting the stepped requirement, the Inspector stated “A stepped trajectory would reflect the likely reality of delivery of the sites already included in the plan and, in particular, the strategic development areas (SDAs). Whilst challenging, the 1,125 dpa requirement for the last years of the plan period is realistic in the context of the highest annual delivery since 1990 of 865 dwellings. And, it is clearly much more realistic than the around 2,000 dpa delivery which would be required in the coming five years if the ‘Sedgefield’ approach to addressing shortfall in delivery were applied and no “stepping” of the housing requirement were to take place”.

²² <https://www.westoxon.gov.uk/media/feyimpen/local-plan.pdf>

²³ <https://www.westoxon.gov.uk/media/ckibbnn2/west-oxfordshire-inspectors-report.pdf>

Figure A4.5: West Oxfordshire Local Plan Housing Trajectory



Key Points:

A stepped requirement and the Liverpool method was justified in light of a lack of suitable deliverable supply and the plan seeking to deliver a step-change in delivery including addressing unmet needs from a neighbouring authority. The plan maximises delivery from suitable sites in the first 5 years, however evidence was provided to demonstrate that this was not sufficient to meet housing need in the first few years of the plan period.

Oxford City Local Plan 2016-36²⁴ (adopted June 2020)

The Local Plan sets a capacity-based housing requirement and exports unmet needs to adjacent districts agreed under the Oxfordshire Memorandum of Cooperation. The stepped trajectory reflects the lead-in times and build-out rates of the available supply and addresses shortfall accrued since the base date of the plan. The stepped requirement and the capacity-based requirement of the plan was agreed through a Main Modification during the examination process. The capacity-based requirement was established in light of updated HELAA work, including a windfall allowance, and a housing trajectory.

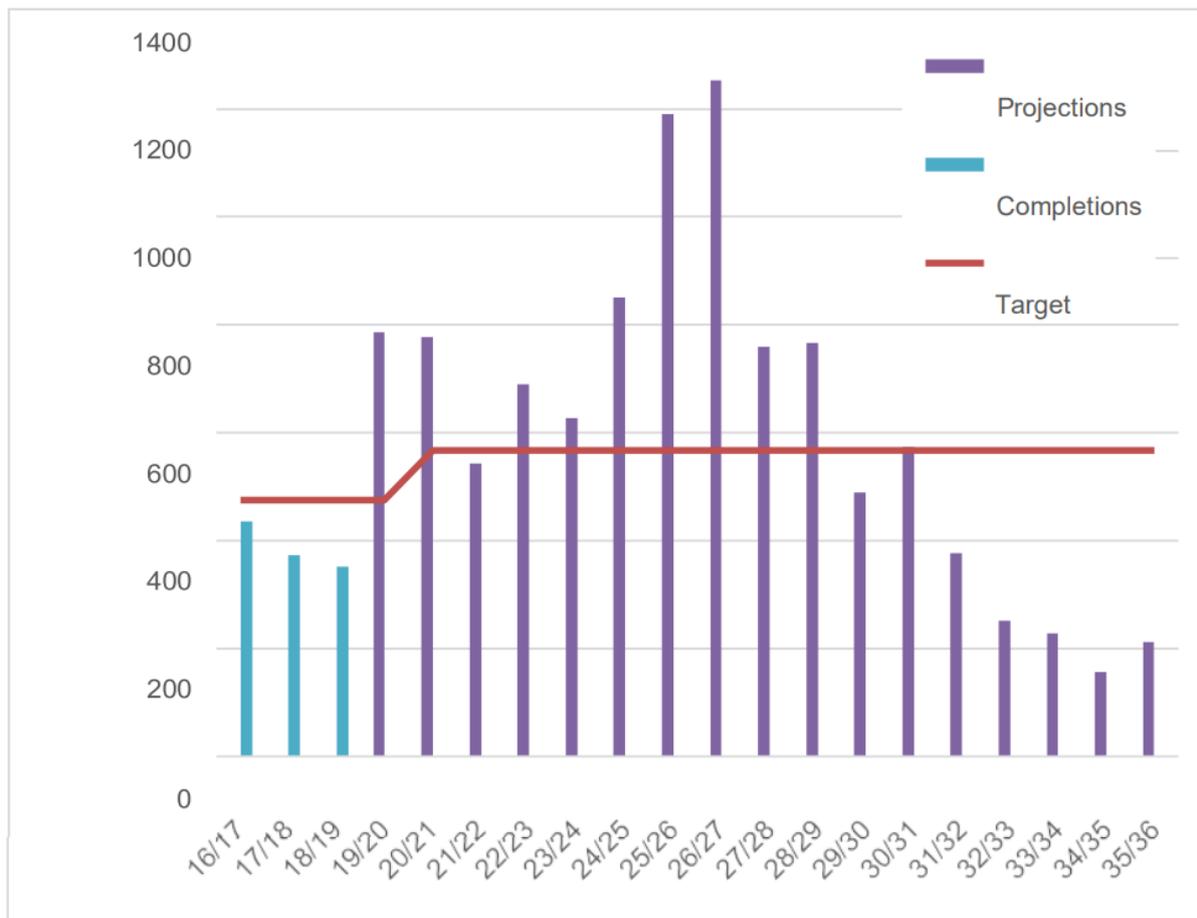
The Inspector’s Report²⁵ states “There is no point in establishing a trajectory which would render the relevant housing policies in the plan immediately out-of-date within the terms of paragraph 11 of the NPPF. Consequently, the Council propose a housing requirement of 475 dpa in the first five years of the plan period (2016/17 to 2020/21) stepping up to 567dpa for the remainder of the plan. This is governed by the requirement to meet the housing requirement within the plan period; exceed the previous Core Strategy housing requirement of 400dpa in any given year; and to deliver a housing land supply of six years or more to ensure flexibility. From 2020/21

²⁴ https://www.oxford.gov.uk/downloads/file/7316/oxford_local_plan_2036_plain_text

²⁵ https://www.oxford.gov.uk/downloads/file/7288/inspectors_report_-_oxford_local_plan_2036

it would provide 6.2 years' supply, rising to 9.8 years in 2024/25. This stepped housing requirement is a reflection of the reality of housing delivery in the constrained conditions of Oxford and is required to ensure that the plan does not fail through an inability to meet the requirement for a 5 year housing land supply. MM6 introduces a stepped trajectory of 475 dpa from 2016/17 to 2020/21 followed by an increase to 567 dpa from 2021/22 to 2035/36 in recognition of the time passed since the start of the plan period and the need to increase delivery. The stepped trajectory reflects the reality of expected delivery rates. The modification is necessary to ensure that the plan is up to date and incorporates realistic delivery rates.”

Figure A4.6: Oxford City Council Housing Trajectory



Key points:

A stepped requirement can be justified where it can be demonstrated that there are no further additional sources of supply that can be delivered in the first five years of the plan, and without a stepped requirement the Council would not be able to demonstrate a five-year housing land supply at plan adoption.

Thanet Local Plan 2031²⁶ (adopted July 2020)

The Council is taking a stepped approach to delivering the housing target with a lower requirement set for the first five years and with higher requirements for the

²⁶ <https://democracy.thanet.gov.uk/documents/s69015/Annex%203%20-%20Thanet%20Local%20Plan%20with%20appendices%20March%202020.pdf>

following 10 years to deliver the total housing requirement for the Plan period. The Local Plan states:

“Thanet has an emergent development market, but there is a real possibility that driving high levels of requirement in the early years might undermine the viability of some sites, or result in lowered viability, which again could affect the delivery of services and infrastructure, as well as affordable housing. Taking a “stepped approach” to meeting the housing target means that the Council can ensure that developments are supported by the necessary services and infrastructure, and reflects the expected trajectory of housing delivery from the strategic sites”.

The Inspectors Report²⁷ recognises that delivering the required number of new homes in Thanet “is going to require a demonstrable step-change in delivery”. The Inspectors Report states:

“In Thanet, housing completions have only exceeded 400 dpa once since 2011/12. Due to the limited number of completions since the start of the plan period, and the need to address any under-supply, the submitted Plan already requires the delivery of 4,500 dwellings between 2016 and 2021 (or 900 dpa). By the end of the Plan period it increases further to 5,585 dwellings (or 1,117 dpa). Following adoption of the existing Local Plan in 2006, delivery in Thanet was much stronger. 726 dwellings were built in 2009/10 and 889 dwellings in 2010/11. Even so, meeting housing needs is going to require a level of housebuilding not recently achieved in Thanet.”

The stepped trajectory is justified in light of the lead-in times of the strategic sites, with around 75% of the planned supply coming from strategic sites “which require significant new infrastructure” and are “expected to start delivering the bulk of new housing in the second half of the plan period”. The strategic sites are required to provide the critical mass necessary to deliver the required infrastructure for Thanet, such as new schools, healthcare and the ‘Inner Circuit’ relief road.

Key points:

Where a spatial strategy that concentrates delivery at a small number of strategic scale allocations is justified in order to deliver necessary infrastructure alongside a step-change in housing delivery, it is possible to justify a stepped housing requirement to allow the sites sufficient time to come forward. Such an approach is permissible to allow capacity to increase within the development industry in the local area.

Conclusions for the Greater Cambridge Local Plan

The above case studies provide useful examples of where other Councils have managed to justify the use of stepped housing requirements and/or the Liverpool method for addressing past under-delivery across the plan period.

It should be noted that all of the above plans were examined under the 2012 NPPF and before the Standard Method was introduced through the 2019 NPPF and

²⁷ <https://www.thanet.gov.uk/wp-content/uploads/2020/04/Thanet-Local-Plan-Report-Final-22.03.20-1.pdf>

updated PPG. As a result they were based on SHMA OAN requirements in accordance with the PPG at the time which resulted in a substantial time lag between the base date of the SHMA (and Local Plan) and plan adoption – in some cases 7 or 8 years – that subsequently created a large window for a shortfall to arise. Under the PPG the shortfall should be addressed within the first 5 years, but often because of combination of the size of the shortfall, the significant increase in housing requirement and the lengthy lead-in times for strategic sites to come forward, LPAs have been able to justify the adoption of a stepped housing requirement and/or the use of the Liverpool method for meeting the shortfall.

Under the 2019 NPPF the approach to assessed housing need has changed to the Standard Method, where under-delivery is factored into the Local Housing Need figure through the affordability adjustment²⁸. Whilst the local housing need figure should be calculated at the start of the plan-making process and the figure should be kept under review²⁹, there is no requirement under the Standard Method for Local Plans to make up for under-delivery. This means that the base date of the plan can be set later in the plan-making process which means there is less of a chance for a significant shortfall to accrue between the Local Plan base date and the adoption date. The corollary of this is that it will be harder under the Standard Method to be able to justify the use of the Liverpool method to meeting shortfall across the plan period, as the shortfall will be smaller. This leaves the other two factors mentioned in the PPG – the size of the increase in housing requirement, and the length of lead-in times for strategic sites to come forward – as the key factors that can justify the use of a stepped housing requirement.

Under the PPG to support a stepped housing requirement there needs to be “evidence to support the approach” and the Councils should “not seek to unnecessarily delay meeting identified development needs”. As the case study examples demonstrate evidence in this regard can include a lack of deliverable land supply in the first five years, sustainability appraisal evidence showing that sites that could come forward at the beginning of the plan period are unsustainable, or enabling infrastructure is required to be in place before development can take place. The HELAA, Sustainability Appraisal and Infrastructure Delivery Plan evidence will be key in informing the Council’s decision-making in this regard.

²⁸ The PPG states “The affordability adjustment is applied to take account of past under-delivery. The standard method identifies the minimum uplift that will be required and therefore it is not a requirement to specifically address under-delivery separately.” Paragraph: 011 Reference ID: 2a-011-20190220

²⁹ Planning Practice Guidance Paragraph: 008 Reference ID: 2a-008-20190220

Appendix 5 Literature Review

Table A5.1: Summary of Secondary Sources

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
Housing Delivery on Strategic Sites. Research Study for Countryside Properties. (Colin Buchanan, December 2005)	5 years - All strategic sites 4.7 years - 1,000 to 1,999 dwellings 5 years - 2,000 to 2,999 dwellings 5.5 years - 3,000 dwellings or more Based on average time between application submission and first build year (Table 1) and trajectory assumptions (Table 7)	188 dpa - All strategic sites 101 dpa / 200 dpa - 1,000 to 1,999 dwellings 189 dpa / 250 dpa - 2,000 to 2,999 dwellings 330 dpa / 350 dpa - 3,000 dwellings or more Based on average of 36 strategic sites (Table 1) and trajectory assumptions (Table 7)	The contribution of strategic sites to housing stock is relatively constant whereas the contribution of small sites (less than 1,000 dwellings) fluctuates widely. This shows that strategic sites provide a small but important base contribution to the housing stock per annum. The overall rate of development that has historically been achieved from strategic sites overall is only as high as 200 dwellings per annum for individual sites. This is the average that has been achieved since 1980 in the region [East of England]. Sites of between 1,000 and 1,999 dwellings have made a limited contribution towards overall development and have also been developed at much slower rates than larger developments. This may be reflective of the scale of investment required to service larger developments and the ability of larger developments (comprising 2,000 of more dwellings) to offset these costs, or to secure better investment.
The Callcutt Review of housebuilding delivery (DCLG, November 2007)	25.1 months – pre-application process 6 months – planning consent given (after planning application submitted) 10.2 months – consent in legally implementable form (after planning application submitted) 17.2 months – start of construction work (after planning application submitted) Based on 150+ units schemes Source: London Development Research, unpublished research, 2007 using data from sources including the GLA and Estates Gazette	-	It is almost an article of faith, universally held by housebuilders, that there is a limit of 35-50 homes which can be sold from one outlet in a single year; to achieve more rapid build-out requires prices to be reduced. Rates of sale on apartments are higher. Building out at a faster rate does not yield sufficiently larger early returns to offset the cost of discounts plus other marketing and management costs. There is no theory behind this, but rather the housebuilders’ observation and experience of how to make the best returns over time, balancing volume against price and risk. We believe that it partly reflects the capacity of local housing markets to absorb new supply, and partly the ability of local sales offices to process business. Overall, there is little reason to go for volume over price, particularly when the supply of fresh land is limited. Reflecting this rule of thumb, primary purchasers of major sites often split them up into smaller parcels for sale (or swap) to other builders. Each builder then opens a local office, with the result that build-out rates across the site as a whole are significantly increased, though not in full proportion to the number of outlets. The primary purchaser will obviously seek to obtain sufficient value now from selling or swapping land to offset future value forgone. We recommend that, in disposing of large sites for housing development, the Government and its agencies should wherever possible either break up a proportion of each site into smaller parcels for separate disposal or stipulate as a condition of sale that the primary purchaser should do so. This should both underpin faster build-out by creating opportunities for more sales outlets and enable smaller housebuilders to compete for their share of supply.
Factors Affecting Housing Build-out Rates (CLG/ University of Glasgow, February 2008)		Most builders generally appear to set a target of between 40 and 80 units built and sold from each outlet annually. 59/outlet/year - Average optimal sales rate (Greenfield units) 67/outlet/year - Average optimal sales rate (Brownfield apartments)	Over what distance does ‘competitor surveillance’ of rival developments extend? We asked the 18 housebuilders surveyed nationally to specify the typical distance in miles to what they would normally consider the furthest likely competitor for seven different types of development. The results show a clear distinction between urban and greenfield sites. It is apparent that within cities, housebuilders generally see potential competition as contained within a distance of two to four miles as compared with six to eight at greenfield locations. In both cases, this suggests that housebuilders may define local housing markets more

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Source

Lead in Times (variable metrics)

Build Out Rates / Outlets

Findings Summary (as taken set out in the source)

Based on Table 4: Imputed Annual Optimal Sales Rates (sample of 18 survey responses)

narrowly than in previous research.

Optimal annual rate	All respondents	Volume developers	Medium-sized developers	Smaller developers
Greenfield housing	58.61	55.83	45.71	80.00
Brownfield apartments	67.18	81.33	54.14	68.75

Development Type	Miles	
	Mean	SD
Apartments in outer London	2.40	2.79
Apartments in outer London	3.88	3.48
Apartments in major provincial city centres	2.73	2.48
Apartments within major provincial cities but beyond the city centre	3.37	2.54
Houses on greenfield sites on the edge of major provincial cities	6.00	3.96
Houses on greenfield sites on the edge of small and medium-sized towns	5.62	2.78
Houses on greenfield sites in mainly rural areas	7.97	4.09

Within this distance, developers keep a continuous watch on potentially competing sites to ensure that their own developments are advantageously placed in the local market. All 18 housebuilders collected data on three important aspects of rival developments, namely:

- Total house/unit production
- Subdivision by house/unit type
- Selling prices

Where land is in short supply and competition between developers is intense, housebuilders must assume the highest possible sale prices in order to make winning bids for land. Such bids are viable only because the release of land is restricted in aggregate terms by the planning system, while the release of houses is managed on a site-by-site basis by builders themselves to achieve the target sales rates underpinning earlier bids for land. Government policy and industry practice have thus combined to encourage developer caution about the ability of local housing markets to ‘absorb’ new-build supply. This finds expression in unambitious build-out rates.

Developers with cautious build-rate assumptions will benefit from an advantage in terms of the price they can offer landowners assuming that house prices are rising faster than construction costs and the cost of borrowing. If housing demand changes after the point of site acquisition, most developers are generally reluctant to alter their planned production rates. Whether demand rises or falls, most prefer to alter prices or incentives. Companies generally see production rates as a marginal factor that cannot be varied very far from what was originally planned.

The typical strategy of most companies who participated in the research was to aim for a build and sales rate of about one unit per week on greenfield sites and slightly higher than

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
Homebuilding in the UK. A market study. (Office for Fair Trading, September 2008)	-	-	<p>this on brownfield sites. Although this confirms anecdotal evidence, it should certainly not be taken as a 'natural build-out rate'. Rather it reflects the particular institutional structure of the British housebuilding industry in which fierce competition for land then requires controlled and phased release of new development to ensure that the ambitious development values necessary to capture land in the first place are actually achieved when new homes are eventually sold.</p> <p>If local planning authorities were deliberately to allocate a range of housing sites, some large and some small, this would help accelerate sales and production by creating more outlets, even for the same housing numbers. ... However, such a policy will be effective only where careful thought is given to allocate sites that appeal to different sub-markets, rather than merely replicate the same product at another location.</p> <p>Build out rates, or absorption rates as they are known, are dictated by local market conditions and not by the maximum technical speed at which homes can be built. Homebuilders deliver new homes as fast as they can sell them, not as fast as they can build them.</p> <p>Taking land through the planning system can take many years, so rapidly expanding homebuilders will often merge with other homebuilders to gain access to a greater range of sites. Acquisition of a greater number of sites becomes a critical part of these fast growing homebuilders' expansion strategies. It is far easier to sell 100 homes a year from four different sites (because of the absorption rates on each site) than it is to sell 100 homes from a single site. Consequently, for a homebuilder looking to grow rapidly the key is to acquire more sites rather than expand production on the sites that it already has. This imperative drives many of the mergers and takeovers. We reviewed six OFT [Office for Fair Trading] decisions made between 2001 and 2007 regarding mergers between homebuilders, all of which were approved. In most cases access to landbanks were cited as part of the rationale for the mergers. ... This increased merger activity leads to increased concentration, in particular among larger homebuilders.</p> <p>Small homebuilders and individuals building their own homes will build on smaller sites which the larger homebuilders will not take on. Without the smaller homebuilders and self-build some sites would simply remain undeveloped. The UK lags behind other countries in the number of self-build projects. In terms of ensuring that land which is already available for homebuilding is used efficiently and output maximised, it is important to maintain a vibrant small and self-build sector.</p> <p>Again with a view to maximising output, we would recommend that local authorities should consider the possibility that group self-build could deliver a healthy proportion of new housing. Local authorities should be encouraged to make publicly owned land available to an 'enabler' who will control the overall design of the site, divide it into suitable plots and plan necessary infrastructure allowing people building their own homes to develop these plots.</p>
Beyond Eco-towns. Applying the Lessons from Europe. Report and Conclusions (PRP Architects Ltd, URBED and Design for Homes, October 2008)	-	-	<p>Hammarby Sjöstad's rapid build-out rates are some ten times faster than in Greenwich Millennium Village, which is in a similar location. This highlights the importance of a strong masterplan that avoids over-dependence on the private sector and sales rates. The scheme is for 11,000 dwellings in an area of 200 hectares, with a tram extension providing the central spine to the 'fishbone' layout. While it took six years before the masterplan was submitted and approved, infrastructure went in earlier; the first phase was completed four years later, and five years after that the scheme was halfway complete, a rate of some 550 homes a year or ten a week. All homes are linked to the municipality's district heating</p>

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
			<p>system, and there is a high quality 'water cycle' that recovers waste heat, and other useful products from sewage.</p> <p>We were particularly struck by the fact that build-out and occupation rates are much faster than in the UK, allowing communities to form and mature over a relatively short time. For example, in Kronsberg, it has been possible to complete 1,000 homes a year and in Hammarby, over 800, whereas in Britain, volume housebuilders are only able to sell one house a week from an individual site, an issue that the Callcut Review thought required further investigation.</p> <p>There is a much larger private rented market and intermediate innovations, like cooperative housing, which reduces the development risk and enables communities to grow much more rapidly (hence allowing households to try out an area before committing themselves to purchasing a house).</p>
<p>Notes on Build out rates from Strategic Sites (Homes & Communities Agency, July 2013)</p>	<p>-</p>	<p>150-300 dpa - Smaller strategic sites (<4,000 units) 300-500 dpa - Very largest sites (>4,000 units) 30/outlet/year - Weak market 40-50/outlet/year - Strong market 185.12 dpa - average taken from the Example Site Specific Housing Completions 1996/97 – 2011/12</p>	<p>For well-established sites in strong areas this could get as high as 10-15 [outlets]. Some of the larger national builders can even operate more than one outlet off a single site, and running these as entirely separate construction and sales outlets under different brands or aimed at different market segments.</p> <p>As the number of separate sales outlets grow, the overall build rate will increase. However, doubling the size, the number of outlets or the number of developers may not directly lead to a doubling of the build rate. Ultimately, there will be a finite number of purchasers able and willing to purchase properties in any particular geographic location irrespective of the degree of range and choice of product that can be made available.</p>
<p>A Report into the Delivery of Urban Extensions. On Behalf of Gladman Developments Limited (Hourigan Connolly, February 2014)</p>	<p>8 year period should be allowed for from the preparation of an outline/in principle planning application to the delivery of homes.</p>	<p>30-35/outlet</p>	<p>The provision of off-site infrastructure is a major hindrance to the delivery of houses from urban extensions. Many of the sites reviewed have not progressed (or have taken many years to progress) due to the impact the requirement to provide off-site infrastructure work has on scheme viability.</p> <p>The major impacts on timescales derive from the time taken to promote urban extensions through the plan making process, the time taken to prepare, submit and consider planning applications and the associated legal agreements relation to planning obligations, land ownership issues and off-site requirements.</p>
<p>Urban Extensions. Assessment of Delivery Rates. Report to Barratt Homes (Savills, October 2014)</p>	<p>>4 years – urban extension site starts construction on the first phase of housing more than four years after the submission of an outline application. <3 years - considering only sites coming forward since 2010, the average time taken to start on site drops to under three years after the submission of an outline application. 6.5 years - >3,000 unit sites 4 – 5 years - <3,000 units sites</p>	<p>60 dpa - first year of construction 100-120 dpa - in subsequent years</p>	<p>We are aware of many urban extensions in the south of England where recent delivery rates have been substantially in excess of 120 units per annum.</p> <p>The study indicates that, whilst many urban extensions have taken longer than four years to progress from outline application to a start on site, it appears that these timeframes have compressed more recently, to less than three years on average. This suggests that, if pre-application timeframes can be accelerated, it has become more likely that these sites can start to deliver housing within the lifetime of a five year housing land supply plan.</p> <p>A recurring hindrance to quick progress is the provision of infrastructure. This tends to slow down the delivery of urban extensions at two key points, firstly in agreeing the Section 106, and secondly between approval of reserved matters and starting on the first housing units. ... The timing of the infrastructure works is also key. Where is it planned to be delivered in line with the phasing of housing delivery, the potential for problems is limited. ... However, if the infrastructure works are not phased alongside the housing delivery, it can pose problems.</p> <p>There is however some indication that sites are more likely to progress quickly through the system in local authorities with high housing growth. Plotting the total time taken for</p>

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Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
Sutton Coldfield Green Belt sites, Phase 2 Report of Study (Peter Brett Associates, HDH Planning & Development, June 2014)	-	-	<p>construction to begin from the submission of an outline application against the increase in dwelling stock in each local authority over the last decade shows rapid progression of sites of over 3000 units in the established growth areas of Milton Keynes and Corby. In these two local authorities, which have respectively seen a 16% and 18% growth in dwellings since 2004, construction began within three years of an outline application being submitted. Conversely in the local authorities which have seen less than 10% growth, all but two of the 3000+ unit sites took longer than the 5 year average. The rapid progress of these sites through the planning process in local authorities which were already delivering high numbers of new dwellings suggests that the appetite for development and resource for dealing with major applications within the local authority plays just as important role in bringing forward urban extensions as the characteristics of the site itself. Corby and Milton Keynes were both recipients of funding through the 2003 Sustainable Communities Plan, which included grants totalling £350 million across the country for Planning Delivery, enabling them to progress major development sites more rapidly.</p> <p>There is no overall trend of higher levels of delivery on the larger sites. There are very high rates on Eastern Development Area at Milton Keynes (capacity 4,000 units) where 791 units were delivered after three years of construction. This is in an established growth area, and was associated with high levels of competition between multiple developers on site.</p> <hr/> <p>In this section we outline some features of the current market which are of relevance to this study, including some aspects of original research undertaken by Simon Drummond-Hay of HDH Development & Planning.</p> <ul style="list-style-type: none"> • In the pre-recessionary period (i.e. pre-2008) there were around 7,000 outlets nationally of which 4,000 were sites of over three dwellings. In 2006 these outlets produced 2.7 units a month on average; • In the post-recessionary period (around 2010-11) there were about 3,200 outlets nationally, producing 2.2 units a month on average; • In 2014 there are 6,000 outlets nationally, producing 2.5 units a month on average; • In 1988 there were 12,000 builders nationally building up to 100 units per annum plus 250 regional and 13 national housebuilders; • By 2010 this had reduced to 2,800 builders nationally, building up to 100 units per annum plus 85 regional and 9 national housebuilders; • Generally the national total housing stock increases by 0.53% per year. • In the pre-recessionary period about 45% of houses were delivered on small sites, now it is just 10% nationally. In part this is due to funding constraints for small developers (and the disappearance of many of them, as noted above); • Since April 2013 37% of new homes sales nationally have been assisted by the Help To Buy scheme; and • Pre April 2013 21% were assisted under HomeBuy / NewBuy. <p>In an attempt to inform the phasing and number of outlets, we have considered development in and around two towns that are growing rapidly, those being Milton Keynes and Swindon.</p> <p>In and around Swindon, in early 2014, there were 15 active outlets. Swindon's delivery rate is about 610 units per annum, of which approximately 50% were from smaller sites,</p>

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
Responding to market demand; understanding private housing supply (HBF, August 2015) 1890552	-	-	<p>which equates to circa 300 units or 20 units per outlet per annum.</p> <p>It was notable that where a developer had more than one active outlet they are geographically separate and quite different in character. Whilst the physical product in terms of buildings is not necessarily very different, the schemes are.</p> <p>A broadly comparable situation prevailed in Milton Keynes where there were 28 outlets and a similar conclusion could be drawn – although in Milton Keynes there is a greater diversity of products being offered by developers. Milton Keynes’ delivery is about 1500 units per annum, of which approximately 25% were from smaller sites which leaves 1,125 or so from 28 main outlets, or circa 40 per main outlet.</p> <p>What conclusions can we draw from the HDH research, of relevance to the Sutton Coldfield situation? In terms of competition, the market is likely to view all the potential outlets identified as being in competition with each other. Indeed, Options B & C are immediately adjacent, separated only by roads or natural features and hence would be directly competitive.</p> <p>The provision of more than 25% of output from the main outlets is limited to the exceptional case of Milton Keynes, where strategic growth was planned for many years through the New Town Development Corporation and special delivery mechanisms still exist. Without such mechanisms in place, reliance on significant output from main outlets should therefore be guarded against.</p> <hr/> <p>Two laws of private home building are relevant to the following discussion:</p> <ul style="list-style-type: none"> • First, private housing production is sales led; • Second, all else being equal, sales are a function of the number of sales outlets. <p>The first law means that private home builders can only build if they have funded customers to sell to. These can include owner occupiers, small-scale private investors, corporate or institutional investors, affordable housing providers such as housing associations (e.g. for S106 units), custom builders, local or central government. Sales may be ordinary, plot-by-plot market sales, or they can be bulk sales, such as to a housing association or a large investor.</p> <p>The second law means that market sales are a function of the number of sales outlets, and not just the number of sites (a large site can have more than one sales outlet) or the total area of permissioned land. All else being equal, we would expect more market sales (and production) over any given period from 10 sites of 100 units than from 2 sites of 500 units or one site of 1000 units.</p> <p>Sales from a single outlet will of course be influenced by external factors: e.g. sales may rise because the housing market has become more buoyant, or because the Government has introduced a new scheme such as Help to Buy Equity Loan. However "all else being equal" - i.e. putting aside such external influences over which the home builder has little or no control - the rate of ordinary market sales per outlet per time period will be dependent on local market conditions, often referred to as the local market’s absorption capacity. This will be a function of the size of the local market and types of demand, the types of products offered by the home builder and their prices in relation to local demand, the number of new home competitors, etc. Bulk sales will be driven by different influences, such as the requirements of a S106 agreement or an investor’s requirements.</p> <p>Therefore the second law of home building means that if a home builder wishes to increase annual sales and production by, say, 10%, all else being equal the company will require roughly 10% more sales outlets. In other words, assuming no change in external</p>

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
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influences, a house builder cannot simply decide to build and sell 10% more homes from the company's existing sales outlets.

A frequent accusation is that house builders control the rate of sales and production on a site "to protect their profit margin". This is quite true, but not for any sinister reason. House builders are price takers, in that the prices they can charge on a site will be determined by prices in the local market. If a house builder tried to factor lower prices than in the local market into their land purchase bid they would not be able to compete against other bidders factoring in local market prices. Once a site is purchased, the land value becomes a fixed cost and there is very little an efficient builder can do to cut other costs during production (e.g. build, infrastructure, fees, etc.). Therefore the only flexible element on a site already under production is the profit margin. Assuming constant market conditions, if the house builder were to cut sales prices, more homes could be sold. However the drop in revenue from lower sales prices would probably have to be absorbed by a lower profit margin. If this were done persistently, the company would go out of business. So protecting profit margins is simply another way of saying that companies must be able to stay in business.

However the second law needs to be qualified, in that beyond a certain rate of sales and production other constraints will kick in. Depending on the type of building (houses, flats in small blocks, flats in large blocks, etc.), at some point building and site capacity constraints will limit the house builder's ability to increase production on a site (e.g. the number of trades working on a site, transport logistics, etc). If this happens before the site's sales potential has been exhausted, it will limit the rate of sales. In addition, most mortgage offers are for six months. Therefore a house builder will find it difficult to sell properties scheduled for physical completion much beyond six months to customers requiring a mortgage as buyers' mortgage offers will expire before legal completions can take place. The Help to Buy scheme imposes a similar constraint: the HCA allows no more than six months between exchange of contracts and legal completion, which means buyers cannot exchange contracts on properties scheduled for physical completion beyond six months.

On large sites, home builders may open multiple outlets, or sell phases to competitors who open extra outlets, so the number of sales from the site can be increased. The different outlets will enable companies to offer different product ranges and brands. However there are likely to be diminishing returns, so that beyond perhaps four or five outlets, sales per outlet will decline.

So put simply, increasing aggregate private housing supply, all else being equal, requires (a) many more sales outlets, (b) allowing home builders to offer the widest possible range of products to meet the broadest range of market and other demand, and (c) ensuring the widest possible range of housing suppliers, of all sizes, have access to viable, permissioned land. All three require the widest possible range of sites, by size and location.

The range of available sites, by size and location, will determine the breadth of suppliers and brands able to acquire suitable sites. The plan-led system has tended to result in some local authorities concentrating development on a few large sites and severely restricting development elsewhere. As well as restricting the rates of sales and production, and restricting the range of products house builders can offer and the range of market needs they can meet, this also restricts the supply of smaller sites which are the lifeblood of Small and Medium Enterprise (SME) house builders. To maximise supply from local housing markets, local plans should be required to provide the widest possible range of

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
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			<p>sites, by size and location, so that house builders can offer the widest possible range of products and brands to meet the full range of demand, and so that suppliers of all sizes, including SMEs, can find suitable sites.</p> <p>Custom build offers opportunities to expand housing supply, although we need to be realistic about the scale of any likely increase. In particular, it offers business opportunities for SMEs home builders.</p> <p>House builders frequently boost the build-out rate of large sites by opening more than one sales outlet, or by selling phases of the site to other developers who then open additional sales outlets. A site of 1,000 units with, say, three sales outlets will achieve significantly more sales per month or year than a single sales outlet.</p> <p>There may be other opportunities to increase delivery rates on large sites without damaging the main developer's financial interests. It may be possible to sell a later phase to an SME who may offer a product that larger developers may not offer, such as custom build. Private affordable housing and more flexible local authority affordable housing demands could boost the number and rate of delivery of affordable housing on large sites. Similarly, as noted above, it may be possible for later phases of a large site, or a large regeneration site, to offer opportunities for institutional investors in the private rented sector.</p> <p>Revised HCA public-sector land disposal processes will, we hope, reduce bidding costs and complexity. Increased land supply following reforms to the NPPF mean public-sector site disposals must compete against private sector site sales.</p> <p>'Buy now pay later' disposals could be particularly valuable in boosting supply. Joint ventures with public-sector landowners, by reducing the upfront capital requirements and changing the return on capital calculation, could allow companies to expand supply. Disposals of small sites suitable for SMEs need to be as straight forward as possible, avoiding excessive bidding costs.</p> <p>Direct commissioning should add to what the private sector can do, not duplicate. The current pilot at Northstowe must be based on realistic parameters (e.g. land value, profit margin, sales values).</p>
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<p>Spotlight Development: - The Value of Placemaking (Savills, 2016)</p>		<p>180 dpa – The additional infrastructure spend (an extra £15K per unit) is assumed to be spent as follows: 60% upfront investment then 10% every fifth of the development built out.</p>	<p>When it comes to spending on placemaking, some key conditions stand out: the strength of the local market relative to connected markets and therefore the potential to increase sales values and sales rates through extra investment.</p> <p>At the simplest level, it [Savills land value model] shows that spending an extra 50% on placemaking, in markets where this leads to a higher sales value and faster sales rate, can boost the land value by around 25%, depending on required rates of return.</p> <p>A key feature highlighted by our modelling is that investment in place releases the potential for higher sales rates and sales values. This is particularly the case in areas of high demand where buyers can be drawn from strong markets nearby. Therefore, the uplift in sales values can only be achieved if there is investment in place to make it more appealing. The sooner the investment is made, the sooner the uplift in sales values can be achieved which is reflected in the land value. Conversely, investing later decreases the potential.</p> <p>Our model shows that for the legacy scenario the land value decreases by 26% if the majority of the extra investment is made 40% of the way through the build out rather than at the start.</p> <p>Investing more upfront however, increases the peak debt. In our model the peak debt is</p>
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Source

Lead in Times (variable metrics)

Build Out Rates / Outlets

Findings Summary (as taken set out in the source)

56% greater if the majority of the investment is made upfront rather than later in the build. The ability to accommodate this level of debt is necessary to achieve the higher land values discussed above.

Amongst the examples we have looked at where placemaking has been successful, some sites have seen strong increases in sales rates, others have seen strong increases in sales values or elements of both.

In Poundbury, the urban extension to Dorchester in Dorset, new build values are up to 29% higher than on other new build schemes in the area on a type for type basis in the last year. At Brooklands in Milton Keynes the highest sales rates over the last three years have been nearly double (91% higher) that of other nearby developments such as Oakgrove and Middleton.

In this legacy scenario, we have assumed that sales values reach 20% above the basic scenario to £300 per sq. ft and that the take up rate is 50% higher at 180 homes per year across all tenures, as a result of opening up new markets for the scheme.

Where land is paid for over a period of time, there may be more financial capacity to invest in place and achieve better returns in the long term. There is therefore an incentive for the landowner to take a longer term view and maintain ownership of the land to benefit from the additional investment. This can be achieved by entering into a joint venture (JV) or development licence with a master developer.

Land value is increased with faster sales rates because higher levels of income are achieved sooner and the development is completed faster. As a result, the period until the development breaks even is shortened and the finance costs are reduced. This benefits the various partners that may have invested in the scheme, including the public sector. Hence public bodies putting in the land, receive their back ended returns sooner and finance invested to support upfront costs of infrastructure can be repaid earlier, returning to the public purse.

Developers building large urban extensions are not just selling houses, they are selling a vision of the future. Putting the site on the map as a destination with a character of its own is crucial to attract demand, particularly if the aim is to draw more affluent buyers from further afield. Early marketing, PR, social media and community engagement all have a part to play in shaping that vision in the public's imagination, gaining support for the development, easing the planning process and ultimately boosting values once homes go on sales.

Urban & Civic's decision to invest in community engagement has played a large part in shaping perceptions of Alconbury Weald in Huntingdon, ultimately in supporting sales. The first homes, built by Hopkins, went on sale in April this year. Sales rates in the first two months were higher than anticipated - two per week compared to the average of one per week on an average outlet. Sales values on a per square foot level were 16% above that expected. Given that the scheme is still in its very early phases, we would anticipate further uplift.

At Heyford Park, a development of over 700 homes on a former US air force base in Bicester, rental uptake increased significantly in the lead up to the opening of Heyford Park Free School in 2013 as parents sought to ensure that they were in the right catchment for the new state school. The success of the school which is currently three times oversubscribed has driven new build sales rates with approximately a quarter of new buyers suggesting the school was the main reason they buy at the site. Overall, Dorchester, the master developer behind Heyford Park, has experienced sales price

Source

Lead in Times (variable metrics)

Build Out Rates / Outlets

Findings Summary (as taken set out in the source)

Start to Finish. How Quickly do Large-Scale Housing Sites Deliver? (NLP, November 2016)

3.9 years - the average lead in time for large sites prior to the submission of the first planning application
 6.1 years - the average planning approval period of schemes of 2,000+ (5.3 – 6.9 years)
 ~5 years - the average for all large sites

~161 dpa - The annual average build-rate for the largest sites (of 2,000 or more units)

Table 3: Previous land use by size and average annual build out rate

	Site Size (dwellings)	Number of sites in this group	Average Annual Build-out Rate
Greenfield Sites	500-999	14	86
	1,000-1,499	9	122
	1,500-1,999	7	142
	2,000+	13	171
	Total/Average	43	128
Brownfield Sites	500-999	16	52
	1,000-1,499	3	73
	1,500-1,999	1	84
	2,000+	7	148
	Total/Average	27	83

Source: NLP analysis

growth from £250 per sq. ft to £340 per sq. ft in the two years since it started building with 150 homes already completed and sold by the housebuilder on site. It has experienced a sales rate of two a week, selling to one in four visitors.

Housing sites with a larger proportion of affordable homes (meeting the definition in the NPPF) deliver more quickly, where viable. The relationship appears to be slightly stronger on large-scale sites (500 units or more) than on smaller sites (less than 500 units), but there is a clear positive correlation. For both large and small-scale sites, developments with 40% or more affordable housing have a build rate that is around 40% higher compared to developments with 10-19% affordable housing obligation.

Our analysis also identifies that, on average, a site of 2,000 or more dwellings does not deliver four times more dwellings than a site delivering between 100 and 499 homes, despite being at least four times the size. In fact it only delivers an average of 2.5 times more houses. This is likely to reflect that:

- it will not always be possible to increase the number of outlets in direct proportion to the size of site – for example due to physical obstacles (such as site access arrangements) to doing so; and
- overall market absorption rates means the number of outlets is unlikely to be a fixed multiplier in terms of number of homes delivered.

If more homes are to be built, more land needs to be released and more planning permissions granted. Confidence in the planning system relies on this being achieved through local plans that must be sufficiently ambitious and robust to meet housing needs across their housing market areas. But where plans are not coming forward as they should, there needs to be a fall-back mechanism that can release land for development when it is required.

Planned housing trajectories should be realistic, accounting and responding to lapse rates, lead-in times and sensible build rates. This is likely to mean allocating more sites rather than less, with a good mix of types and sizes, and then being realistic about how fast they will deliver so that supply is maintained throughout the plan period. Because no one site is the same – and with significant variations from the average in terms of lead-in time and build rates – a sensible approach to evidence and justification is required.

Spatial strategies should reflect that building homes is a complex and risky business. Stronger local markets have higher annual delivery rates, and where there are variations within districts, this should be factored into spatial strategy choices. Further, although large sites can deliver more homes per year over a longer time period, they also have longer lead-in times. To secure short-term immediate boosts in supply – as is required in many areas – a good mix of smaller sites will be necessary.

Plans should reflect that – where viable – affordable housing supports higher rates of delivery. This principle is also likely to apply to other sectors that complement market housing for sale, such as build to rent and self-build (where there is demand for those products). Trajectories will thus need to differentiate expected rates of delivery to respond to affordable housing levels or inclusion of other market products. This might mean some areas will want to consider spatial strategies that favour sites with greater prospects of affordable or other types of housing delivery. This plays into the wider debate about support for direct housing delivery for rent by local government and housing associations and ensuring a sufficient product mix on sites.

Finally, in considering the pace of delivery, large-scale brownfield sites deliver at a slower rate than do equivalent greenfield sites. The very largest brownfield sites have also seen

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
The Role of Land Pipelines in the UK Housebuilding Process (Chamberlain Walker Economics, September 2017)	0.5 to 0.8 years - Planning application to planning consent 1.7 years (21 months) - Planning consent to construction start	-	<p>very long planning approval periods. Self-evidently, many brownfield sites also face barriers to implementation that mean they do not get promoted in the first place. In most locations outside our biggest cities, a good mix of types of site will be required.</p> <p>Previous DCLG estimates suggest that 10% to 20% of planning permissions don't make it to a start because they lapse (i.e. expire), with a further 15% to 20% re-engineered as a fresh application. This means that the permissioned land bank needs to be much bigger than the permissioned pipeline of 4 years to account for those consents that don't make it through. Lapses can increase the required land bank significantly.</p> <p>The new data, together with corresponding completions data, imply a permissioned land bank in England of 5.4 years' worth of output currently. This is broadly consistent with the modelling presented in this report that demonstrates a permissioned land bank of 5.7 years is needed for a 'post-planning permission' development pipeline of 4 years with a 20% lapse rate and 5% per annum completions growth.</p> <p>The modelling demonstrates that a stock of 1.25 million planning permissions (1 million detailed) would be needed for 250,000 home completions a year in the 'zero growth' steady state. This compares to a stock of around 0.8 million planning permissions (0.7 million detailed) currently. That's a shortfall of around 450,000 planning permissions.</p> <p>Relative to their level of completions, the top three UK builders (Barratt, Persimmon and Taylor Wimpey) have smaller land banks than everyone else, with an average permissioned land bank of 5.3 years' worth of current output, compared to 5.5 years for the rest of the sector (5.4 years is the average).</p> <p>The top three UK builders' implementable land bank is only 3.3 years' worth of output. This reflects their fast-asset-churn, return on capital business models.</p> <p>55% of all planning permissions in England are not held by builders at all. 87% of outline planning permissions are not held by builders.</p> <p>Compared to other applicants, builders:</p> <ul style="list-style-type: none"> (a) hold a far richer concentration of detailed planning permissions within their consented land bank (94%) and very few outline-planning permissions (6%); (b) are more likely to have started construction on their detailed planning permissions (60% likelihood); and (c) have far fewer stalled sites (<3%).
Independent Review of Build Out Rates. Annexes. Annex A Build out rates (Rt Hon Sir Oliver Letwin MP, June 2018) ³⁰	>4-5 years - from application to first start (of the 15 large sites surveyed, 10 took longer than 4-5 years) Based on: Stage 1 and 2: Regulatory and build out stage length; and Stage 1: Regulatory stage length.	286.2 dpa – average annual build out (units) of the 15 large sites Based on Stage 2: Annual build out (units)	<p>I concluded in the Draft Analysis that the homogeneity of the types and tenures of the homes on offer on these sites, and the limits on the rate at which the market will absorb such homogenous products, are the fundamental drivers of the slow rate of build out.</p> <p>I also concluded that:</p> <ul style="list-style-type: none"> a. it would not be sensible to attempt to solve the problem of market absorption rates by forcing the major house builders to reduce the prices at which they sell their current, relatively homogenous products. This would, in my view, create very serious problems not only for the major house builders but also, potentially, for prices and financing in the housing market, and hence for the economy as a whole; b. we cannot rely solely on small individual sites. This cannot be a question of "either / or". We will continue to need more new housing both on smaller sites and on large sites; and c. if either the major house builders themselves, or others, were to offer much more

³⁰ Accessed at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718879/Build_Out_Review_Annexes.pdf

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
			<p>housing of varying types, designs and tenures including a high proportion of affordable housing, and if more distinctive settings, landscapes and streetscapes were provided on the large sites, and if the resulting variety matched appropriately the differing desires and financial capacities of the people wanting to live in each particular area of high housing demand, then the overall absorption rates – and hence the overall build out rates – could be substantially accelerated.</p> <p>Finally, I assessed the extent to which the rate of build out on very large sites might be held back by constraints other than the market absorption rate, if that binding constraint were removed. I looked in particular at the extent to which both start up on site and later build out rates could be affected by:</p> <ul style="list-style-type: none"> • lack of transport infrastructure, • difficulties of land remediation, • delayed installations by utility companies, • constrained site logistics, • limited availability of capital, • limited supplies of building materials, and • limited availability of skilled labour. <p>I found that more effective coordination between government departments, agencies and private sector operators was urgently required to improve and speed up the delivery of transport and utility infrastructure before the build out could start (and sometimes during the construction period) on large brownfield sites; but I concluded that neither this issue nor any of the other potential constraints were likely to impede the build out rate itself, even if the constraint of the absorption rate was removed – with one exception – namely, the availability of skilled labour.</p> <p>On the availability of skilled labour, my conclusion was that an insufficient supply of bricklayers would be a binding constraint in the immediate future if there was not either a substantial move away from brick-built homes, or a significant import of more skilled bricklayers from abroad, or an implausibly rapid move to modular construction techniques. I concluded that the only realistic method of filling the gap in the number of bricklayers required to raise annual production of new homes from about 220,000 to about 300,000 in the near-term, was for the Government and major house builders to work together on a five year “flash” programme of on-the-job training.</p> <p>To give the greatest possible chance of significant change in the build out rates and quality of large scale development in the longer-term I recommend:</p> <ol style="list-style-type: none"> a. the local authority could use a Local Development Company (LDC) to carry out this development role by establishing a master plan and design code for the site, and then bringing in private capital through a non-recourse special purpose vehicle to pay for the land and to invest in the infrastructure, before “parcelling up” the site and selling individual parcels to particular types of builders/providers offering housing of different types and different tenures; or b. the local authority could establish a Local Authority Master Planner (LAMP) to develop a master plan and full design code for the site, and then enable a privately financed Infrastructure Development Company (IDC) to purchase the land from the local authority, develop the infrastructure of the site, and promote the same variety of housing as in the LDC model.

Source	Lead in Times (variable metrics)	Build Out Rates / Outlets	Findings Summary (as taken set out in the source)
How does your garden grow? A stock take on planning for the Government's Garden Communities programme (Lichfields, December 2019)	7-8 years – time taken for majority of Garden Community Sites which have no permissions yet (depending on their size) to begin delivering 2-3 years – time taken for those with outline permission (again dependent on size) to begin delivering	-	<p>To understand the trajectory of housing delivery from Garden Communities, we have applied average build rates and lead in times by size of site from our Start to Finish 2 publication to create a national Garden Communities trajectory. This indicative delivery timeline accounts for the stage at which individual sites and schemes within the programme have already reached, including any completions and outline permissions that have occurred, but does not account for potential variations in build out rates over time on individual sites (e.g. ramping up of delivery in the early years once full permission has been granted). We have not assembled this with a view to presenting a position on the trajectories of individual projects for the purposes of assessing individual plans; it is an attempt to estimate the trajectory of the overall programme.</p> <p>Our modelling suggests the Garden Communities programme will take until at least 2050 to build out fully before consideration of any unforeseen delays or specific measures to accelerate build-out. Based on our assumptions, the programme will deliver only around 21,000 homes over the next five years, before significantly increasing for the period from 2025 and ramping up to a peak rate of delivery of around 16,000 per annum after 2030 continuing until about 2044 before tapering (to 13,000 dwellings per annum) by the late 2040s. Caution is required, as there can be substantial variation in build out rates, both in terms of individual sites, as well as for sites over their lifespan of delivery. For example, our Start to Finish 2 research found that peak delivery could be up to 75% higher than average delivery across all years. Exogenous factors such as market conditions, planning policy changes and changes to financing are all likely to play a part in this, and of course one of the aims of the Government support that Garden Communities can attract is to help increase the pace of their delivery. However, the indicative timeline usefully shows how long it might take the Garden Village programme to achieve its housing output goals if average build rates were applied. We can conclude that Garden Communities will deliver a significant number of homes, but the more significant impact will not be seen until well after the next national electoral cycle.</p> <p>We have used typical lead in times and planning periods based on Start to Finish 2, suggesting that the majority of Garden Community Sites which have no permissions yet will take 7-8 years (depending on their size) to begin delivering, and those with outline permission will take 2-3 years (again dependent on size) to do so. Sites already under construction or with reserved matters granted are assumed to build out from 2020.</p> <p>The scale of the programme is undoubtedly ambitious, and it has progressed further than some ill-fated predecessors – such as 'new country towns' and 'Eco Towns'. While the Garden Communities are unlikely to deliver the lion's share of their housing allocations until the mid-2020s - beyond the next election cycle - they could deliver up to 16,000 dwellings per annum by the 2030s based on current typical build rates and lead in times, making a significant contribution to meeting housing need.</p>

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Start to Finish. What factors affect the build-out rates of large scale housing sites? Second Edition. (Lichfield, February 2020)

Table 1: Average planning approval period by size of site (years)

Site Size	1st edition research (years)	This research (years)
50-99	1.1	1.4
100-499	2.4	2.1
500-999	4.2	3.3
1,000-1,499	4.8	4.6
1,500-1,999	5.4	5.3
2,000+	6.1	6.1

Source: Lichfields analysis

160 dpa - The annual average build-rate for the largest sites (of 2,000 or more units)
61/outlet/year - average completions per outlet on sites with one outlet
51/outlet/year - for sites of two outlets
45/outlet/year - for sites with three outlets

Geography and Site Configuration - An under-explored aspect of large-scale site delivery is the physical opportunity on site. For example, some schemes lend themselves to simultaneous build out of phases which can have the impact of boosting delivery rates in that year, for example, by having access points from two alternative ends of the site. Other sites may be reliant on one key piece of infrastructure which make this opportunity less likely or impractical.

In the first edition of this research we touched on this point in relation to Eastern Expansion Area (Broughton Gate & Brooklands) of Milton Keynes. As is widely recognised, the planning and delivery of housing in Milton Keynes is distinct from almost

Source

Lead in Times (variable metrics)

Build Out Rates / Outlets

Findings Summary (as taken set out in the source)

Table 4: Mean delivery rates by site sizes, a comparison with first edition findings

Site size (dwellings)	2016 edition research (dpa)	2020 edition research (dpa)	Difference
50-99	27	22	-5 (-19%)
100-499	60	55	-5 (-8%)
500-999	70	68	-2 (-3%)
1,000-1,499	117	107	-10 (-9%)
1,500-1,999	129	120	-9 (-7%)
2,000+	161	160	-1 (-0.62%)

Source: Lichfields analysis

all the sites considered in this research as serviced parcels with the roads already provided were delivered as part of the Milton Keynes delivery model. Multiple house builders were able to proceed straight onto the site and commence delivery on different serviced parcels, with monitoring data from Milton Keynes Council suggesting an average of c.12 parcels were active across the build period. In this second edition of this research the Milton Keynes examples remain some of the sites with the highest annual build-out rates.

In this edition we look at the case study of Land South of the M4 in Wokingham. In 2017/18 the site achieved a significant 419 completions. Using the local authority's granular recording of delivery on the site to date, we have been able to consider where these completions were coming forward from within the wider 2,605 dwelling scheme. As shown in Figure 14 (below), in that year new homes were completed on five separate parcels with completions ranging from 4 to 169 dwellings. On some of these parcels (SP9_1 and SP4) there were two or three separate housebuilders building out, and in total on the site there were seven different house building companies active (the impact of multiple outlets on build-out rates is explored later in this report). The parcels are located in separate parts of the site and each had their own road frontages and access arrangements which meant they are able to come forward in parallel. This can enable an increased build rate.

Figure 14: Map of parcels at Land South of M4, Wokingham



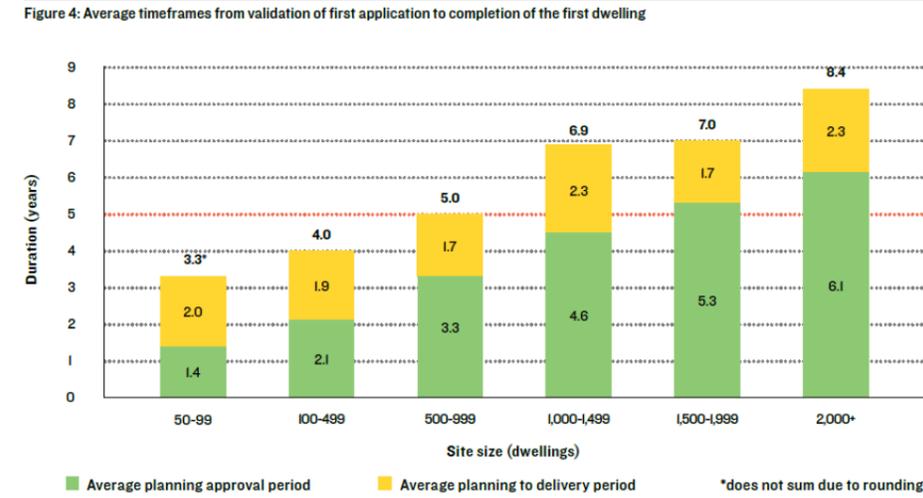
Source: © Google Earth 2020/ Wokingham Local Plan

Table 7: Parcels at Land South of M4, Wokingham

Parcel reference	Developers (active outlets)	Completions in 2017/18
SP1	Bellway (1)	59
SP2w	Bellway and Bovis (-)	None - parcel completed
SP3	Crest Nicholson (1)	47
SP4	Taylor Wimpey and David Wilson Homes (2)	140
SP9_1	Bloor, Bovis and Linden (3)	169
SP10	Darcliffe Homes (-)	None - parcel completed
SP11	Taylor Wimpey (1)	4

Source: Lichfields analysis

Large schemes can take 5+ years to start - In developing a local plan, but especially in calculating a five year housing land supply position, it is important to factor in a realistic planning approval period dependent on the size of the site. Our research shows that if a scheme of more than 500 dwellings has an outline permission, then the average time to deliver its first home is two or three years. However, from the date at which an outline application is validated it can be 5.0 - 8.4 years for the first home to be delivered dependent on the size of the site. In these circumstances, such sites would make no contribution to completions in the first five years.

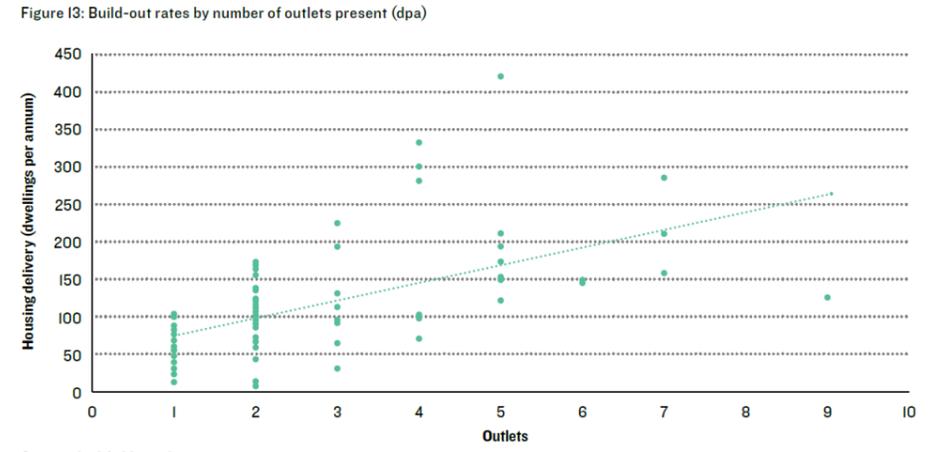


Source: Lichfields analysis

Lead-in times jumped post-recession - Whilst attention and evidence gathering is often focused on how long it takes to get planning permission, the planning to delivery period from gaining permission to building the first house has also been increasing. Our research shows that the planning to delivery period for large sites completed since 2007/08 has jumped compared to those where the first completion came before 2007/08. This is a key area where improvements could be sought on timeliness and in streamlining pre-commencement conditions, but is also likely impacted by a number of macro factors including the recession and reductions in local authority planning resources.

Large greenfield sites deliver quicker - Large sites can deliver more homes per year over a longer time period, with this seeming to ramp up beyond year five of the development on sites of 2,000+ units. However, on average these longer term sites also have longer lead-in times. Therefore, short term boosts in supply, where needed, are likely to also require a good mix of smaller sites. Furthermore, large scale greenfield sites deliver at a quicker rate than their brownfield equivalents: the average rate of build out for greenfield sites in our sample was 34% greater than the equivalent figure for those on brownfield land. In most locations, a good mix of types of site will therefore be required.

Outlets and tenure matter - Our analysis suggests that having additional outlets on site has a positive impact on build out rates, although there is not a linear relationship. Interestingly, we also found that schemes with more affordable housing (more than 30%) built out at close to twice the rate as those with lower levels of affordable housing as a percentage of all units on site, but those with 20-29% had the lowest rates of all. Local plans should reflect that – where viable – higher rates of affordable housing supports greater rates of delivery. This principle is also likely to apply to other sectors that complement market housing for sale, such as build to rent and self-build (where there is demand).



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Greater Cambridge Local Plan - Strategic spatial options appraisal: implications for carbon emissions.

Bioregional, on behalf of Greater Cambridge Shared Planning Authority

November 2020

NOTE: This is a draft version of the report. Please note the calculations of the carbon impacts arising from the maximum growth options do not currently include impacts from an additional 8,600 homes that have been assumed to be delivered on existing new settlements (as allocated in the 2018 Local Plans) above current delivery rates. This means that the carbon figures for all maximum options would be higher than quoted in the study and the comparison with the minimum and medium options will also need to be corrected. The relative differences in the performance between the maximum growth options will remain as shown in the document. An updated version is being prepared and will be published shortly.

Ronan Leyden, Head of Sustainable Places, Bioregional

Marina Goodyear, Snr Project Officer, Bioregional

Chris Holdup, Associate, Mode Transport Planning

Glossary and acronyms

BAU	Business as usual. Refers to today's current practices in design, construction and transport
BEIS	UK national government department for Business, Energy, Innovation and Skills
Building envelope	The external elements of a building (external wall, roof, windows)
Carbon intensity	Amount of carbon emitted during the production of a unit of energy
CO ₂	Carbon dioxide
CSRM	Cambridge Sub-Regional Model (a transport modelling tool used by the local authority that is bespoke to the area's transport patterns)
Energy performance gap	The difference between the predicted energy use of a building when it is designed compared to actual use. Usually occurs due to a combination of faults or changes in the construction process, modelling inaccuracies, and unanticipated user behaviours
Embodied carbon	Carbon emissions that already happened during the production, transport and assembly of goods before they are used or operated (such as building materials and construction)
EV	Electric vehicle
GB	Greenbelt
GCSP	Greater Cambridge Shared Planning
GHGs	Greenhouse gases
kWh	Kilowatt-hours (a unit of energy)
Operational carbon	Carbon emitted during the operation of a building or vehicle
PV	Photovoltaics (solar panels generating electricity)
tCO ₂ /y	Tonnes of carbon dioxide per year
ZC	Zero carbon

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Executive summary

We are commissioned by Greater Cambridge Shared Planning service to assess the scope for the new local plan to respond to climate emergency by supporting a transition to net zero carbon, including robust evidence-based carbon targets.

National government policy obliges the local plan to provide for growth of homes and associated facilities to meet the needs of a growing population and economic activity, as well as for existing residents and businesses that are currently constrained by unsuitable premises. It has to consider spatial options that could realistically bring that new growth forward (considering the conditions that exist in each type of location, and how this could constrain or enable new development).

Because new growth comes with demand for materials, heat, electricity and transport, it is typically associated with growth in carbon emissions. The amount of emissions depends on where it is built, provisions for sustainable travel, the quality of buildings, and how much renewable energy is deployed alongside new growth.

To inform decisions as to how to minimise the climate impact of the required new growth, this report models and compares the carbon emissions of the growth and spatial options being considered for the new Greater Cambridge Local Plan. We also identify a suite of policies to address the carbon emissions of new growth, and model how this affects the overall carbon outcome for each spatial option.

At this stage of plan making, the Councils have asked consultants preparing a range of evidence to compare the different choices available. The planning service provided figures showing three scenarios for growth that reflect the range of possibilities for economic and populational change within the plan period (see Table 1), beyond the existing commitments of 36,407 new homes not yet built.

Table 1: Growth Scenarios (number of new homes beyond existing commitments)

Low	Med	High
3,900	9,800	17,700

The provided growth figures also define eight spatial options for where these homes might be delivered. The spatial options are titled:

- 1 Densification of existing urban areas
- 2 Edge of Cambridge - outside the Green Belt
- 3 Edge of Cambridge - including some of the Green Belt
- 4 Dispersal - new settlements
- 5 Dispersal - villages
- 6 Public transport corridors
- 7 Supporting a high-tech corridor by integrating homes and jobs
- 8 Expanding a growth area around transport nodes

The title of each option refers to the type of location where **most** of its growth will occur. However, most of the options blend some growth in other types of location too, to reach the total (for example, see [table for the medium growth scenario](#))

This report sits within our wider net zero carbon study for the local plan, which also includes defining what 'net zero' means, exploring planning powers, setting targets, exploring the feasibility and cost implications of building to net zero carbon standards, the role of offsetting, and shaping policies to reflect the above.

We have created a bespoke model to assess the carbon implications of the spatial options, covering the following sources of emissions due to new development:

- 1) Building construction materials and processes (embodied upfront carbon).
- 2) Building heating and electricity usage (operational carbon).
- 3) Occupant and visitor transport (transport carbon).

This model is based on localised data on development densities and required supporting social infrastructure, localised buildings' energy use, local transport carbon, and national projections for reductions in electricity grid carbon intensity. Data vary from figures released by national government, to local data on recent planning approvals and transport. From this we generated six different spatial categories that reflect the kinds of growth (size, density, required additional infrastructure, transport patterns) that happens in Greater Cambridge: urban; edge of city (greenbelt or non); public transport corridor; new settlement; village.

By entering the amount of new housing growth in each location category, the model then adds a corresponding amount of additional supporting infrastructure (schools, healthcare, libraries, offices and community facilities). As mentioned, most spatial options have growth in more than one location category, as per the growth figures.

The model also offers a range of options for policies to reduce carbon emissions. To develop this, we used our own and other experts' knowledge about the extent to which it is possible to optimise transport and buildings' energy performance, and renewable energy generation.

The following two policy regimes have been modelled:

- 1) Business As Usual (BAU) - based on current typical practice.
- 2) Zero Carbon Policy: making significant improvements to new buildings' energy efficiency, embodied carbon, renewable energy generation, sustainable transport and usage of electric vehicles .

On the following pages we present outputs from our work to give three insights:

- A comparison of the emissions from growth options versus Greater Cambridge's existing emissions (and the very roughly estimated emissions that could be associated with as-yet unbuilt developments to which the planning service has already committed), to provide a sense of scale.

- The difference between carbon emissions from new growth in the plan period for all spatial options, levels of growth, and policy options.
- A comparison of the per-home annual emissions in the mid plan period, after zero carbon policies have been applied.

Please note that the figure for 'existing growth commitments' is a much looser estimation than the 'new growth' options and the 'existing emissions' figures¹. This figure is provided just to show the order of magnitude of existing commitments that are not yet built (36,407 new homes), compared to additional new growth being considered for the local plan (a maximum of 17,700 further new homes). We will be seeking to develop a more accurate estimation of the emissions from the committed-but-unbuilt 36,407 new homes by exploring in greater detail where those homes are being built and to what energy performance standard, so that they could be entered into our tool in a way that more closely reflects reality.

The scenarios being tested would represent an uplift of 0.4% - 12% to Greater Cambridge's existing annual CO₂², if they were all completed and in use today.

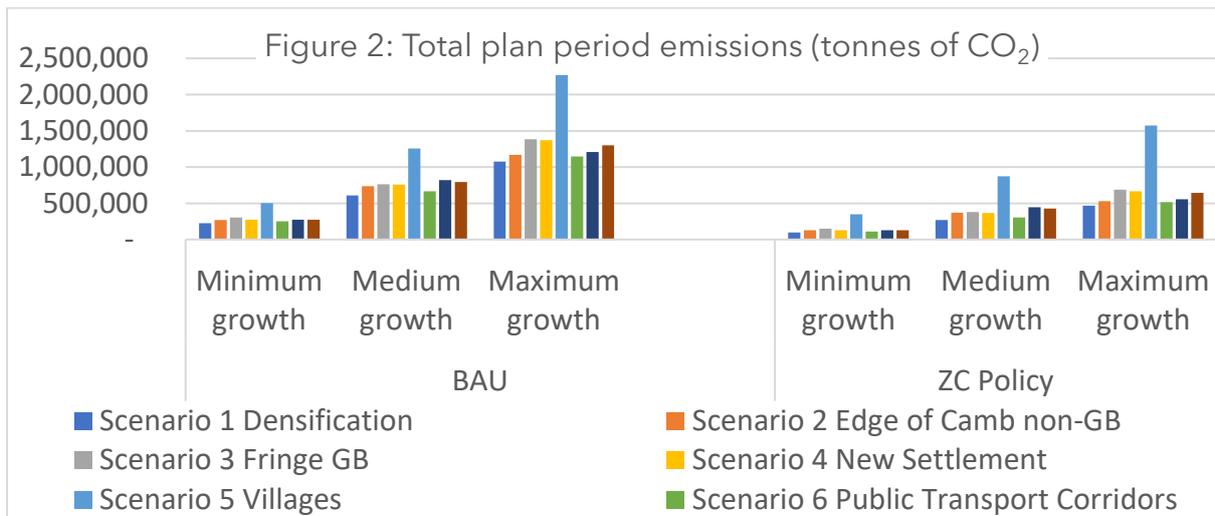
Our modelling finds that zero carbon policies result in major reductions to total plan period carbon emissions for all options and growth levels (Figure 2).

In terms of spatial options, Option 1 (Densification) has the lowest emissions, with Option 6 (Public Transport Corridors) a close second. Option 5 (Villages) has by far the highest carbon emissions, with or without the carbon reduction policies. Figure 3 shows that this is largely due to transport.

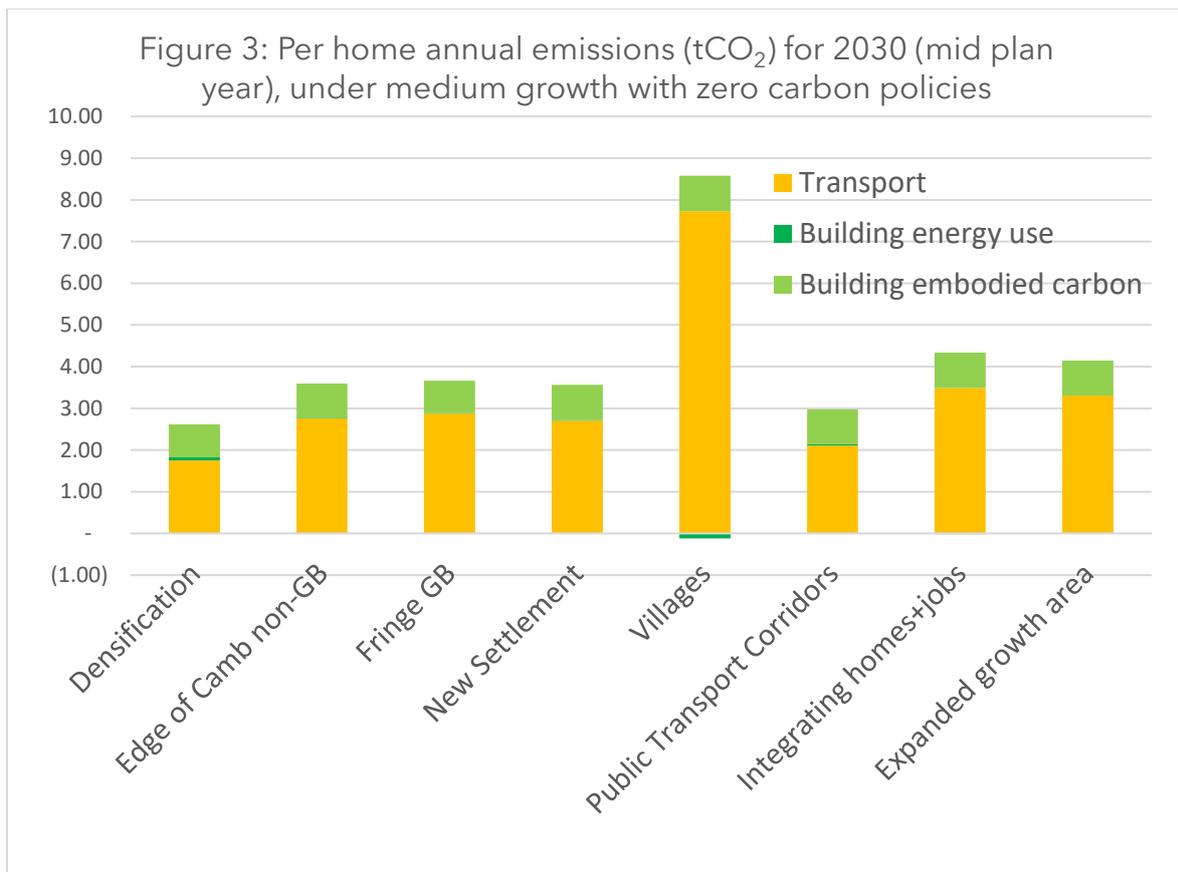
Please note that this carbon modelling approach is new and innovative. There is therefore no 'standard practice' as there is for certain other planning evidence pieces such as transport modelling, water modelling or objective housing needs assessment. However, we have endeavoured to take an approach that uses the best available data on how emissions are generated from buildings and transport to produce a credible broad-brush picture of the carbon emissions differences between each spatial option, with or without special planning policies to reduce that carbon. Our full methodology is available as an [appendix](#).

¹ The existing planning commitments represent 36,407 new homes and associated infrastructure. Because we do not have full information on their location and energy performance, we model them as an average of our location categories.

² We have modelled as if all new growth is operational in 2020, for the purpose of comparison with the [BEIS data](#) which is 2018. In reality, growth will be built out cumulatively over the plan period, and will only be fully complete by 2041. The BEIS' 'Full dataset' includes the following sectors: commercial/industrial, domestic, land use. The subset influenceable by local authorities is smaller because it excludes large industrial sites, railways, motorways and land use. Neither of these sets includes aviation, international shipping, or degraded peat soil emissions.



To understand the drivers of difference between each scenario, the following chart shows a breakdown of annual emissions per home in the mid-plan period year, with a medium level of growth, after zero carbon policies have been applied.



We see that the **main difference is due to transport** - with cars as the only realistic mode for most trips by most village dwellers. This is also true with 'business as usual', but the zero carbon policies bring transport into even sharper focus because the policies are able to eliminate carbon from buildings energy use.

To a lesser extent, there are differences due to the lower density of typical village developments compared to compact urban homes. In 'business-as-usual', larger and lower-rise homes have worse emissions from space heating and embodied carbon, due to more floor space and building envelope. New rural homes also need more new infrastructure, which in urban settings is often already present. However, if zero carbon policies are applied as in Figure 3, then the low-rise village homes gain a small carbon benefit because they can fit more rooftop solar panels per dwelling, hence they achieve negative emissions for building energy. Still, this does not cancel out the major carbon disadvantage of car use in rural areas. There are mitigation measures that can help reduce the carbon impact of transport, but while planning can help deliver the infrastructure (for public transport, active travel and electric vehicles), the uptake of these not guaranteed.

Beyond the urban/rural split, differences between other options also largely relate to the public transport links of the anticipated sites identified in the GCSP growth figures. For example, North-East Cambridge is a major site in Option 2 (Edge, non-Green Belt). This is next to a major train station and would most likely be quite high-density, therefore has been modelled as 'urban'. In contrast, the 'fringe Green Belt' growth was not specified to be as well-connected to public transport and is likely not to be as high density for landscape impact reasons, therefore has been modelled as a suburb.

The transport impacts modelled have been calibrated with reference to the parallel transport study which has been undertaken using the Cambridge Sub-Regional Model (CSRM). Whilst this has informed the results significantly, the two studies are not completely comparable due to differences in scope, metrics, and methodology. The details of this are discussed in Appendix 1.

The difference in transport carbon between options is not expected to reduce rapidly. A switch to electric vehicles is coming, but they remain a very small proportion of overall vehicles. Existing fossil fuel cars will stay on the road a long time³ after the 2035 national ban on sales of new ones. To address transport CO₂, the most effective action is to choose spatial options that reduce car dependence.

This work is set within the wider context of transitioning society to net zero carbon by 2050, as required by the Climate Change Act. All sectors of society and the economy have a role to play to getting to net zero carbon. The local plan will focus on the role that new development and major refurbishment must play in reducing emissions. Wider action will also be required beyond the remit of the local plan in order for Greater Cambridge's total emissions to reach net zero. The new growth

³ Cars stay on the road an average of 14 years from their first sale to when they are scrapped. <https://www.smm.co.uk/industry-topics/sustainability/average-vehicle-age/>

emissions modelled in this report represent a small addition to the area's overall total⁴ as per Figure 1.

The local plan could also take further action to reduce the existing emissions shown in Figure 1, by facilitating a large and rapid roll-out of additional new renewable energy infrastructure that could help decarbonise the grid electricity used by existing activities. It could also explore how new planning permissions could raise offset funds that could help existing buildings switch from gas heating to renewable heat or deploy green infrastructure that captures carbon from the air (trees or peatland). We are developing policy recommendations on these other topics as part of our wider net zero carbon study.

⁴ To make the two options comparable, we took out the embodied carbon figures from new growth, because embodied carbon is not included in the BEIS data.

Introduction

Our wider study, and how this report fits in

The Greater Cambridge Shared Planning Service (GCSP) are in the process of preparing a joint Local Plan for the Greater Cambridge area. A key issue for consideration in the Local Plan is the role of plan making in responding to the climate emergency, delivering net zero carbon development while still accommodating growth. We have been commissioned to assess the scope for the new local plan to respond to the climate emergency by supporting a transition to net zero carbon. As well as setting robust evidence-based carbon reduction targets, this also includes policy advice to ensure that new development plays its role in contributing to the transition to net zero carbon in Greater Cambridge. Net zero carbon means that carbon emissions are equal to carbon removals.

Bioregional are conducting this study with our partners Etude (zero carbon buildings engineers) and third-party consultants Mode (transport), Currie & Brown (costs), and Perkins & Will (sustainable masterplan).

Our wider study on net zero carbon for GCSP has six tasks. This report relates to **Task B: spatial analysis**. The full list of is as follows:

- Task A: Defining what net zero means for the local plan area (which gases and sources to include), and exploring planning powers to achieve that
- **Task B: Spatial analysis**, creating a tool that can model the different carbon emissions that will occur depending on where and how we build
- Task C: Defining carbon reduction targets and policies for the local plan
- Task D: Modelling whether it is possible to create buildings that we need in order to be 'net zero carbon', including several different kinds of building
- Task E: Exploring the difference in costs for net zero carbon buildings
- Task F: Exploring the potential role of offsetting.

Our work also covers consultation with a range of external stakeholders holding expertise in topics such as embodied carbon, planning law, and other local authorities tackling the same topic. Later, we will also provide feedback on specific policy options as they are developed.

Our work to date on the other tasks has identified several key points, including:

- The plan should take action on 7 different greenhouse gases, but carbon dioxide (CO₂) is the most important due to its large scale and long life in our atmosphere. CO₂ mostly comes from our use of fossil fuel energy. In the local plan region, damaged peatlands are also a source of CO₂.
- As well as having an end goal of 'net zero', it is vital to limit the total amount of CO₂ that we emit between now and 2050 - because it is the cumulative emissions that determine our climate impact. This is called a carbon

budget. To get onto a safe climate pathway, we cannot afford for new growth to add significantly to the baseline carbon burden. Policies will therefore need act strongly on the emissions associated with new development.

- New buildings' energy use, and their occupants' transport, are the main areas where the local plan can drive carbon savings. Peatlands should also be considered when choosing locations (using advice from the green infrastructure studies being conducted by another consultancy).
- It is already technically feasible to create net zero carbon new buildings based on typical local archetypes, with a modest cost uplift that will reduce over time as the construction industry gets used to new techniques, regulatory requirements increase and the cost of renewable technology falls.
- Measures to reduce carbon emissions in other sectors in Greater Cambridge, such as agriculture and existing settlements, are outside of the scope of this report but are still vital for the area's wider 'net zero' goal.

Assessment of strategic (non-site specific) spatial options

Cambridge City Council and South Cambridgeshire District Council completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth levels (low, medium and high) for homes and jobs, and eight strategy spatial options (non-site specific) for testing. Detail of the options and how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing - methodology document.

The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

The initial evidence findings will be reported to the Joint Local Plan Advisory Group in autumn 2020 and help to inform further engagement with stakeholders.

Process of Local Plan preparation

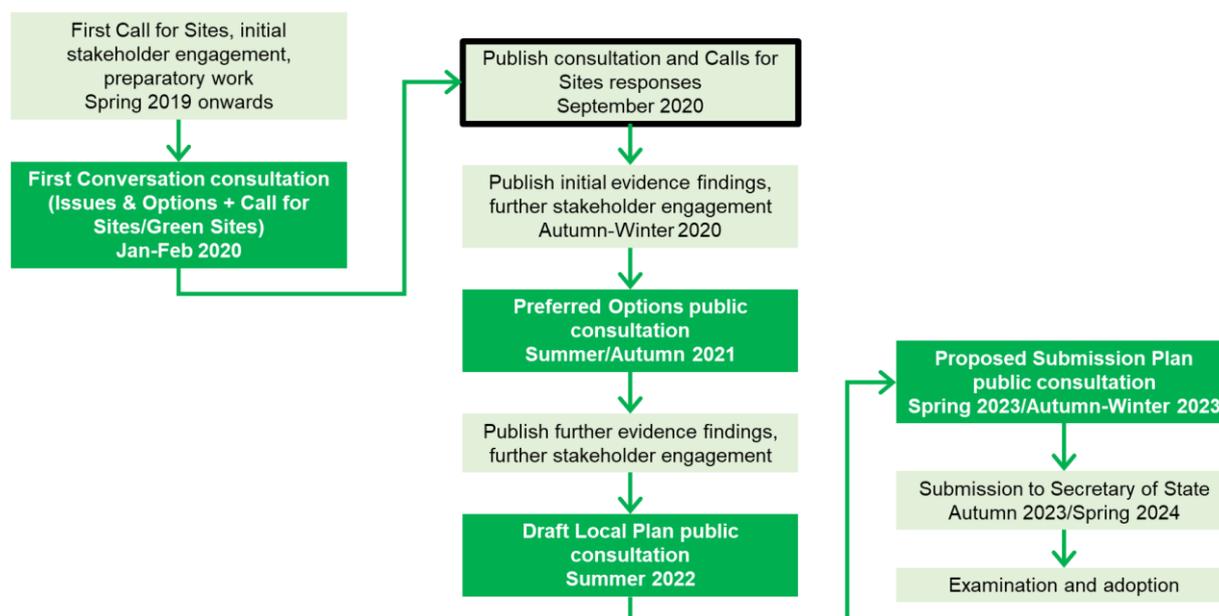


Figure 4: Process of local plan preparation. Provided by GCSP, September 2020.

Preferred Options public consultation is planned for Summer/Autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below in Figure 1.

The strategic options

The three growth level options tested through this report (as per figures provided by GCSP shared planning service) are:

- Minimum - Standard Method homes-led (3,900 new homes)
- Medium - central scenario employment-led (9,800 new homes)
- Maximum - higher employment-led (17,700 new homes)

This is **additional** new growth that the local plan seeks to accommodate, on top of growth to which the planning service has already committed but is not yet built.

The spatial scenarios tested through this report are:

1. Densification of existing urban areas
2. Edge of Cambridge - outside the Green Belt
3. Edge of Cambridge - Green Belt
4. Dispersal - new settlements
5. Dispersal - villages
6. Public transport corridors
7. Supporting a high-tech corridor by integrating homes and jobs
8. Expanding a growth area around transport nodes

The title of each option refers to the type of location where **most** of the growth will occur. However, **most of these options have some growth in other types of location too** (for example, see our [table for the medium growth scenario](#)).

Our methodology

This analysis set out to compare the carbon emissions implications of the various spatial options to be tested through the Greater Cambridge local planning process.

A bespoke carbon model has been created that covers the following sources of carbon emissions:

- 1) Building construction materials and processes (embodied upfront carbon).
- 2) Building heating and electricity usage (operational carbon).
- 3) Occupant and visitor transport (transport carbon).

The tool produces an annual carbon emissions figure for a given amount of growth. Total plan period emissions are then provided, based on an assumption that growth will be built out at an equal rate each year of the plan period.

Please note that this carbon modelling approach is new and innovative. There is therefore no 'standard practice' as there would be for certain other planning evidence pieces such as transport modelling, water modelling or objective housing needs assessment. However, we have endeavoured to take an approach that uses the best available data on how emissions are generated from buildings and transport to produce a credible broad-brush picture of the carbon emissions differences between each spatial option, with or without special planning policies to reduce that carbon. Our full methodology is available as an [appendix](#).

Buildings data sources

The modelling is residential-led, in that the required number of additional new homes (over and above those already committed to) are used as an input, and then proportionate allocations are made for the quantity of supporting non-residential buildings typically required to support the housing. Hence the model covers the following types of new development:

- Residential
- Nurseries and primary schools
- Secondary Schools
- Libraries
- Community centres
- NHS
- Commercial space

The model is built using real data including, but not limited to:

- Local energy performance certificates (EPCs) and LSOA energy use (so that the buildings' total energy use is included, not just 'regulated' energy as per building regulations)
- Densities and infrastructure requirements of recent local developments representative of each spatial location, using recent planning applications

- Existing local plan guidance and data (e.g. space standards; affordability; school place requirements)
- Occupancy and population projections from Cambridge Insight⁵
- BEIS/DEFRA national data on electricity grid carbon intensity, including future projections to the end of the plan period and beyond
- Benchmark embodied carbon of contemporary buildings
- Carbon reductions (operational and embodied) that are typically achieved via changes to building design (fabric, heating system and solar panels) recommended by green building industry expert groups

Transport data and assumptions

Transport carbon emissions have been estimated using local BEIS and Census per capita carbon emissions data. This is then calibrated on a scale from 0 -10 representing the potential for each mode of travel in each location type, undertaken by an experienced transport consultant using insight on travel distances and modal share from the Cambridge Sub-Regional Transport Model (produced for the purposes of other Local Plan studies).

The tool starts with each local authority areas' per capita transport CO₂ emissions released annually by BEIS. Because there is in fact variation within local authority areas, our transport consultant then calibrated these emissions on a sliding scale of ten equal intervals from 'best' to 'worst' using data on commuting modal share and trip length in different local neighbourhoods. The consultant then made professional judgements on the potential improvements to carbon emissions if sustainable travel initiatives were enacted for each travel mode in each category of location. Please see [appendix on transport methodology](#) for more detail.

Location categories represented in the model

Using the real local data described in 'buildings' and 'transport' methodology as above, the model offers six types of location category within which the emissions of each home would be expected to be roughly similar (including associated infrastructure). Those six categories are:

- Urban
- Edge of city greenbelt
- Edge of city non-greenbelt
- New settlement
- Village
- Public transport corridor.

The characteristics that differ between these different categories (and affect their carbon emissions) include:

⁵ <https://cambridgeshireinsight.org.uk/>

- Typical density (affecting home size, heating demand, amount of materials, number of storeys, and amount of roof space available for solar panels)
- Amount of additional infrastructure needed per new home (because new settlements need new schools, offices and so on, while new urban development can sometimes share existing infrastructure)
- Transport patterns of the new residents.

The tool allows us to enter any number of homes in each location category, to reflect how growth is distributed within each spatial option as per the strategic options and growth scenarios figures provided to us by Greater Cambridge Shared Planning service.

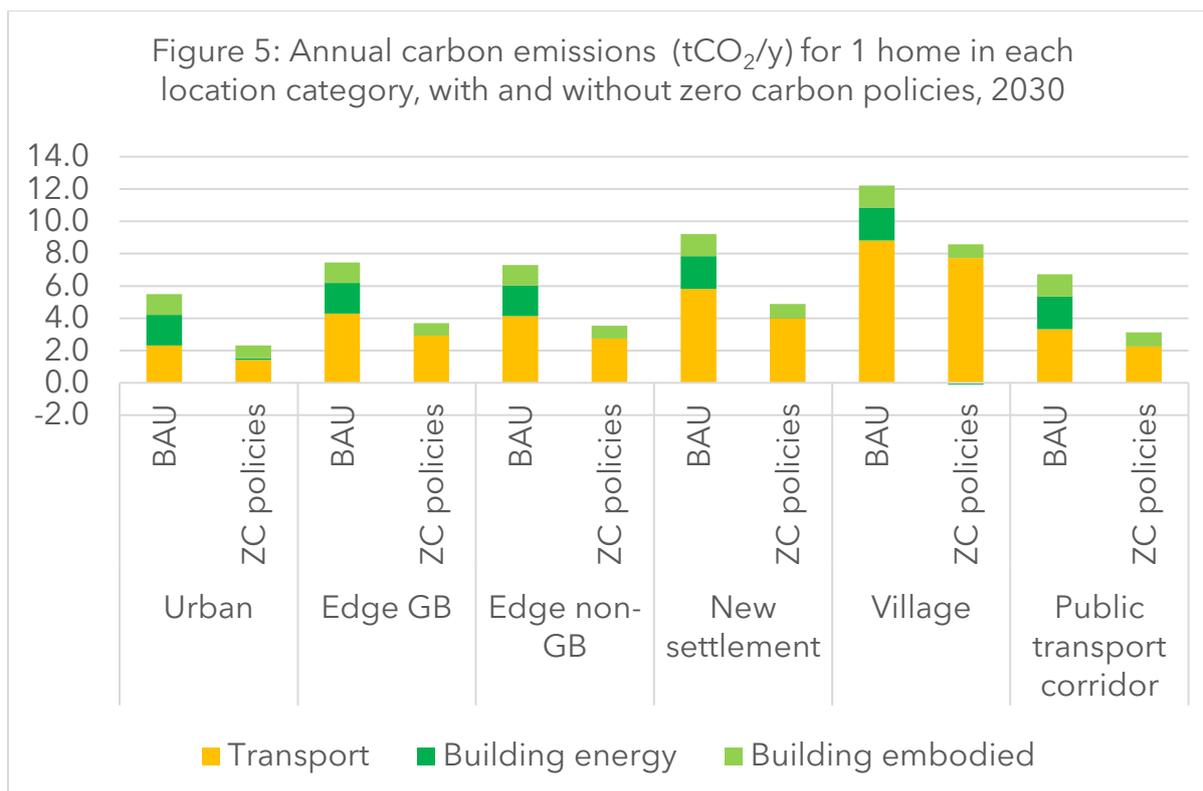
Effects of zero carbon policy

The model offers a range of options to apply policies to reduce carbon emissions in energy use, buildings' embodied carbon, and transport. For this report, the following two policy regimes have been modelled:

- 1) Business As Usual (BAU) - based on current typical practice and transport.
- 2) Zero Carbon Policy (ZC Policies):
 - a. Apply best in class space heating standards (15 kwh/sqm) in both homes and other buildings
 - b. All new homes to use heat pumps, no domestic gas boilers
 - c. All new non- domestic buildings to use heat pumps, no gas boilers
 - d. On site renewable energy generation at new buildings - PV
 - e. Embodied carbon of new buildings - 40% reduction over baseline
 - f. Energy Performance gap - medium level of mitigation in new builds (+25% on modelled energy)
 - g. Transport: Potential - increased sustainable travel initiatives
 - h. 10% of private vehicles are electric (average across plan period⁶).
This links to the electricity grid carbon intensity for the selected year.

The following chart (Figure 5) shows the annual carbon emissions for 1 home depending on the location category, in the mid-plan year of 2030.

⁶ A transition to electric vehicles is underway, but is slow. EVs represent [less than 1% of the fleet today](#). Scrappage data show that vehicles remain on the road for an average of 14 years from first sale, so there will be many second-hand petrol and diesel vehicles in use long after all new car sales are electric (which is late in the plan period, 2035). For the purpose of planning for net zero carbon, it is important not to be over-optimistic on this.



Interpreting GCSP growth figures and calculating total plan period CO₂

The model was run for the following spatial growth options:

1. Densification
2. Edge of city, non-Green Belt
3. Fringe of city, Green Belt
4. New settlement
5. Villages
6. Public transport corridors
7. Integrating homes + jobs
8. Expanded growth area

The low growth scenario brings 3,900 new homes, medium growth is 9,800; and high growth is 17,700. As previously noted, the **8 options are titled according to where the majority of growth happens**, but **most options also include some growth in other location types**. Details can be found in the Greater Cambridge Local Plan: strategic spatial options for testing - methodology document.

Each of the 8 options was modelled by inputting the anticipated numbers of new homes into the appropriate location categories that our tool offers: urban, edge of city (Green Belt or non), new settlement, village, or public transport corridor. We used location categories that best represent the appropriate density and transport options, often across multiple categories in our tool. Where the GCSP growth numbers specify a particular site or type of location, we took that into account.

For example, in Option 6 (Public Transport Corridors) in a medium growth scenario, the total of 9,800 homes is distributed as follows:

- Villages with public transport (5,400 homes, entered into our tool under the category 'public transport corridors')
- New settlements with public transport (2,500 homes; entered into our tool under the category 'public transport corridors')
- An emerging Cambridge suburb next to a train station (1,900 homes; entered into our tool under the category 'urban').

The model provides results for any given year, based on the carbon intensity of the electricity grid at that time (using central government projections). To model the total emissions for the plan period (2020 - 2041), we have assumed an even rate of build-out each year from the first year, reaching the total amount of new growth in the year 2041. To simulate this, we modelled what the annual emissions would be if all homes were built and completed in the mid-plan year of 2030 (representative of the average emissions across the plan period because the decarbonisation of the electricity grid is projected to be fairly steady from now to 2041). We then divided that total by 2 to reflect that it is half-way through the linear build out rate assumed. We then multiplied that figure by the 21 years in the plan period (2020-2041 inclusive) to reflect the total cumulative emissions. In effect, this models a consistent build-out rate year on year.

Results and analysis

Comparative results, mid-plan

In order to better understand the underlying drivers behind the different level emissions from each option, Table 2 and Figure 6 both show the breakdown of emissions per source: transport, building energy and embodied carbon. The table is colour coded for the relative level of emissions by source for each spatial option.

Here we have run the model for the mid-plan period year (2030), for the medium growth scenario, with the [zero carbon policies](#) applied. The difference between the spatial options would be similar for any given year or growth scenario.

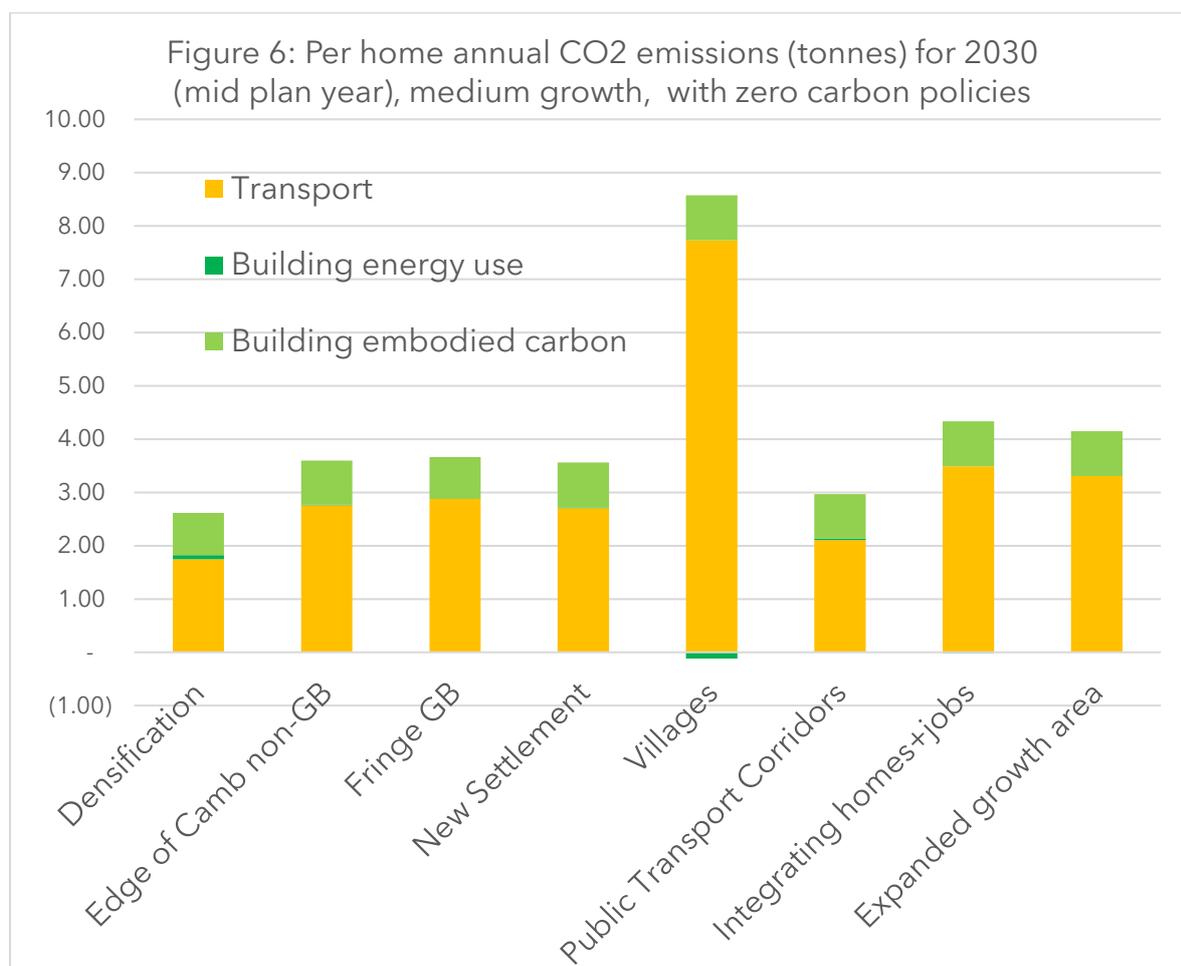


Figure 6 Annual carbon emissions for 2030 under medium growth with ZC policy

As can be seen from Figure 6, transport carbon shows by far the most significant variation across the spatial options (+342% variation between lowest and highest). The primary determinant of how each option compares in terms of its carbon emissions is the quality of access to public, active, and low carbon travel modes, and the need to travel regularly. This is why Option 1 (densification) and Option 2 (public transport corridors) perform so much better than Option 5 (villages).

Carbon emissions from building energy use is less variable (166% variation between lowest and highest). Since we have applied zero carbon policies which

include best-practice in energy efficiency, buildings' energy use emissions are then most affected by the ability of each building to provide enough solar PV panels to offset the electricity demand on site. Lower-rise schemes, which would be more typical in villages and new settlements, have a greater ratio of roof space to internal area, and therefore a greater capacity to meet their own electricity demand from an **on-site** renewable (zero carbon) source⁷.

Embodied carbon is almost consistent across the scenarios (+7% variation between lowest and highest). The minor change is dependent on the modelled development mix between flats and houses and number of bedrooms. This affects the amount of materials used for construction per dwelling created, as higher rise flats use less material per dwelling than low density detached housing. There is also a difference in the level of required new infrastructure (schools, libraries, health facilities etc) depending on the location of the housing, which in turn has its own embodied carbon associated with its construction.

Please see Table 1 for a more precise numerical breakdown of how each spatial option performs for carbon emissions from each of the three sources (building energy, building embodied carbon, and transport).

⁷ Whilst more dense development does have a slightly more efficient thermal envelope (flats have fewer external walls, floors and ceilings than detached housing) this only slightly counters the more dominant effect of the ability to provide sufficient rooftop PV to offset the building energy use carbon. This is particularly the case once zero carbon policies have been applied to improve energy efficiency to the highest levels. The remaining operational carbon emissions from dense schemes' energy use could be helped via contributions to offsite renewables, as explored in a separate task (F) described in the introduction.

Table 2: Annual carbon emission per home (tonnes of CO₂ per year) for 2030, medium growth, with zero carbon policies.

This table is an alternative way to show the same information as in Figure 6.

Please note: the red-amber-green colour coding in the tables is allocated per row (comparing spatial options across each emissions source), not across the whole set of combinations of emissions sources and spatial options.

-	1	2	3	4	5	6	7	8
ZC Policy Med Growth, 2030	Densification	Edge of Camb non-GB	Fringe GB	New Settlement	Villages	Public Transport Corridors	Integrating homes+jobs	Expanded growth area
Transport	1.75	2.76	2.88	2.71	7.73	2.11	3.49	3.31
Building energy use	0.08	0.01	0.00	0.01	0.12	0.03	0.02	0.00
Building embodied carbon	0.79	0.82	0.78	0.84	0.84	0.83	0.84	0.83
Total annual CO₂ (tCO₂/a) in 2030	2.61	3.59	3.66	3.56	8.46	2.97	4.32	4.15

To compare the individual drivers of the carbon coming from the highest and lowest carbon emitting options, see figures 7 and 8 below. Each shows the respective proportions of emissions by type of development, plus transport, in our mid-plan sample year with medium growth and with zero carbon policies. This demonstrates not only that village development has a higher proportion of its emissions due to transport, but also the different ratios of flats to houses and non-residential spaces in each respective location.

Figure 7: Sources of CO₂ - Option 5 Villages, 2030, with zero carbon policies

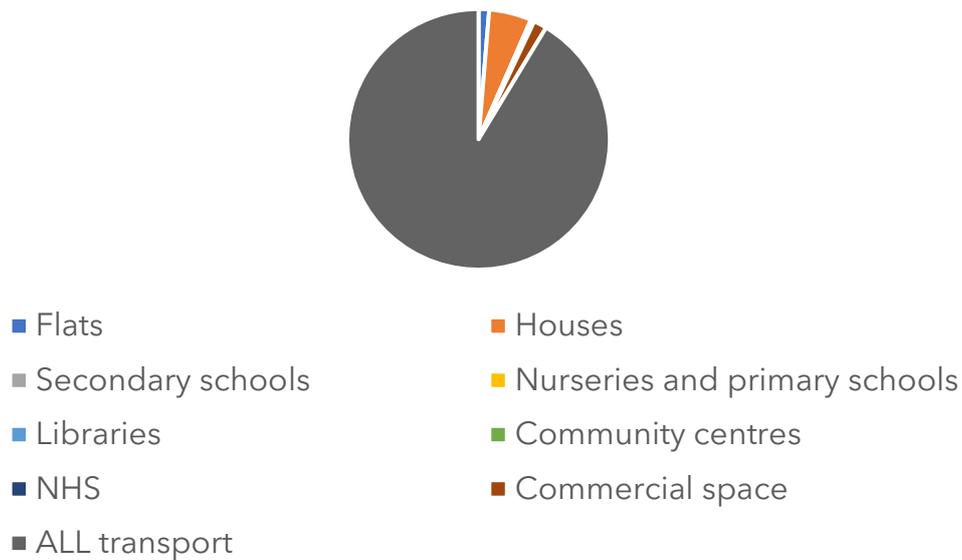
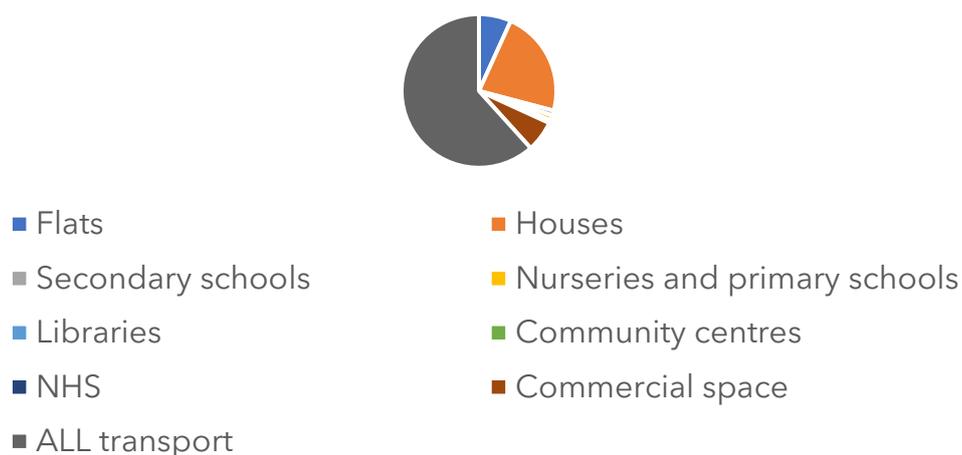


Figure 8: Sources of CO₂ - Option 1 Urban densification, with zero carbon policies



See table 3 in the [discussion section](#), for a narrative explanation of the emissions performance of each growth scenario in 2030, medium growth, with zero carbon policies.

Total plan period emissions with and without zero carbon policies

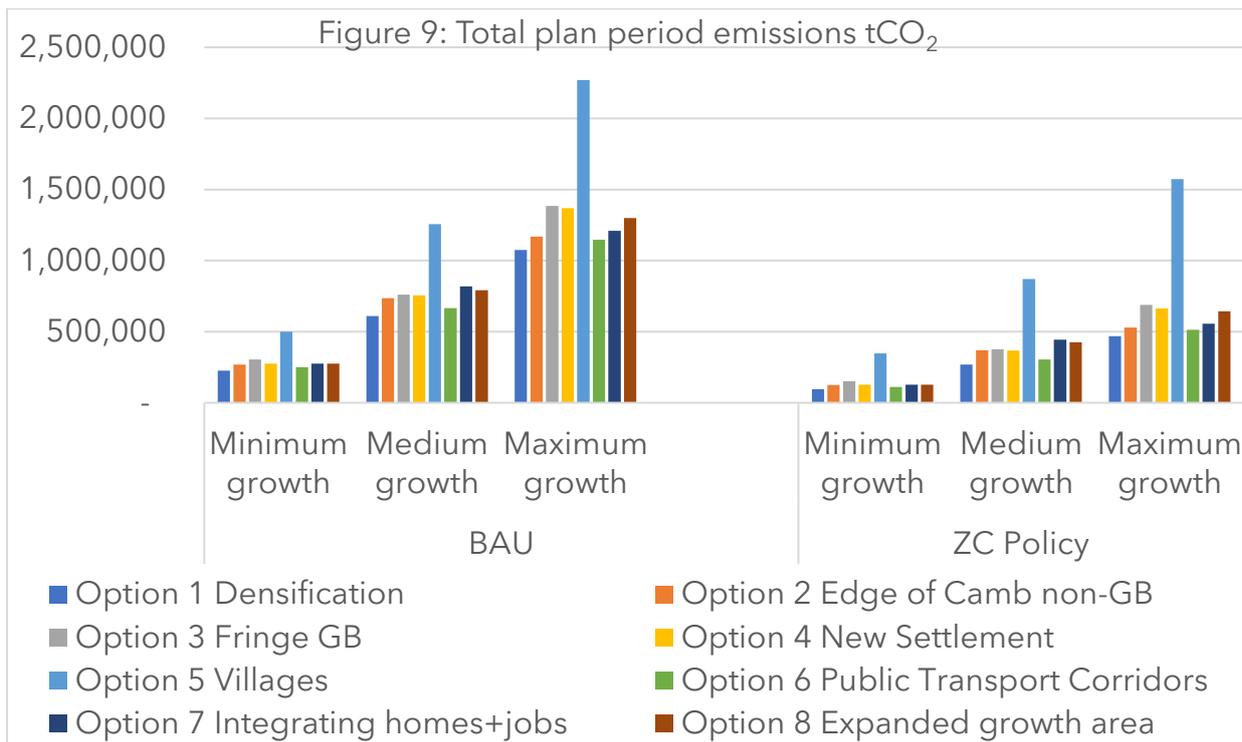
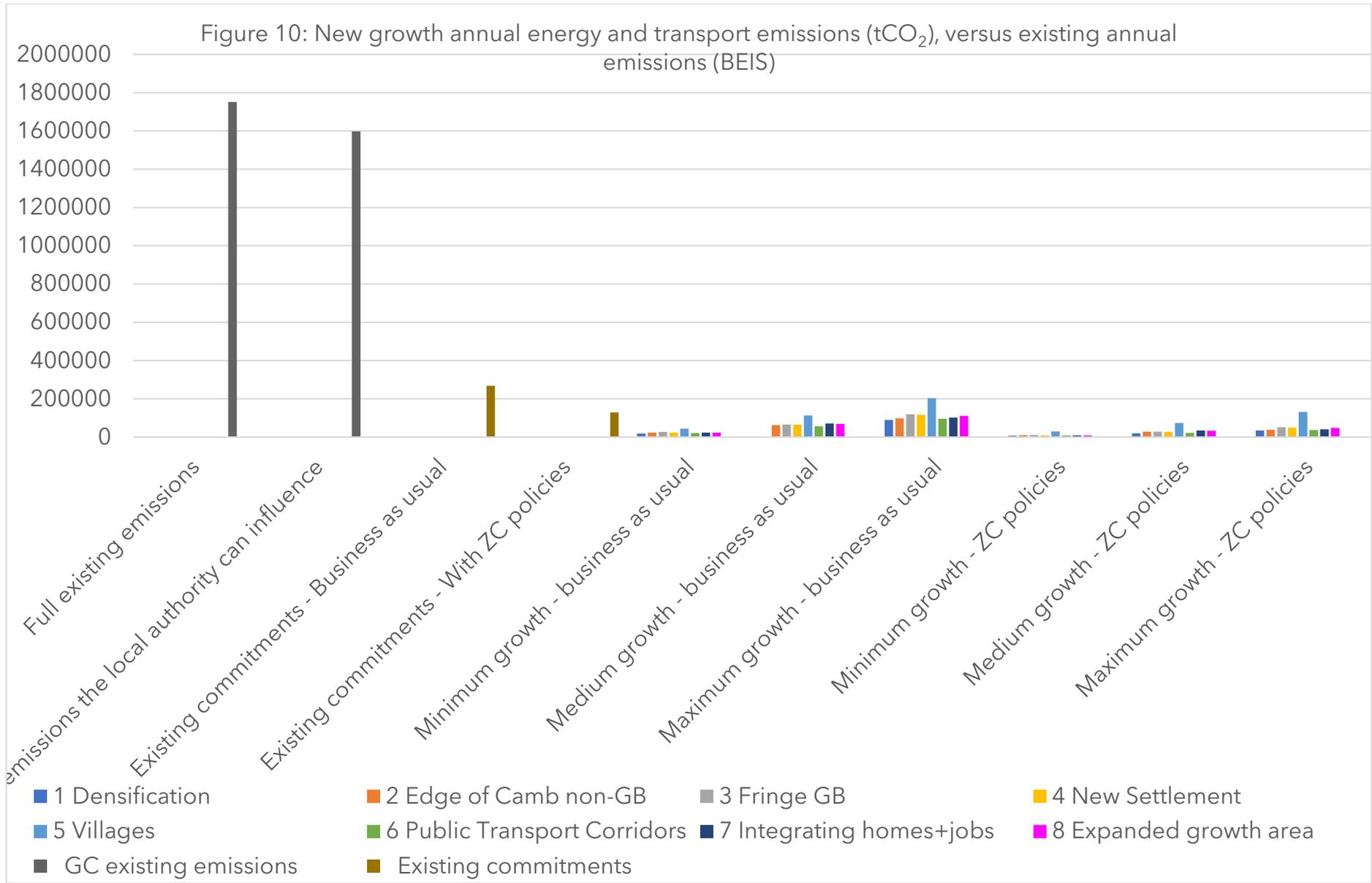


Figure 9 shows the carbon emissions generated by all proposed new growth across the plan period⁸. For simplicity, we have assumed an even rate of growth (build out) per year from 2020 to 2041.

Figure 10, overleaf, compares Greater Cambridge’s existing annual emissions to new growth emissions if all new growth were completed today. This gives an impression of the scale of impact. 2020 is selected because it the most comparable to the ‘existing emissions’ data, which is from 2018. The tool includes reductions in the carbon intensity of grid electricity over time.

As well as the 3,900-17,700 new homes that the new local plan seeks to enable, Figure 10 also includes a very rough estimation of the emissions associated with growth that the planning service has already committed to but is not yet built (36,407 new homes). The actual emissions from these 36,407 committed homes will depend location and the energy performance. We did not have access to this information at the time of writing, so we have applied an emissions rate matching the average across all our location categories. We will be refining towards a more accurate figure by working with GCPS to understand the location and energy performance in greater detail.

⁸ This does not include upcoming growth that is already committed to but not yet built, because its location has already been determined.



Discussion

The results show that most options and growth scenarios result in a **very small increase on existing overall annual emissions** from Greater Cambridge. The exception is if **maximum growth** takes place, entirely within the **'villages' option**, and with **'business as usual'** construction and transport. This would represent an **increase equivalent to 12% of Greater Cambridge's existing annual emissions**. If growth is the **minimum** and takes place entirely within the **urban** option with **zero carbon policies** applied, the **increase is only 0.4%**. Applying zero carbon policy with medium growth in most other options would result in an uplift of 1 to 2% on existing emissions, or 4% if the villages option is chosen.

The results therefore make a strong case for choosing a spatial option with a strong focus on minimising the need for private cars.

The results also show that applying zero carbon policy achieves dramatic improvement. These policies would allow the maximum growth scenario to take place with less additional carbon emitted than in medium growth with business as usual, except for in Option 5 Villages. We can also see that after zero carbon policies are applied, the difference between the best and worst options becomes more pronounced: the 'Village' option emits about twice as much as 'Densification' in business as usual, but when zero carbon policies are applied, village growth emits nearly 3.5 times as much as urban growth. This is because transport is villages' weak spot, and policy has less effect on transport than on buildings.

With the exception of the outlier (Option 5, Villages), there is only about a 20% to 40% difference between the remaining spatial options compared to the lowest-carbon option (Urban Densification). Once outside the most dense and walkable / cyclable urban area, the key to the difference between options is the number of homes that are specified to be on public transport in the GCSP growth figures.

To illustrate this, it is useful to focus on the difference between edge-of-city green belt and edge-of-city non-Green Belt. Our tool itself does not recognise much carbon difference between these two types of development locations (see figure 5 for a comparison of 1 home in each of the spatial locations). However, a difference appears in the modelled scenarios due to the mixture of *locations* in the figures provided by GCSP for each growth scenario. Option 2 (Edge of Cambridge - outside the Green Belt) specifies the North-East Cambridge area as a key growth site. This is next to a train station and is likely to achieve relatively high densities, so homes at that site were modelled as an 'urban' location, in addition to that option's other homes which are in 'new settlements on public transport corridors'. In contrast, in Option 3 (Edge of Cambridge - Green Belt), no specific locations are mentioned. This option has a small number of homes in the urban centre, but the majority in unspecified greenbelt sites. Therefore, we have assumed a suburban density and transport context, for the greenbelt sites. This could improve dramatically if greenbelt sites were on direct regular public transport links.

Even under the best-performing spatial option with the 'zero carbon' policies applied, there is still a tiny amount of carbon emitted from buildings. This is due to the assumed imperfect effect of the zero carbon policies on buildings: there will still be some energy performance gap (+25%) and embodied carbon is only partially reduced (-40%). (It is dwarfed by the transport carbon - see next section).

Buildings' remaining carbon from energy use could be eliminated if additional renewable energy were deployed at pace with new buildings, in addition to the solar panels on the buildings' own roofs. New large-scale renewable energy will be necessary in any case for Greater Cambridge to make its wider transition to zero carbon as per the UK's legal commitment in the Climate Change Act, to address the 'existing emissions' shown in figure 10.

There are further measures that could be implemented, beyond the zero carbon policies that have been modelled here for spatial comparison purposes. These will be discussed and explored elsewhere as part of our work on Tasks C, D, E and F.

If the local plan requires all new homes and buildings to include the maximum possible amount of solar electricity generation on their roofs (ideally including optimised roof orientation and design), then many buildings up to three storeys could export more energy than they consume. In reality large development sites will have a range of densities within them, so plan policy might require additional rooftop PV to be provided in the lower-density parts of the site, to help offset the lack of PV due to reduced roof area of higher density parts of the site. In a separate part of our work, we are modelling how feasible it would be to implement this kind of requirement, what the cost uplift would be for the new buildings to provide this additional PV, and whether offsetting could fund this.

Further steps towards neutralising the remaining carbon from buildings, over and above the zero carbon policies already applied, are explored in other workstreams, and could include:

- Even greater mitigation of the energy performance gap, through better build quality and monitoring
- Even more mitigation of embodied carbon of buildings, perhaps using design codes that encourage timber and recycled materials and discourage cement, concrete, steel and aluminium.

The role of transport

After zero carbon policies are applied, the vast majority of the remaining carbon comes from road transport, where habits are notoriously difficult to change. Carbon reduction policies have a less direct, less guaranteed effect on actual transport carbon than they do on buildings energy use and materials.

A potential shift to electric vehicles (EVs) is underway. The modelling is designed to be ambitious but not overoptimistic in this regard, with the 'zero carbon policies' regime including an average of 10% of vehicles being electric in all years.

This is because EVs are currently less than 1% of the overall vehicle fleet (the transition has been slower than anticipated), and the current Government's national ban on sales of new fossil fuel cars comes near the end of the plan period. Existing fossil fuel cars currently remain on the road for about 14 years from first sale, causing a lag in the rate of change in the overall fleet. Governments ban on the sale of fossil fuel cars also only applies to new vehicles, so the second-hand car market will still see the sale and use of fossil fuelled vehicles. Furthermore, it is not impossible that this future ban will be moved or discarded (as was the national zero carbon homes policy that was meant to come into force from 2016). As such, for the purposes of this report in considering the role of new development, it is important to not overstate the transition to low emissions vehicles.

If a sudden shift to EVs does happen in the plan period - for example as a result of legislation, market changes, or a scrappage scheme - the transport emissions from less connected locations would be reduced. If development in more rural sites is not on a high quality public transport link, policies should be in place to ensure that the development supports all residents to switch to EVs from first occupation, through the provision of EV charging infrastructure and the role of travel plans.

It is important to note that a switch to EVs does involve raw materials and energy use to produce the vehicles, therefore active and public transport should still be considered preferable. This is out of scope for our study, although academics in Cambridgeshire⁹ recently found that the whole-life carbon of EVs is still better than that of conventional vehicles, due to avoided fossil fuel use.

Our modelling cannot account for the fact that growth in some settings could result in step changes to transport patterns of *existing* households as well as new homes. For example, if a village develops into a town with more facilities, that could reduce the amount of car trips that existing residents take, or reach a size that would attract better facilities, more public EV charging, or better quality public transport links. However, this is an optimistic scenario, and any step change may not manifest for many years, if at all. Furthermore, growth may also attract people from further away to travel greater distances to visit, offsetting some or all of the benefit. We have not gone into this level of complexity, in order to avoid overestimating nor underestimating these effects, which would be on a very localised scale for each location. It is important not to be over-optimistic about making shifts to established transport habits, and therefore from a carbon point of view it is most effective to focus growth choices on reducing car dependence.

Table 2 provides a breakdown of how homes are distributed across different sites in each spatial option under the medium growth scenario. With zero carbon policies, we explore how the level of carbon emissions are affected accordingly.

⁹ Cambridge University Science Policy Exchange (2019), 'Net Zero Cambridgeshire: What actions must Cambridgeshire County Council take to reach net zero carbon emissions by 2050?' [Available here](#).

Table 3: Description of the driving factors for carbon emissions for each spatial option in a **medium growth** scenario (total 9800 homes), in the year **2030**, with **zero carbon policies**, in order of best to worst climate impact

Option with medium growth and ZC policy	Carbon emissions per home for 2030 (tCO ₂ /y)	Description
1 Densification	2.61	This option has the majority of homes in urban settings (7,500) and some suburban (2,300). This results in the best public and active transport access of the scenarios and the most efficient materials use for higher rise construction in places with lower requirement for new supporting infrastructure. This is slightly counter balanced by having the least ability of the scenarios to provide enough on-site PV panels for the homes' electricity demand, so net emissions from home energy are actually the highest of the scenarios. Adding offsite renewables matched to their remaining energy demand could alleviate this.
6 Public Transport Corridors	2.97	This option has a mixture of homes in urban settings (1,900) and settlement on public transport corridors (5,400 homes in villages on public transport, and 2,500 in new settlement also with public transport corridors). Hence it has opportunities to reduce car use and therefore second lowest transport carbon. This is slightly countered by a medium efficiency of materials used due to the mix of low and higher rise construction, and a mixed ability to provide enough on-site PV panels for the same reason.
4 New Settlement	3.56	This option is all homes in new settlements on a mixture of public transport corridors (7,350) and on road network (2,450). This creates mid-range transport carbon emissions. It is modelled at mid-density; hence the building energy emissions are in the middle. However, embodied carbon is high due to the need for additional supporting infrastructure and the predominance of larger houses rather than more efficient flats.
2 Edge of Camb non-GB	3.59	This option allocates homes across four different settings - urban densification (1,900), edge non-GB (1,900), new settlements on public transport (5,000) and rural villages (1,000). This produces a very even blend, and hence mid-range emissions across the three sources of carbon emissions.

<p>3 Fringe GB</p>	<p>3.66</p>	<p>This option is based on the majority of homes on the urban fringe within the Green Belt (9,500) with a few in urban densification (300). The urban fringe is assumed to have medium public and active travel accessibility and hence transport emissions. It is of medium density, hence medium ability to provide renewables on-site and therefore medium building energy emissions. It is the second lowest for embodied carbon due to having a reasonably high number of flats and smaller houses, but predominantly due to low assumed new supporting infrastructure due to the accessibility of nearby existing facilities.</p>
<p>8 Expanded growth area</p>	<p>4.15</p>	<p>This option allocates homes across urban (1,900), along public transport corridors (5,740) and dispersed villages (2,160). Hence, this also produces mid-range emissions across the range of emissions sources. The transport is slightly higher than average due to the development in dispersed villages.</p>
<p>7 Integrating homes+jobs</p>	<p>4.32</p>	<p>This option has the majority of homes in new settlements on transport nodes (7,610), with some homes in dispersed villages (2,190). The effect of this is to create the second highest carbon emissions overall, predominantly due to the transport emissions from the dispersed village homes. There is also more embodied carbon due to the lower density housing and significant new supporting infrastructure required for new settlements and villages.</p>
<p>5 Villages</p>	<p>8.46</p>	<p>This option is based on all homes (9,800) in village settings, not specified in the GCSP growth figures to be on any particular transport links. This is therefore the worst transport emissions by a substantial margin and a slightly higher embodied carbon due to low rise detached housing and necessary new supporting infrastructure. In contrast, it has the best net building energy performance (managing to be a net exporter of zero-carbon energy), because the lower density makes it the most able to provide substantial renewable energy on-site through rooftop PVs. Overall, the carbon cost of the transport far outweighs the smaller benefit from the increased PV, making this the most carbon intensive option. If the villages were on public transport (as they were in option 6) this option would not perform quite so badly.</p>

Conclusion

In planning for the growth of Greater Cambridge in response to national targets for house building and employment growth, the GCSP must balance economic growth with a reduction in emissions, in order that new development can play its part in enabling Greater Cambridge to achieve net zero carbon by 2050. Our analysis of the carbon implications of the spatial strategy show us that with the implementation of zero carbon policies, the emissions associated with buildings' energy use can be reduced to near-zero and their embodied carbon can also be significantly reduced.

Transport emissions are the deciding factor in the carbon differences between spatial options. These are harder to deal with purely via policies within the local plan, and are most strongly affected by where development takes place.

Option 1 Densification has the lowest carbon emissions, with Option 6 Public Transport Corridors a close second best. Option 5 Villages is by far the highest-carbon option, with 2 - 3.5 times as much carbon emissions as Option 1 Densification. This is largely due to the significantly larger modelled use of private cars as the only realistic transport for most trips by most village dwellers¹⁰. By contrast, Option 6 Public Transport Corridors has some village homes that *are* specified to be on good public transport, and therefore were modelled as such.

There are also small differences in carbon emissions due to the lower density of typical village developments compared to more compact urban homes. With current construction practices (lacking zero carbon policies), larger and lower-rise homes have worse carbon emissions from building energy and embodied carbon, due to more floor space and building envelope and predominantly heated by gas boilers. However, if carbon reduction policies are applied - which include the maximising solar panels, efficient fabric and heat pumps - then the low-rise homes can achieve a carbon reduction benefit because they can fit more solar panels per dwelling on their roofs than they need to fulfil their own energy needs, thus exporting net excess energy to the grid over the course of a year. Nonetheless, in our modelling this does not cancel out the significant carbon disadvantage of increased car use in poorly connected rural locations.

Differences between other spatial options largely relate to the public transport links of the anticipated sites. For example, a key site considered in option 2 'edge, non-Green Belt' is next to a train station and many of this option's other homes follow a relatively dense urban pattern. Homes at that site were modelled as 'urban'. In contrast, 'fringe Green Belt' sites are unspecified and therefore treated as suburban and not quite so well connected to public transport.

¹⁰ The homes in Option 5 were not specified to be in villages with good public transport or active travel options.

The effect of applying zero carbon policies is dramatic and would, for example, allow maximum growth to take place with less carbon emitted than in medium growth without zero carbon policy, except in the Villages scenario. These policies require that buildings are highly energy efficient, are built to a high quality, use low-carbon building materials, never use fossils on site, and generate most (or all) of their own electricity with renewables. The policies also improve transport by supporting EV use and promoting active and sustainable modes as much as possible for each spatial location.

With a full shift to electric vehicles still a long way off (considering the time lag lifespan of fossil fuel cars from first purchase as previously explained), from a carbon point of view it is best to focus growth choices on minimising car dependence. The choice of spatial option (and public transport provision, if not in a central urban location) is therefore crucial to reduce carbon emissions from transport associated with growth.

Appendix: carbon modelling tool methodology

This section outlines the methodology behind the spatial modelling tool.

It should be noted that this exercise is highly innovative in plan making, and to our knowledge no precedent or commonly accepted approach exists. Hence, we have had to devise a new methodology using the available reliable data, and industry experience and judgement of the expert partners involved.

This is the first iteration of this modelling methodology, which will no doubt evolve over the plan making period.

We are currently exploring options for how we may be able to prepare and share greater detail behind the tool going forwards.

Objective: To develop a tool that can assess and compare the high-level energy and carbon implications of development in different spatial locations.

As explained in the body of this report, the tool models the following three key sources of carbon emissions, which were felt to represent those most relevant to a spatial decision on where to allocate growth:

- 4) **Embodied upfront carbon** from building construction materials and processes.
- 5) **Operational carbon** from building heating and electricity usage.
- 6) **Transport carbon** from occupant transport.

1. Embodied upfront emissions are largely dependent on the volume of development created. This is determined by the development mix - the total square metreage of each different typology of building, which varies according to the location. For example, urban locations tend to have homes with smaller number of rooms, built at higher density and higher rise non-residential buildings.

2. Operational carbon emission are largely dependent on the above development mix factors multiplied by the energy use intensities (that is, energy use by type and use - domestic and non-domestic, regulated and unregulated, and so on).

3. Transport emissions are largely determined by the access to public and active travel modes, and proximity to amenity and employment. See the separate appendix chapter on the transport methodology adopted.

Methodology

Development mix was established as follows:

1. Representative development densities (dwellings per hectare, dph) were established for each spatial location from the local plan development

schedule and policies where available. These were cross checked against recent actual planning applications.

2. The number of types, bedrooms and gross internal area (GIA) was then based on local plan guidance and standards (such as % affordable, and minimum space standards).
3. The house types, bedrooms and the tenures were then converted into new population using local plan multipliers including people per household, adults, children, and so on.
4. These estimated populations were then used to establish approximate infrastructure requirements (non-domestic buildings) referencing relevant planning obligations and S106 contributions¹¹.
5. We then undertook spot checks for the infrastructure requirements against planning applications data for different locations.
6. The derived housing density and development mixes per spatial location were then peer reviewed by an experienced master planner (Perkins & Will).

Energy use intensities (EUI) were established as follows:

1. Domestic EUI was modelled using PHPP for indicative housing types (detached, semi-detached, flats) based on actual recently approved planning permissions. The baseline modelling was to current Part L Building Regulations compliant standard (nationally regulated minimum performance). This modelling included assumptions around occupancy and appliances to produce unregulated as well as regulated¹² emissions.
2. Non-domestic EUI was calculated using the DEC database to download Greater Cambridge post code specific samples of recently completed buildings - no older than 5 years and EPC A to C, under the categories of Sports facilities, Community Centres, Offices, NHS, Schools and Nurseries.
3. These EUI are then converted into carbon emissions for a specific year within the plan period using Treasury green book data for greenhouse gas emissions for appraisal¹³. This takes into account what proportion of the energy use is gas, electricity or other, including the gradual decarbonisation of the electricity grid into the future.
4. Associated solar panel electricity generation was calculated for the following scenarios, assuming 350W per monocrystalline panel:
 - a. Houses/non-resi: Duo roof archetype (average orientation: south-east; south-west/30 degrees) assuming use of 50% of roof area.

¹¹ Section 106 is a planning tool negotiated between the planning authority and the developer to make a development acceptable. It often takes the form of a payment by the developer towards an amount of necessary infrastructure.

¹² 'Regulated' emissions are the emissions associated with 'regulated' energy use. Regulated energy use is the part of a building's energy use that is controlled by national building regulations - that is, space heating, hot water, ventilation and permanent lighting. 'Unregulated' energy use is due to plug-in appliances.

¹³ [Available here](#).

- b. Flats: Flat roof archetype (average orientation: south-east; south-west/flat) assuming use of 80% of roof area.

Embodied carbon emissions were established as follows:

1. Embodied carbon factors for kilogrammes of CO₂ per square metre of gross internal area were sourced from the London Energy Transformation Initiative Embodied Carbon Primer¹⁴ which provides factors for residential, commercial and schools.
2. Total upfront emissions were then divided by an assumed 60-year lifecycle to allocate a per-year emissions allowance for each building.

¹⁴ Please see Embodied Carbon Primer, [available here](#).

Appendix: transport assumptions

Our transport consultant devised a modelling method for how transport carbon emissions vary between different spatial locations in the plan area. This method is anchored in BEIS nationally reported benchmark data from the Greater Cambridge area, further refined by using a rating scale of modal choices for each spatial location type and finally calibrated against outputs from the Cambridge Sub-Regional Model (CSRM) for transport. Some important distinctions between these methodologies are further discussed at the end of this section.

Our transport tool starts with the most recent annual per capita transport CO₂ emissions for Cambridge City and for South Cambridgeshire respectively, from the subnational emissions figures released annually by BEIS. This is the best currently available data on the average person's transport emissions in these two locations.

However, we also want to further calibrate that data to reflect the variation in transport habits *within* both of those local authority areas, ranging from central urban dwellers who walk, cycle or use public transport for most purposes, and vice versa for rural dwellers without good public transport who do not tend to be able or willing to walk or cycle to their place of work, school, shops and amenities.

To calibrate a range of emissions in each BEIS location, our transport consultant used the latest Census data (2011) about the percentage of journeys to work that are made by car in different locations (available at a much finer grain, down to neighbourhood level).

The consultant then used this percentage of car commutes as an indicator for people's general lifestyle car use and applied it to each of the BEIS per-capita transport emissions. This gave a minimum and maximum per capita transport carbon figure.

The transport consultant then set a scale of emissions from 'lowest' in the urban setting to 'highest' in the most remote village setting. Each location was scored for each transport mode from 0 to 10 based on the transport consultant's expert opinion of the locations. Each location was given an overall 'current' and 'potential' transport score based on the average across all modes. The 'potential' score is an improvement based on our consultant's expert opinion on the extent to which sustainable transport initiatives could improve sustainable modal share for that specific location.

The transport consultant then cross-compared the interim results with data from the CSRM (predicted modal share and trip lengths specific to the Cambridge region) to make sure our modelling approach concurred in terms of profile across the different spatial locations.

The carbon values for transport are effectively a high level estimation based on a top-down allocation of a proportion of the regional average, based on localised

travel data. In contrast the carbon emissions for buildings are based on a 'bottom up' modelling per building type. They also are not sensitive to 'tipping points' such as if a village were to grow into a town that can achieve more trip containment. However, because they are still anchored to actual regional data on per capita emissions, trip lengths and car use, we believe they are still within a reasonable range. Most importantly, since the purpose of this modelling exercise is to compare spatial locations, rather than produce accurate absolute emissions factors, we feel this is an appropriate approach.

In the 'zero carbon policies' scenario, we assumed an average 10% of private vehicles are electric across the plan period. We believe this is reasonable given that it is currently less than 1%, and the proposed national ban on sales of new fossil fuel cars comes near the end of the plan period. This ban does not affect the second-hand car market, and existing fossil fuel cars will remain on the road for circa 14 years from first sale, causing a lag in the rate of change in the fleet.

Important distinctions between our modelling and the CSRM

As discussed, our transport impacts methodology has been calibrated with reference to the parallel transport study which has been undertaken using the Cambridge Sub-Regional Model (CSRM).

The specific CSRM outputs referenced are Percentage Mode Share of Trip Growth and Change in travel distance (Total pcu-kms) (Strategic Options vs 2041 Baseline); these can be found in the Transport Evidence Report.

Important distinctions between the two approaches are as follows:

- The Transport Evidence Report has at the time of writing been based on the maximum growth scenario. In contrast, our work models all three scenarios reflecting the slightly different blends of location categories for each. We provide separate outputs for each where possible, so care should be taken when comparing graphs.
- The Transport Evidence Report includes some transport schemes that are assumed to be in place by 2041 based on the level of confidence in their delivery. Our modelling provides the two distinct scenarios below, hence care should be taken to check which is being displayed in our outputs:
 - Business As Usual - reflecting the CSRM assumptions
 - Zero Carbon - the best possible score for each given location for walking, cycling and public transport, and with 10% of private car journeys by EV.
- Carbon emissions of transport are based on the compounding factors of 'journey distance' and 'mode', hence this will produce a more exaggerated profile (range of results) compared to that for journey distance or mode share alone. Hence, our transport carbon scores have been balanced against the minimum and maximum baseline emissions for Cambridge and South Cambridgeshire (BEIS) which range more significantly than the Transport Evidence Report results discussed.

- Specifically for New Settlements, the Transport Evidence Report includes all additional journeys generated, including those for surrounding settlements e.g. the 'draw' of incoming visitors from nearby villages who wouldn't have otherwise travelled to that location. Our own modelling is only focussed only on emissions created by the *new population* of the growth in question. We have adapted the car-based mode score for New Settlements to reflect the CSRM mode share results, but ultimately our model is not designed to capture the full extent of additional journeys beyond the new population. Hence, we produce a lower profile of carbon emissions (under BAU policy and maximum growth) for this category of location compared to the CSRM trip distance chart when viewed in comparison. This point is further explored in the appendix below.

Appendix: caveats and limitations

New development only

The tool looks only at the anticipated carbon impact of new development and the travel of the population associated with that new development. It doesn't account for any changes in carbon emissions in existing buildings, or existing residents' lifestyles as a result of new development happening nearby.

For example, if enough new growth happens that a village becomes a town that attracts more facilities and better public transport, then the existing villagers' travel patterns could improve. Or if the developer of new buildings provides a large number of public-realm electric-vehicle charging points with reserved parking for EVs, that could help existing residents and workers switch to electric vehicles.

Our tool does not attempt to predict or model such effects. It should be noted that transport habits are notoriously difficult and slow to change, once established.

Transport

Our tool estimates the carbon emissions from transport behaviours in different development patterns by taking the best and worst per-capita transport emissions from BEIS data on real locations in Greater Cambridge (urban and rural) and ranks each spatial option on a sliding scale according to how similar it is to those best and worst scenarios. Only terrestrial transport is included. A switch to electric vehicles applies to the private fleet only (this is also linked to the reduction in carbon intensity of the electricity grid as per national projections). See also [appendix on transport assumptions](#).

Embodied carbon

Our tool takes the typical embodied carbon of a building and divides it by a typical 60-year lifespan of a building (a standard industry assumption). This is so that it can be incorporated into the annual carbon figure generated by the tool. However, the plan period does not run for the whole 60 years, therefore the figure generated for carbon emitted within the plan period does not include the full embodied carbon amount which was actually generated up front. This would not make a difference to choices about spatial development options but would make a difference to policies or SPDs around sustainable building design or overall carbon targets. Embodied carbon covers buildings only, not vehicles.

Green infrastructure

The tool is not able to deal with the carbon emissions or sequestrations of the land use before and during development of greenfield sites. Grasslands and woodland are a net remover of carbon, while peatland can be a large emitter or remover of carbon depending on the state of the peat. Even when not actively removing carbon from the atmosphere, vegetation and soils are a 'carbon pool' (store). Drainage or excavation of carbon-heavy soil results in emissions as the soil organic matter breaks down; and can also prevent a site's ability to become a future

carbon sink. It is not yet possible to incorporate this factor into the spatial tool, for two reasons. Firstly, it would be necessary to know the specific site in question. Secondly, we do not yet have reliable data on the sequestration potential were each site to be restored as peatland or planted as woodland. This kind of data would need to come from the Green Infrastructure Study.

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Infrastructure Delivery Plan

Greater Cambridge Local Plan strategic spatial options assessment

Final report

On behalf of **Greater Cambridge Shared Planning**



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1 Introduction

Stantec UK with LUC have been appointed by the Greater Cambridge Planning Service (GCSPS) to produce an Infrastructure Delivery Plan (IDP) to guide and support the preferred spatial strategy for Greater Cambridge Local Plan.

In July 2020 we prepared a Scoping Report that identified the scope and method for preparing the IDP (Appendix A). This report represents an interim stage in the preparation of IDP by setting out the high-level infrastructure implications of the range strategic spatial options that GCSPS have developed; these findings will be used by the GCSPS to help develop the preferred option for the Local Plan’s spatial strategy. The IDP will then be developed with reference to this preferred option.

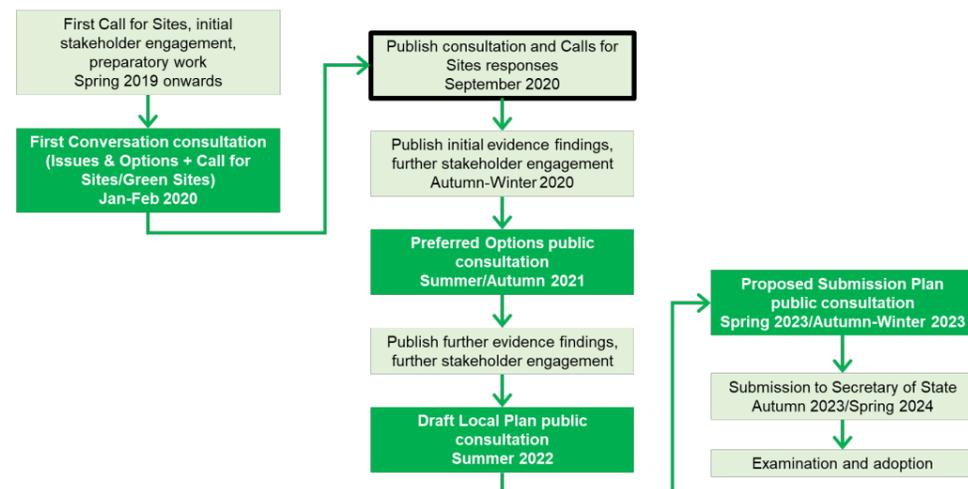
1.1 Background

Public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) was completed in early 2020. Building on the initial options set out in the First Conversation, the Councils (Cambridge City Council and South Cambridgeshire District Council) have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.

The Councils have asked consultants producing Local Plan evidence studies, including the IDP, to provide a high-level assessment of the strategic options with reference to their specific workstream. This report forms one element of that assessment.

The initial evidence findings will be reported to the Joint Local Plan Advisory Group in autumn 2020, and help to inform further engagement with stakeholders. Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below in Figure 1.

Figure 1 Process of Local Plan preparation



Source: GCSPS

The testing of the options will support the selection of a preferred spatial strategy, and associated site allocations in a way that meets statutory and national policy requirements.

The purpose of the IDP will be to demonstrate the deliverability of the preferred spatial strategy for Greater Cambridge, by ensuring that infrastructure, across a variety of categories, is planned in the right place and at the right time to enable growth.

1.2 Spatial scenarios

This report considers the high-level infrastructure implications of the eight spatial scenarios currently being explored for the emerging Greater Cambridge Local Plan, which are:

1. Densification of existing urban areas
2. Edge of Cambridge – outside the Green Belt
3. Edge of Cambridge – Green Belt
4. Dispersal – new settlements
5. Dispersal – villages
6. Public transport corridors
7. Supporting a high-tech corridor by integrating homes and jobs
8. Expanding a growth area around transport nodes

A table for each scenario showing the growth levels and broad locations is provided at Appendix B.

1.3 Infrastructure considerations

This is a high-level report, assessing in broad terms the infrastructure required to support growth at these eight spatial scenarios. The categories of infrastructure considered are transport, social and community, green infrastructure, sport and leisure, and utilities. In Section 2 of this report we consider the requirements for each type and the related issues. The levels of growth described for each scenario are tested in terms of the infrastructure likely to be generated in general terms; we do not at this stage to consider site-specific issues.

In order to inform GCSPS’s strategic thinking, this report also considers in broad terms where there may be significant infrastructure constraints and opportunities, focusing on broad risks associated with specific types of infrastructure, and whether some of the strategic options may be better able to support infrastructure delivery than others.

To ensure conciseness, our approach has been to report by exception rather than exhaustively. For this reason, we focus on the scenarios and infrastructure which generate non-linear requirements and less on for example on some social infrastructure types where the infrastructure needs are proportionate to the scale of growth being considered.

In this report we set out the method used and general issues before considering the infrastructure implications of the spatial options.

1.4 Growth level options

The three growth level options tested through this report are:

- Minimum – Standard Method homes-led

- Medium – central scenario employment-led
- Maximum – higher employment-led

The approach taken to determining growth aspirations under each scenario is summarised below.

The **minimum growth option** is based on the standard method, which is the minimum level of growth the councils should be planning for according to national policy. This was determined to be 1,743 homes per annum as of 2020, or 36,603 in total to 2041¹. *However, changes to the Standard Method are currently being consulted on. For information using the new method, the figure reduces to 1,518 homes per annum or 31,878 in total to 2041.*

The **medium** and **maximum options** both exceed the number of homes prescribed by the standard method, but reflect the higher than anticipated economic growth that has occurred in recent years. This has been incorporated into analysis led by GL Hearn, which has produced a range of employment forecasts and land use requirements. The Greater Cambridge Housing and Employment Relationships Report translates these into housing growth figures.

Housing numbers, for medium and maximum options, are therefore tied to economic growth forecasts. The **medium option** is based upon the lower end of the range and assumes a continuation of 2011 Census commuting patterns. However, the **maximum option** assumes that housing demand generated by the higher level of job growth is provided for within the Greater Cambridge area, rather than assuming in-commuting from neighbouring districts (referred to by GCSPS as a ‘consume own smoke scenario’).

Employment land can generate critical infrastructure needs, most obviously transport and utilities related. Business occupiers need to be able to access road or rail networks quickly and easily and to have adequate supplies of power and telecoms. There is a significant level of employment land supply identified through the Employment Land Review. As much of this has planning permission infrastructure has largely been accounted for in these existing commitments. While this report looks at general locations for growth, in the absence of firm employment allocations we do not consider this issue further and this will be addressed in more detail in the final IDP once a preferred option and sites are identified.

The growth levels are set out below:

Table 1: Growth options 2020-41 (rounded to the nearest hundred)

Greater Cambridge	Minimum	Medium	Maximum
Employment (jobs)	45,800	58,500	79,500
Housing (dwellings)	36,700	42,000	57,000

¹ For information changes to the Standard Method are currently being consulted on and using the new method, the figure reduces to 1,518 homes per annum or 31,878 in total to 2041. We do not refer to this again because anticipated further changes may yield a different number.

To ensure an adequate buffer and to provide flexibility within the supply, these growth figures have been increased by 10%. GCSPS have then offset these figures against the existing pipeline of supply including planning permissions, allocations and a windfall allowance.

1.5 Delivery rates

GCSPS have used different delivery rate assumptions in the medium and maximum growth options in order to make the focused spatial options deliverable. This means that the medium and maximum growth options are not comparable. Using higher delivery rates in the maximum option results in additional delivery within the plan period and consequently fewer sites are required and are built out quicker.

The table below shows the number of homes to be provided in the plan period by each of the growth options.

Table 2: Housing growth options, 2020-41 (with buffer, supply, additional delivery and balance to find)

	Minimum	Medium	Maximum
Growth + 10% buffer	40,300	46,200	62,700
Supply (including windfall)	36,400	36,400	36,400
Additional delivery	-	-	8,600
Balance to find	3,900	9,800	17,700

GCSPS have commissioned a Housing Delivery Study which will consider past rates of delivery as well as anticipated delivery timescales, rates and assumptions for future delivery. This evidence will be used to develop the Greater Cambridge Local Plan and is likely to have implications for the growth options and scenarios currently being explored.

The spatial scenarios set out broad supply areas to meet the needs from 2020-2041. This is the focus of this report. In addition, GCSPS also identify the total ‘all-time’ growth that will be delivered when all the sites associated with the scenarios have been fully built out i.e. extending beyond the plan period.

The ‘all-time’ figures vary considerably for each of the scenarios and growth levels. This is because it depends on the number of large sites required in each scenario and the rate of delivery. The ‘all-time’ figures are highest where the scenario includes North East Cambridge (NEC), Cambridge Airport (also known as Cambridge East) and any new settlements because they are expected to take longer to build out, especially in the medium scenario which is based

on historic delivery rates. In general, the trends and issues identified for development to 2041 will be more extreme under the 'all-time' figures.

While it is important for GCSPS to consider the total 'all-time' delivery, this is less relevant to the IDP, which is primarily concerned with setting trigger points for the delivery of necessary infrastructure over the plan period to 2041.

This report only considers the 'all time' figures when there is something specific to say, and not in every case. This is because they are the product of the delivery rates and are beyond the plan period, are likely to change and may not make a difference. Examples of when the 'all time' figures may be relevant are in instances where contributions may be needed to fund infrastructure such as big ticket transport schemes, and where social, community and leisure facilities such as swimming pools, sports halls may be justified on the basis of the longer term demand.

1.6 Population assumptions

On behalf of GCSPS, GL Hearn have produced population projections associated with the housing figures for each of the minimum, medium and maximum growth options. We have worked out the occupancy rates associated with these options and these are set out in the table below:

Table 3: Homes and population with derived occupancy rates

	Minimum	Medium	Maximum
Homes	36,603	41,915	56,935
Population	73,943	87,982	127,545
Persons/dwelling (occupancy)	2.02	2.099	2.24

Although GCSPS has increased the provision of homes by 10%, there is no associated population with these numbers. However, using the same occupancy rates, we can attribute an indicative population to these homes. In all calculations that are based on population we have used these occupancy rates to identify the likely population. This is specifically the case for social and community infrastructure, green infrastructure, and sport and leisure where the standards have been applied using the following information.

Table 4: Homes and population, using the GL Hearn occupancy rates

	Minimum	Medium	Maximum
Homes + 10% buffer	40,263	46,106	62,629
Total population (using same occupancy rate)	81,332	96,777	140,288
Balance to find (homes)	3,900	9,800	17,700
Balance to find (population)	7,878	20,570	39,648

2 Method and general infrastructure issues

In the sections below we demonstrate how we have approached the assessment of scenarios for each of the key infrastructure topics. Where there are findings applicable to all scenarios these are also included.

The IDP will ultimately identify the additional infrastructure that will be required to support the planned level of growth and the chosen spatial strategy, and that work will need to consider the existing 'baseline' position and all infrastructure already in the pipeline, effectively 'netting' existing and committed capacity off from the 'balance to find'. This is particularly relevant because the existing suite of development plan documents remains relatively recent and allocates a significant amount and distribution of growth. This report treats that allocated growth as part of the baseline and considers the likely infrastructure requirements from the additional growth set out in potential strategic approach options.

As part of our work on the overall IDP, we are continuing to develop our understanding any surplus capacity or infrastructure deficits and factor that in where we know about infrastructure in the pipeline, most evidently transport schemes, we comment on how they may support certain spatial options, focusing on net additional growth beyond that already set in the adopted development plan.

2.1 Transport infrastructure

The transport issues associated with these scenarios are being considered in detail by Cambridgeshire County Council (CCC) who are undertaking the Transport Study. Consequently, this report only considers the high-level implications on the highway network, walking and cycling and public transport, as well as opportunities for linking employment and housing and risks associated with any significant transport infrastructure projects.

An overview of some of the significant transport infrastructure projects within the Greater Cambridge region, and the status of these projects is provided below, starting with those with the greatest degree of certainty

- Cambourne to Cambridge Better Public Transport Project – this project aims to create a new public transport route that eases congestion, creates sustainable travel choices, connects communities and supports growth. In June 2020, the project was paused to allow a review of the developing proposals against the Cambridgeshire and Peterborough Combined Authority (CPCA) Local Transport Plan. This project remains a priority project for the Greater Cambridge Partnership (GCP).
- Cambridge South station – the new station is proposed to be located adjacent to the Guided Busway and will provide a new transport choice available to patients, visitors and employees when travelling to and from the Cambridge Biomedical Campus. The station will also provide direct access to a range of potential routes on the rail network for those in South Cambridgeshire and better connections across the southern fringe of the city. The Government's budget (March 2020) announced funding to build Cambridge South station. The first round of consultation on the proposals was completed early 2020 with the second round scheduled in late 2020.

- A10 improvements – the A10 is subject to two projects, the CPCA's A10 dualling and the GCP's Waterbeach to Cambridge Better Public Transport project. The CPCA has consulted on the options for dualling the A10 and submitted a strategic outline business case in August 2020. GCP's consultation on the options for improving public transport to Waterbeach closed in August 2020 with an Options Appraisal Report to be presented to the GCP Executive Board in October.
- Cambridge South East Transport – this project aims to provide better public transport, walking and cycling options for those who travel in the A1307 and A1301 area, improving journey times and linking communities and employment sites in the area south east of Cambridge. Following consultation of the Phase 2 proposals, a preferred route and location for a Travel Hub has been agreed. This project is now subject to preparation of a full EIA for its next stage.

Two major transport infrastructure projects are being promoted but remain aspirational. They do however have the potential to play an important role in supporting the maximum levels of growth in the area being testing by GCSPS:

- The Cambridge Autonomous Metro (CAM) – the vision for the CAM being promoted by the CPCA is for a metro-style network that connects key settlements, employment sites and growth areas across the Greater Cambridge region with the Cambridge railway stations and Cambridge city centre. A consultation for need and benefits of CAM as well as the city tunnel sections was completed in early 2020. An Outline Business Case is expected in late 2020.
- East West Rail – the East West Rail project aims to creating a new direct connection between Oxford and Cambridge with the first services expected to start running by the end of 2024. Construction of the western section phase 1 has been completed with a start made on enabling works for phase 2. The preferred option for the central section has been announced which links existing stations in Bedford and Cambridge with communities in Cambourne and the area north of Sandy and south of St Neots.

It is more than likely that transport infrastructure that is specific to a spatial option will be required in addition to the transport infrastructure that is planned and/or committed in the Greater Cambridge region.

2.2 Social and community infrastructure

Social and community infrastructure covers a broad range of infrastructure types, with diverse delivery agencies and standards for assessing need.

In the sections below, we briefly assess what some of the widely used requirements for different forms of social and community infrastructure might mean for the different scenarios.

We have applied relevant standards to the scenarios to determine requirements for the most substantial infrastructure categories (in terms of cost). These are for primary and secondary education, primary healthcare, community facilities and libraries.

Some caveats are set out below. The standards adopted here are generic and, while applicable at the time of writing, could be superseded by new policies and approaches. The means of

assessing provision at a strategic level, using global estimates, will not produce the same results as a more nuanced spatially-focused exercise which will be used within the IDP.

Primary and secondary education

Age-specific population estimates are used to determine the education requirements as Forms of Entry (FE), which can then inform requirements for new or expanded schools. CCC uses the following child population yield estimates per 100 dwellings as a basis for strategic planning:

- 30-40 children aged 4-10 (Primary)
- 18-25 children aged 11-16 (Secondary)

The balance of affordable housing, and the dwelling size mix have important implications for calculating child yields. For example, a spatial option that prioritises intensification and has might therefore have a greater proportion of smaller dwellings, may produce a lower child yield than a more dispersed spatial option with a higher proportion of larger dwellings. In the absence of a detailed tenure mix, it is CCC policy to base child yield assumptions on the top end of the range; we have adopted the same approach and therefore our findings are likely to be conservative by potentially overestimating of child yields. It is also relevant to note we have not made any adjustments for pupils that would attend private school. All the standards used are set out in the tables at Appendix C.

The number of FE in schools varies. At primary level it is common for schools to be two or three FE. There is greater variation in secondary school sizes but tend to be much larger – between six and 10 FE – and consolidated on much larger land holdings. This makes planning for new secondary schools, particularly within settlements, highly challenging due to the difficulty of assembling the land and the high costs.

It is expected that there will be some surplus capacity in the existing education infrastructure which can meet some school place demand; this will need to be analysed in the IDP on a school-by-school basis with reference to catchment areas and the location of future growth. It may also be the case that, once any spare capacity has been used, the CCC will explore the expansion of existing school sites to take on more pupils, which will reduce the burden and expense of new schools outright. This could be relevant to the Minimum scenario particularly, where the case for a new secondary school, with demand for less than 6FE, may be marginal.

The Medium and Maximum scenarios are more likely to require new secondary schools. The challenge thereafter is planning for the right level of provision in the right locations based on the spatial option.

Table 5 below summarises the headline requirements for primary and secondary education which are reported for the total growth figures. The spatial distribution of these requirements is shown in the more detailed tables in Appendix D.

Table 5: Primary and secondary education high-level requirements based on growth 2020-41

	Minimum	Medium	Maximum
Number of pupils (Primary)	1,560	3,920	7,080

	Minimum	Medium	Maximum
Number of pupils (Secondary)	975	2,450	4,425
Number of FE (Primary)	7.4	18.7	33.7
Number of FE (Secondary)	5.4	13.6	24.6

As part of this report, we have not looked at any existing surplus capacity within schools. While there may be some capacity in primary schools, because the catchment areas for primary schools are relatively local and between 1-3FE, it is the location of that capacity that is most relevant in determining whether it could go to offsetting some the requirements identified above. This is not the case with secondary schools which are larger, typically 6FE, and serve much wider catchments. It may therefore be the case that some of the requirements above may be met in existing provision or in committed provision. For example, CCC are in the advanced stages of planning a new secondary school in north-west Cambridge that is programmed to open in 2023. This will serve the Darwin Green development and others in north-west Cambridge.

The IDP work will look at the capacity of the existing and pipeline provision for both secondary and primary schools to assess if growth would result in additional need. This will take account of whether commitments like the new secondary school in north-west Cambridge will be meeting growth already allocated in the adopted development or whether some places will be catering to the new growth being tested here. However, based on average child yields, even if there are places available, it is likely that the higher growth options for a number of the spatial scenarios is likely to result in further requirement for secondary schools. As land hungry uses, any such requirements will have to carefully factored into a preferred option, particularly given a number of scenarios are focused on intensive growth where finding such sites in the right locations to meet needs could be challenging.

Primary healthcare

Primary healthcare here refers to GP surgeries, although it can include various out-of-hospital services too. There are no Government guidelines that identify a GP to population ratio, but a commonly used benchmark is one full-time equivalent (FTE) GP to 1,800 new residents based on guidance from the Royal College of General Practitioners to the Department of Health. Further details of the standards used are set out in the tables in Appendix C.

The total requirements are set out below with detailed spatial distribution of the scenarios included in the tables at Appendix D.

Table 6: GP surgeries – high-level requirements based on growth 2020-41

	Minimum	Medium	Maximum
FTE GP requirement	4.4	11.4	22
Floorspace requirement (sqm)	919	2,400	4,626

Community facilities and libraries

Community facilities range in scale and use from traditional village halls, to multi-functional community hubs/ meeting spaces. South Cambridgeshire District Council produced a Community Facilities Assessment in 2009, which included an audit of 86 existing community facilities in the borough², and identified a ratio of 111 sqm of community facility floorspace per 1,000 residents. This will need to be reviewed as part of the Greater Cambridge Local Plan work to feed into the final IDP.

We have adopted this as a benchmark for new provision, although it is important to note that South Cambridgeshire is mostly made up of villages, and this floorspace is typically located in village halls. It is more likely that new facilities would be larger, and with a mix of functions. The standards used for community facilities and libraries are set out in Appendix C.

The tables below show the total requirements with detailed spatial distribution of the scenarios included in the tables at Appendix D.

Table 7: Community facilities high-level requirements based on growth 2020-41

	Minimum	Medium	Maximum
Floorspace requirement (sqm)	874	2,283	4,401

Table 8: Libraries high-level requirements based on growth 2020-41

	Minimum	Medium	Maximum
Floorspace requirement (sqm)	236	617	1,189

2.3 Green infrastructure, sports and leisure

Green infrastructure is also provided using a standards-based approach, and an understanding of the baseline position is important. Overall, the provision of sports facilities in the Greater Cambridge area is good; however, some of the existing facilities are ageing. The facilities do not provide sufficient capacity for the current population, and therefore it is critical that new developments provide for new facilities, to meet the demand of an increased population. Key issues facing sports facilities include the need to refurbish or replace ageing facilities (particularly swimming pools and sports halls), optimise and increase capacity of sports facilities on education sites and reduce reliance on these, the need to develop new sports halls, swimming pools (which are overcapacity) and health and fitness facilities, develop provision for cycling, walking and running and informal activities.

² We are awaiting updated information relating to community facilities within Cambridge City

For the purpose of this assessment it is assumed that the current policy position will remain, in that new development will be expected to provide open space, sport and recreation facilities to the existing standards and using the average occupancy rates set out above. These are set out below and in more detail in Table 13 and 14 at Appendix C.

- Area required to provide for outdoor sports and open space (including allotments)
- The number of new sports halls which would be justified
- The number of new swimming pools which would be justified

In terms of swimming pool provision, none of the scenarios would generate sufficient demand for a new swimming pool up to 2041, although there are plans to create new swimming pools at some of the existing planned new settlements. However in some scenarios (1, 2, 4, 6, 7 and 8) a new swimming pool would be justified in the long term based on the 'all-time' figures. In these scenarios for the medium and maximum growth options, a phased approach to provision could be undertaken and it could be provided in the relevant part of Cambridge City to serve the need of these new development areas.

These standards have been applied to the growth levels for the different scenarios. The resulting requirements are set out in the table below and in detail for each scenario at Appendix D.

Table 9: Open space, sports halls and swimming pools high-level requirements based on growth 2020-2041

	Minimum	Medium	Maximum
Outside space (ha)	Between 25 and 32	Between 65 and 84	Between 127 and 162
Sports halls	0.6	1.6	3
Swimming pools	0.2	0.4	0.8

In considering how to apply open space standards and best meet local needs, there may be opportunities to use land more intensively but still achieving the necessary quality of provision e.g. through provision of artificial pitches rather than solely grass pitches. This approach and others are discussed in Section 4.3.

Greater Cambridge is rich in nationally important biodiversity assets, including Eversden & Wimpole Woods SAC, a significant amount of fenland habitat in the northern part of the area, and a total of 42 SSSI designations. Generally the more spatially dispersed options (Scenario 4, 5, 6, 7 and 8) and those including new settlements have the potential to affect SSSIs, although it is not possible to say exactly which will be affected at this stage or to what extent.

Critically though for understanding the high-level infrastructure implications, it means that offsetting green infrastructure, such as suitable alternative natural greenspace (SANG), may be required; conversely, scenarios which comprise growth from these protected locations are less likely to require such mitigating infrastructure. However, because the scenarios being reviewed

remain high-level and do not themselves have any physical boundaries, it is not possible to provide any specific findings at this stage.

Due to the nature of green infrastructure, the requirements will be influenced by the location of the growth, and the green infrastructure assets in proximity to that growth. LUC has been commissioned separately to prepare a green infrastructure opportunities assessment which is ongoing. As with other infrastructure implications considered in this report, the findings in relation to green infrastructure are at a high level.

2.4 Utilities

As part of the testing, a high-level utility review has considered the following:

- Possible risk of existing utility constraints.
- Ease of connections to existing utility networks for new supplies.
- Capacity / reinforcement risks on existing utility networks.

In all scenarios there may be existing utility infrastructure that crosses the sites, which would require diverting or protecting to enable any anticipated growth without constraint. Because reinforcement works can be very expensive and have long lead-in times, these will be considered in more detail when the preferred scenario is identified to ensure they are properly considered and included in the IDP.

Water resources

Water resources, supply and wastewater treatment are important utility infrastructure issues; these will be covered in detail by the forthcoming Greater Cambridge Integrated Water Management Study but in advance of that an interim report (October 2020) has been prepared which considers the GCSPS spatial options.

Water resources constraints are more dependent on the quantum rather than the location of the development. In time, the different growth scenarios will all exceed current planned water demand, with the maximum exceeding by the mid-2020s, the medium by late 2020s and the minimum in the early 2030s. While in the longer term i.e. by 2035, it is anticipated that the Lincolnshire water supply reservoir will be operational and will bolster supply, this will not in place early enough to address the supply constraints that will emerge for the medium and maximum options. There is scope to mitigate this under the medium option through investment early in AMP8 (2025-30); however, the high growth option presents significantly more challenges as investment would be required within the next five years i.e. AMP7, where the budget has already been set and does not make any such provisions. Alternative funding sources would therefore have to be identified to address this issue.

In terms of wastewater, there are some existing capacity constraints which may impact on the delivery rates envisaged within particularly the higher growth options if they are not resolved in a timely fashion. This includes specific impacts on some scenarios which are dependent on the relocation of the Cambridge water recycling centre as part of the NEC site, as well as potentially impacting on the higher delivery rates assumed in the maximum growth option.

Power

Capacity on the electricity network in the area is a key issue, and the CPIER report identified challenges in meeting the anticipated growth figures. This is due to capacity constraints on UKPN's electricity network up to 132kV which require grid reinforcement³. This has triggered a potential option for transition to smart grids where individuals buy and sell energy from local grid systems that are not connected to the National Grid.

This is confirmed by the more recent Local Network Analysis undertaken for GCP⁴ that explores the issues associated with the existing committed growth and identifies problems such as in North West Cambridge, where the University has not been able to switch on its Combined Heat and Power Unit until more capacity is provided. The report concludes that there is significant level of new demand for electricity for which there is no planned infrastructure to meet this requirement. However, the report examines possible strategic interventions that could reduce the risks, and these will need to be considered further if solutions are to be provided in a coherent and timely manner. Given the existing constraints and infrastructure reinforcements required to deliver existing committed growth, additional growth will have an increasing burden. Consequently, it is likely that all growth options, particularly the maximum growth option, will lead to considerable additional demand for electricity that poses a significant challenge to provide with associated risks to delivery and viability, although this is likely to be one of timing and financing of solutions rather than acting as an absolute constraint.

In terms of the geographical implications we know there are five 132kV grid substations all of which have capacity issues, with Histon having no capacity and Arbury and Burwell having enough capacity for a smaller development, and Fulbourn and Melbourne having too low a capacity for any future development. Histon requires significant reinforcement for existing residential commitments in the north-west, including Cambourne and Bourn Airfield as well as NEC going forward, and any additional growth in this area, as proposed in Scenarios (1, 2, 6 7 and 8). In terms of economic growth there is a constraint due to the capacity of the Fulbourn substation. This has implications for development in the southern fringe, and potentially for the southern cluster Scenario 7.

There are some predicted changes to utility usage over the plan period which need to be considered. We provide a general commentary on these below.

³ Note - the higher kV is managed by National Grid

⁴ Research undertaken by GCP

Electric vehicle charging

In July 2019, the Government published a consultation document on electric vehicle (EV) charging in Residential and Non-Residential Buildings. The aim of the consultation was to provide proposals to alter existing residential and non-residential Building Regulations to include EV infrastructure requirements. The consultation document includes a recommended requirement of a 7kW EV charge-point (EVCP) for every new residential dwelling with an associated parking space. For every non-residential building with more than 10 parking spaces, the recommended requirement is for a 7kW EV charge-point for every 1 in 5 car parking spaces.

This will increase the load requirement for proposed developments, which may trigger reinforcement on developments that, without EV charging, would not have required reinforcement on the networks.

With technology moving forward, the load requirement per EV charging point may increase; however, it is difficult to predict when and to what capacity. Therefore, at this stage it is reasonable to assume that 7kW points will be provided to all new developments.

Heating and hot water supply – gas versus electricity

With the UK's target to bring all greenhouse gas emissions to net zero by 2050 there is a push to reduce the use of fossil fuels in households. The gap between carbon emission factors for gas and electricity has been shrinking such that the carbon emission factor for electricity will soon be lower than gas. In addition to striving to use more energy efficient and renewable technologies across the UK it is therefore likely that electricity will become more common as a source for heating and hot water to buildings. This, in addition to EV charging, will result in a significant increase to the electrical loads across developments.

Incorporating 5G

The big four mobile network operators (EE, O2, Three and Vodafone) are currently upgrading their networks for 5G. Focus is currently on the larger cities across the UK, which doesn't include Cambridge at this stage. However, consideration may need to be given to making sites 5G ready.

5G runs at higher frequencies than 4G, such that more antenna will be required at the mast, as well as smaller antenna being located at regular locations around sites to enable consistent distribution, for example on streetlights. 5G waves are more susceptible to objects, which can completely block 5G waves, including trees and buildings, so antenna should be located in areas where they have a free route to another antenna.

2.5 Site-specific challenges

We know that there will be additional hurdles, such as decontamination to overcome in the delivery of large brownfield sites such as North East Cambridge and the Airport. While we know this will require the removal of the wastewater treatment works, there may also be other yet unknown, challenges to be overcome with brownfield sites that may have financial implications as well as low completion rates in the early years.

3 Spatial scenarios

In this section we review the high-level infrastructure requirements generated by each spatial scenario at the three potential levels of growth. Before commenting on the specifics of each option, we first make some overarching comments on the patterns of growth which form part of the different options:

- **Densification and intensification (scenario 1):** this brings opportunities in terms of sustainable transport and proximity to existing employment and services; however, the scope for expanding existing infrastructure to cope with increased demand is more challenging. This is particularly for the case for land-hungry uses such as primary substations and secondary schools which must be provided on scarce and therefore costly sites. Additionally, there may be reduced developer contributions available to pay for infrastructure because of the abnormal costs of derisking/remediating sites for development.
- **Edge of city expansion (scenarios 2, 3, 7, 8):** there are clear advantages with this approach to growth in terms of providing greatest opportunity to connect into or extend existing networks (transport, power, digital etc.). It also offers scope to use edge of city developments to bolster infrastructure provision for existing underserved residents as well as catering to new population, for example adding critical mass to make new public transport links more viable or allow greater frequency of service.
- **New settlements⁵ (scenarios 4, 6, 7, 8):** this approach has advantages in terms of allowing all infrastructure needs to be planned in from the outset. Further, new settlements can be planned to at the scale needed to provide the critical mass for infrastructure to be used more efficiently and sustainably by reducing the need to travel. However, this does present the challenge of high upfront costs, as well as slow delivery in early years as homes and other growth depends on infrastructure being in place.
- **Dispersed growth (scenarios 5, 6):** while this approach offer greater scope to incorporate green and blue infrastructure, it presents challenges in terms of needing proportionately more transport, social and utilities infrastructure in the form of either upgrading existing networks or adding new parts to the network in more places than a more focused settlement-specific approach. For larger infrastructure items, such as secondary education where a significant population is needed to generate demand, it is likely that there will be spin-off impacts on the transport network as a greater share of new population are forced to travel longer distances to larger settlements where these demands are likely to be met.

3.1 Spatial scenario 1: focus on densification of existing urban areas

This option focuses new homes within Cambridge, the main sources of supply are the brownfield site at North East Cambridge (NEC) and development within the urban area which would meet the minimum needs.

To meet the medium growth figures density would increase in the urban area and additional sites including Cambridge Airport and a site/broad location in the green belt would be required.

To meet the maximum growth figures development within the urban area and at NEC and Cambridge Airport would be developed at higher densities and delivery rates.

Transport infrastructure

In general, the minimum level of growth could be supported through existing, planned and identified transport infrastructure. For medium growth further corridor improvements in walking, cycling and public transport prioritisation would be necessary to achieve an uplift in numbers in the urban area. The transport evidence is currently examining what infrastructure will be needed to support growth but the current indications are that to achieve the maximum growth numbers big-ticket items, such as the CAM, for which the cost estimates are in region £3.7 to £4.5bn⁶, or an alternative would be required.

There is limited opportunity to improve highway infrastructure within the existing urban area. Junction and corridor improvements have potential to support housing growth; however, CCC are increasing the emphasis on sustainable transport infrastructure through implementation of a trip budget on number on new trips generated at NEC AAP. It is likely that significant investment in sustainable transport infrastructure (which supports all modes of travel) will be required if the same approach is used for Cambridge Airport.

A review of parking infrastructure and a policy stance towards low parking ratios / car-free development in sustainable locations would be required. Lower levels of car ownership in new development would reduce pressure on transport infrastructure within the urban area. This would need to be supported by increased walking, cycling and public transport provision.

Densification of the urban area would encourage trips by walking / cycling due to the proximity to existing services and facilities. Therefore, footways and cycleway infrastructure will be needed to provide a high-quality walking and cycling environment. Densification would also result in a release of brownfield sites within the city and make use of previously developed land. Infrastructure should be provided which increases permeability for walking and cycling in the urban area.

Opportunities to improve walking and cycling infrastructure, such as widening of footways, implementing cycleways, bicycle traffic signals, bridges etc. should be explored. While reducing travel demand and encouraging sustainable travel must be prioritised, there will also be a need

⁵ This typology could be treated interchangeably with large-scale urban extensions i.e. while the scenarios we have tested have referred to 'new settlements', it is possible that these new settlements are very significantly expanded existing places which will require wholesale new infrastructure to support growth

⁶ Source: SOBC

to improve highways infrastructure to enhance road safety and reduce congestion on the network. This could be through pinch point improvements. However, this must not incentivise car travel over sustainable modes.

This approach would be reliant on enhancing public transport corridors (bus lanes) within the city as well as facilitating easy access to Cambridge North station for NEC.

The two existing stations (Cambridge and Cambridge North) and the one planned at Cambridge South should accommodate demand from housing growth. Infrastructure to improve access to these facilities should be explored. The same is true of East West Rail; if this scheme were to be delivered and funding secured from central Government, it will be important to factor in the last mile (and last five mile) connecting infrastructure that will be needed to make the new and improved stations accessible to growth in those locations.

If the CAM were to be delivered, any housing growth planned would have to factor in the CAM infrastructure needs (both by safeguarding space for the route and to contribute to costs).

Social and community infrastructure

Densification is likely to result in disparate development across the urban area that would have an incremental impact on existing social and community facilities. Given that existing infrastructure Cambridge City is working at or beyond capacity, extra development is likely to have a detrimentally impact on existing facilities. However, because of the spread of development across the urban area, there may be an issue of lack of critical mass or sites to deliver new facilities and the focus is therefore likely to be placed on extensions to existing facilities, but this may not always be possible. A coordinated approach to delivery of new infrastructure is required to ensure that necessary facilities are provided within easy reach of the new population.

The large sites of NEC and the Airport would be expected to provide social and community infrastructure on site in line with standards. However, much of this is expected to continue to be delivered beyond 2041. Consequently, the trigger points to provide these in line with the development trajectory will be important and will need to be considered in more detail in the final IDP. An indication of the facilities required resulting from the development and population associated with this scenario is set out in Appendix D.

Green infrastructure, sports and leisure

The Regulation 18 consultation draft of the NEC AAP sets out that the whole area encompasses 182ha. The requirement for outdoor sport and open space to meet the maximum growth option would be approximately a third of the total area. This is unlikely to be achievable under traditional provision methods and so alternative approaches to provision which are off-site or more land efficient are likely to be required (as summarised in paragraph 4.3).

Development at the areas identified within this scenario would result in increased recreational pressure on surrounding green infrastructure assets such as Milton Park, Chesterton Fen, Coldham Common and the River Cam corridor, and the need for off-site provision or new ways of delivery (as suggested in the overarching comments above). Pressure on these assets would be increased by the delivery of sites within and to the east of Cambridge such as the Airport, due to proximity.

Green infrastructure opportunities which could be supported as a result of this scenario include increasing connectivity to the River Cam Corridor, Chesterton Fen and Milton Park, enhancement of the Cherry Hinton Brook corridor and enhancement / expansion of local nature reserves at Stourbridge Common, Coldhams Common, Norman Cement pits/Hystor open space, Cherry Hinton East Pit, Nine Wells LNR Extension, Coe Fen/Sheep's Green and Byron's Pool.

Appendix D shows specifically what is likely to be required. In terms of sports halls, the minimum growth scenario would fail to create sufficient demand for a new facility, which is likely to increase pressure on existing facilities, expansion and improvement of which may be challenging. The medium and maximum scenarios would justify new sports hall provision.

Utilities

In existing urban areas, with the likely large number of domestic and commercial areas all requiring utility connections, the existing utility infrastructure will be located underground along roads adjacent to the proposed site boundaries.

In Cambridge city, due to the limitation of space to run utility infrastructure, it is common to have existing utility infrastructure located underground within site boundaries in areas that are clear of buildings. Depending on the nature of these existing utility constraints, they will either require diverting to allow any future masterplan to be realised without constraint, or they may be too strategic to divert, in which case protection measures may be required and any masterplans would need to consider and incorporate the existing utility constraints.

This scenario, because it is premised on intensifying use, will give rise to greater flood risks because development plots are likely to be smaller and therefore offer fewer opportunities for mitigation measures within blue-green infrastructure, flood risk reduction and water recycling systems. There could be some opportunities to explore a more comprehensive approach to managing flood risk which also seeks to resolve existing issues; however, the challenge to this will be funding this approach i.e. existing development cannot be obliged to contribute within the current planning regime.

Growth through this scenario is conditional on the relocation of the Cambridge WRC works, not only for land, but also because of limitations in the capacity of waste-water treatment. The new WRC works will have significantly more capacity than the existing facility. Various options for telecommunications providers may be available in Cambridge, due to the higher density of domestic and commercial properties. This would allow for a wider range, and potentially more competitive range, of options for connection to the sites.

Since Cambridge is a high-density area, capacity on existing local networks is likely to be at a maximum, with little to no available capacity for future developments. As such, there is a risk that reinforcement to the local network, and possibly the wider network, may be required to accommodate new load requirements from proposed developments.

3.2 Spatial scenario 2: focus on edge of Cambridge: outside Green Belt

This option focuses new homes in extensions on the edge of Cambridge at Cambridge Airport. NEC and one village site are required to make up the balance to meet the minimum growth figure.

To meet the medium growth figure there needs to be additional development of two smaller new settlements on public transport corridors and growth at a range of rural centres and minor rural centres outside the Green Belt.

To meet the maximum growth figures, the Airport will come forward at higher delivery rates, together with NEC and two new settlements (one smaller, one large) on public transport corridors also at increased delivery rates.

Transport infrastructure

All comments on transport infrastructure for Scenario 1 are relevant to Scenario 2. With the difference in these two scenarios related to housing growth at new settlements on public transport corridors, improvements and provision of public transport infrastructure is key to this scenario. For the medium and maximum growth options, infrastructure improvements are required to achieve sustainable new settlements that have links to jobs and Cambridge City.

While there will be a heavy reliance on public transport Infrastructure for this scenario, highways infrastructure demands must not be neglected. Journey times to work and leisure for public transport should be more attractive than those made by car; however, for that to be the case, there will still need to be investment on the highway infrastructure to overcome potential pinch points along public transport corridors.

It is expected that local amenities and some job growth will be planned within the new settlements. Walking and cycling infrastructure will need to be provided to a good standard to ensure those trips which are internal to the new settlement are undertaken by sustainable transport. This infrastructure will be required early on so that the new settlement is sustainable in transport terms.

Key to the success of this scenario is the reliability, frequency and cost of the public transport system.

Social and community infrastructure

It is expected that the two large sites of NEC and the Airport, as well as the new settlements in the maximum option, will provide adequate on-site social and community infrastructure in line with existing standards. Given that these large sites will continue to be developed beyond 2041 provision of adequate facilities in a timely manner and in line with the housing growth will need to be carefully managed through appropriate trigger points within the trajectory.

Some village growth is anticipated in the minimum option, although this is too small to warrant its own new facilities the capacity of existing provision will need to be considered and appropriate contribution made in the locality. Considerably more village growth is envisaged in

the medium option which will need to properly address social and community provision at an early stage in the process. The issue that this raises that has scale threshold implications, is that relatively modest incremental growth spread thinly does not generate the critical mass to justify social and community infrastructure. An indication of the facilities required resulting from the development and population associated with this scenario is set out in Appendix D.

Green infrastructure, sports and leisure

The minimum and medium growth options will result in growth at NEC and the Airport which will result in a requirement for the provision of a significant amount of outdoor sport and/or open space. While within the plan period we think it is feasible to accommodate the scale of provision needed to meet the extant standards within these sites using typical forms of provision (such as open areas featuring grass pitches, play provision, because some of these sites are anticipated to continue delivering beyond the plan period, it is still likely that a more innovative/intensive approach to provision will be needed.

The areas proposed for development under this scenario would result in increased pressure on surrounding green infrastructure assets such as Milton Park, Chesterton Fen, Coldhams Common and the River Cam corridor. Focusing solely on the plan period, because fewer units are envisaged there would be less pressure than forecast under Scenario 1 but looking over the longer term to completion of these sites, in effect the pressure is the same.

The maximum option will lead to a land requirement for outdoor sport and open space within the NEC area comprising approximately a third of its total area. This is unlikely to be achievable under traditional provision methods and so alternative approaches to provision which are off-site or more land efficient are likely to be required (as summarised in paragraph 4.3).

Development at the areas identified within this scenario would result in increased recreational pressure on the existing green infrastructure assets, and the need for off-site provision or new ways of delivery (as summarised in paragraph 4.3). However, given the lower level of growth within Cambridge, this pressure would be slightly less than that likely to result from Scenario 1.

A new settlement would need to provide sufficient open space and sports facilities to meet its own needs.

Appendix D shows specifically what is likely to be required. Only the medium and maximum options would justify the provision of new sports halls within the plan period, one in the eastern part of Cambridge and one in the new settlement. However, based on the 'all-time' figures, new sports halls would be justified at all growth locations

Utilities

Areas on the edge of Cambridge, including Cambridge Airport and NEC, are likely to be surrounded by residential estates and/or industrial estates. Therefore, it is likely that the surrounding areas will be well served by the utility networks, albeit additional capacity may be required.

Given the locations of the sites it is likely that existing utility infrastructure would be located within proximity to the proposed site boundary, which should allow for suitable nearby connections from existing utility networks to supply the future development. However, any new settlement location may be more isolated and not well served by the existing utility networks requiring longer connections and the considerations set out in relation to Scenario 4 are relevant.

Available capacity on existing local utility networks may not be as limited as urban areas; however, available capacity may be minimal, such that it can only support the first few properties. As such, it is likely that reinforcement to the local network, and possibly the wider network, will be required, with all the caveats that are set out in Scenario 1.

Because this scenario is based on the assumption that development will come forward on larger sites than under scenario 1, there is greater scope to incorporate blue-green infrastructure, flood risk reduction and water resilient recycling systems into growth and so offset flood risks.

3.3 Spatial scenario 3: focus on edge of Cambridge: Green Belt

This option focuses new homes in extensions on the edge of the city and will involve the release of green belt land. To meet the minimum need three sites/broad locations would be required.

To meet the medium growth figures, five edge of Cambridge sites/broad locations would be required together with additional limited development within the Cambridge urban area.

To meet the maximum growth figures, five edge of Cambridge sites/broad locations are required all to be delivered at high delivery rates.

Transport infrastructure

While it is likely that existing and planned infrastructure could support the minimum growth levels, a comprehensive Transport Strategy will be required for the broad locations envisaged in the medium and maximum options to provide viable linkages to jobs and Cambridge city centre. This could need considerable new infrastructure depending on their location particularly if they are to facilitate the maximum growth levels.

- Local junction improvements are expected to be required. There is the opportunity to include strategic link roads within/around the sites that are selected.
- Depending on the location, it is expected that existing local amenities will be within walking and cycling distance of the sites. Therefore, improvements to existing infrastructure as well as new connections will be required. Growth will need to be supported by either extension of Citi bus services and infrastructure or new dedicated services. Sites located close to existing and planned railway stations will require high-quality access routes to these facilities. All sites will need to be cognisant of the CAM in terms of safeguarding and its potential infrastructure requirements.

That said, for those sites located close to existing employment areas, there is scope to reduce infrastructure needs by encouraging more sustainable travel.

Social and community infrastructure

It is difficult to identify any specific implications for this scenario because it is assumed that any new Green Belt development would provide adequate on site social and community infrastructure in line with the existing standards.

However, there may be an issue of scale and lack of critical mass generated within the locations to deliver new facilities as part of the development. This would mean that capacity of existing local facilities will need to be considered and how adequate provision is best provided. An indication of the facilities required resulting from the development and population associated with this scenario is set out in Appendix D.

Green infrastructure, sports and leisure

At this strategic, rather than site specific, stage potential locations encircle Cambridge and do not suggest a single direction or location of growth. Focusing development to the Cambridge City area is likely to place pressure on the local green infrastructure assets and sports facilities. This development strategy could lead to efficiencies of development form given that open space and sports pitches are not considered inappropriate within Green Belt. However, it would still be recommended to integrate green infrastructure into the built form of the development to ensure habitat connectivity and other green infrastructure benefits such as urban cooling and provision of a more attractive development / public realm.

The tables at Appendix D show specifically what is likely to be required for sports halls, swimming pools and outside space. The quantum of development under the medium and maximum options (but not minimum) would justify the provision of new sports halls. These could also benefit Cambridge residents. Provision of green infrastructure as part of new development is also assumed, but the specific land-take required and form of this will depend on more detailed assessment once greater detail is available about the location and amount of development proposed.

Utilities

It is possible that being Green Belt, areas of land identified may not be well served by the utility networks. In addition, existing utility infrastructure constraints may exist across the sites, particularly larger strategic utility infrastructure, which may require diverting or protecting in order for the masterplan to be realised without constraint.

If existing utilities infrastructure is not located adjacent to the site longer offsite connections may be required. There are likely to be similar capacity and reinforcement issues on the existing local utility network as those identified in Scenario 2. While flood risk and therefore any potential mitigation is dependent on the specific sites taken forward, there are significant existing fluvial and surface water flood risks which may constrain development delivery or increase the cost of infrastructure on the edge of Cambridge within the Green Belt.

3.4 Spatial scenario 4: focus on new settlements

This option establishes new towns and villages providing homes, jobs and associated infrastructure. To meet the minimum need two smaller settlements of 4,500 homes on public transport corridors are required.

To meet the medium growth figures two larger new settlements and one smaller new settlement are required on public transport corridors and a further smaller new settlement on the road network.

To meet maximum growth figures the same as the medium scenario is required but delivered at higher delivery rates.

Transport infrastructure

Significant new infrastructure is required for all modes in this scenario and for all growth options. Depending on where the new settlements are located, the highways infrastructure from these locations to Cambridge will require improvement ranging from junction improvements to new links, all of which will have associated high costs. For example, the Cambourne to Cambridge Better Public Transport Project alone is estimated to cost £160m.

The funding for the C2C project will be supported by the City Deal. However, the GCP is seeking to recover an appropriate proportion of the cost from local developer contributions. Nevertheless, growth located on existing or planned corridors will likely have a lower cost associated with transport infrastructure than growth that is located in areas which require new and dedicated infrastructure.

It is expected that local amenities and some job growth will be planned within the new settlements. Walking and cycling infrastructure will need to be provided to a good standard to ensure those trips which are internal to the new settlement are undertaken by sustainable transport.

Significant transport infrastructure will be required to ensure that public transport is an attractive alternative to the car for journeys to and from employment, leisure and education.

Social and community infrastructure

It is assumed that all new settlements would provide all necessary social and community infrastructure as part of the development. The issue will be ensuring that these large sites that will continue to be developed beyond 2041 provide adequate facilities in a timely manner and in line with the housing growth. This should be carefully managed through appropriate trigger points within the trajectory. An indication of the facilities required resulting from the development and population associated with this scenario is set out in Appendix D.

In broad terms, using CCC current standards, a new settlement or urban extension in the order of 4,500 homes would trigger the need for a new 6FE secondary school. Therefore,

indicatively this scenario implies at new secondary schools would be needed in even the minimum option, as well as proportionately more and potentially expanded 8FE⁷ schools under the medium and maximum options. Note though that this does not take account of any existing surplus capacity and the location of that surplus capacity relative to the new settlements which might reduce the scale of requirement.

Green infrastructure, sports and leisure

It is assumed that all new settlements would be planned in a manner so as to provide sufficient open space and sports facilities as an integral part of their form and design. This is also assumed for green infrastructure, but the specific land-take required and form of this will depend on more detailed assessment once greater detail is available about the location and amount of development proposed.

Appendix D shows specifically what is likely to be required. The medium and maximum growth options would justify the provision of new sports halls and it would be anticipated these are provided within the new settlement.

Utilities

On the assumption that a new settlement would be located in a fairly rural area, there is a high possibility that the area is not well served by the existing utility networks.

As outlined above, existing utilities infrastructure may not be located near to sites, and longer offsite connections may be required.

There may also be limitations as to the type of utility networks available. For example, there may be a water main located within the area, but it may be too small to connect to with a longer connection required to the nearest suitably sized mains. It is also recommended to consider the strength of mobile phone signal and mobile data signal in the area. If low, consideration would need to be given as to applying for a new mast in the area.

There are likely to be similar capacity and reinforcement issues on the existing local utility network as those identified in Scenario 2 and 3.

With regard to flood risk, it is expected that because site selection will have to comply with the sequential test that growth will come forward on areas of low or medium flood risk where any risks can be mitigated/managed. Dependent on exact locations, new settlements may also provide an opportunity to incorporate on-site attenuation which would have the dual role of reducing downstream flood risks.

⁷ Indicatively needing 5,760 new homes to generate sufficient pupil yield

4 Spatial scenario 5: focus on dispersal: villages

This option spreads new homes to the villages. To meet the minimum, medium and maximum need growth will be distributed as follows:

- 40% at rural centres
- 40% at minor rural centres
- 17% at group villages
- 3% at infill villages

Transport infrastructure

As with the previous scenario significant new infrastructure required for all modes in this scenario and for all growth options. However, the dispersal of growth into numerous smaller developments will be much less able to support the funding of major new infrastructure.

Highways infrastructure improvements along routes from villages to Cambridge and employment areas will be required to accommodate existing reliance on travelling by car in these areas. This could include but not limited to junction improvement and village bypasses.

New local amenities and some job growth will be required within existing villages to increase sustainability. If this is planned, walking and cycling infrastructure will need to be improved to ensure those trips which are internal to the existing village are undertaken by sustainable transport.

Significant investment is required in public transport infrastructure to make viable alternatives to car. There is the opportunity to increase usage of existing train stations within villages, and this may require improving and increasing platforms.

Social and community infrastructure

This option disperses growth across the rural area with more development weighted towards the higher order settlements. The key issue will be understanding the existing capacity of social and community facilities and whether these are able to accommodate additional growth or if not, how they are best able to facilitate the requirements of the additional population.

The risk with this scenario is that the critical mass is not achieved to provide new facilities and consequently there is an adverse impact on existing facilities, or alternatively more travel is created for example as children are bussed to school elsewhere. There is also the danger that the current situation is likely to be exacerbated with more people living in locations where they are less able to access facilities. There are potential inefficiencies of dispersing the growth which leads to increased travel to higher order settlements to access a wider range of facilities. An indication of the facilities required resulting from the development and population associated with this scenario is set out in Appendix D.

Green infrastructure, sports and leisure

While distributing the development across South Cambridgeshire has the potential to dilute the potential pressure on green infrastructure and open space assets compared to a more urban-focused approach, it should be noted that several of the rural centres and minor rural centres are in close proximity to SSSIs. This may result in the need for offsetting infrastructure such as SANGs.

The likely scale of growth across the villages means that the current thresholds for open space provision are unlikely to be met and only informal provision and a local equipped area of play would be provided. It is probable that the higher levels of development could help to expand and improve the provision at the rural centres and minor rural centres, which would in turn decrease the distance travelled to access sport and open space. This said, the provision here is likely to be based on the needs of the rural centre or minor rural centre itself and may not take into account the needs of the surrounding settlements.

Appendix D shows specifically what is likely to be required. For sports halls it is unlikely that this scenario would provide sufficient critical mass to create significant new centres and contributions would most likely be taken for off-site provision rather than construction of new ones. Given the need to demonstrate a clear link between development and planning contributions under the s106 regime, this may result in achieving less funding for sports and recreation than would be possible with a more urban-focused approach – unless a contributions strategy is created to provide for this, which may be controversial and difficult to implement, and subject to the final distribution.

The result of this is that it is likely that this scenario is likely to generally exacerbate the current situation with regard to open space and sports provision. Specifically, it is likely that more people will be living in locations where they are less able to access sport and open space. To do so, people will need to travel to other settlements higher up the hierarchy to access a wider range of facilities. While this scenario may result in greater provision being closer to the more rural villages than at present, that provision would most likely be based on the needs of growth within that village and may not take into account the growth needs of the surrounding villages.

Utilities

It is assumed that any expansion would occur on the outskirts of rural villages, such that the nearby area may be partly served by the existing utility networks, with the likelihood that existing infrastructure may need to be extended from the village.

As outlined above existing utilities infrastructure may need to be extended from the village, i.e. there may not be a direct connection from an adjacent road. Consideration may need to be given to traffic management and timescales if infrastructure requires extending from the village centre.

The considerations about the limitations of the type of utility networks available, particularly water and telecommunications as set out in Scenario 4 are also relevant here. There are likely to be similar capacity and reinforcement issues on the existing local utility network as those identified in Scenario 2, 3 and 4.

With regard to flooding, there are constraints imposed by the extent of existing fluvial and surface water flood risks which may mean specific sites are challenging to deliver. However, there may be opportunities within sites to incorporate on-site attenuation within larger sites which would have the wider benefit of reducing flood risks downstream.

4.1 Spatial scenario 6: focus on public transport corridors

This option focuses homes along public transport corridors around transport hubs. The supply to meet the minimum needs are NEC, a small new settlement on a public transport corridor, and the balance spread across 18 villages sited along existing or proposed public transport corridors.

To meet the medium growth figures NEC, and a large new settlement of 9,000 homes on a public transport corridor is required, with the balance again spread across the 18 villages.

To meet the maximum growth figures the distribution is the same as medium except all delivered at higher delivery rates.

Transport infrastructure

While it is likely that existing and planned infrastructure could support the minimum growth levels, capacity enhancements will be required to deliver the medium growth option and big-ticket items such as the CAM required to realise the maximum levels.

High-quality public transport infrastructure would reduce car dependency, providing that the public transport nodes are within walking or cycling distance of new homes.

Existing walking and cycling infrastructure will need to be improved to provide links from new homes to public transport nodes.

Depending on the public transport corridor, infrastructure improvements are likely to be required to improve services, frequency and reliability.

Social and community infrastructure

The social and community infrastructure requirements required on NEC and in a new settlement are expected to come forward on site as part of the development. As with Scenario 1 and 4 any development that extends beyond 2041 will need to provide adequate facilities in a timely manner and in line with the housing growth. This should be carefully managed through appropriate trigger points within the trajectory.

There is an additional village element that is significant in the medium option and slightly less so in the maximum option. For the village growth there may be an issue with achieving critical mass at any of the villages and reaching the necessary thresholds required to provide new facilities on site.

Similar to Scenario 5 there are issues about the capacity of existing facilities and their ability to cater for the new population as well as the potential inefficiencies of dispersing the growth

which leads to increased travel to access a wider range of facilities. An indication of the facilities required resulting from the development and population associated with this scenario is set out in Appendix D.

Green infrastructure, sports and leisure

It is assumed that a new settlement would be planned in a manner so as to provide sufficient open space and sports facilities to meet its needs. The maximum growth option will lead to a land requirement for outdoor sport and recreation within the NEC area comprising approximately a third of its total area. This is unlikely to be achievable under traditional provision methods and so alternative approaches to provision which are off-site or more land efficient are likely to be required (as summarised in paragraph 4.3).

Having said this, due to the lower anticipated provision of units (this scenario proposes no growth in the city and less growth at the airport under the minimum growth scenario only), this pressure would not be as great as experienced under Scenario 1..

The other growth is distributed to nodes on public transport networks, and similar to scenario 5, whilst this is likely to expand the provision of open space and sports facilities locally, this growth is not likely to be sufficient to justify any new sports halls due to insufficient critical mass (with the exception of NEC which could support a sports hall under the maximum growth option, and in respect of the 'all-time' figures). This is likely to increase pressure on existing facilities and localised improvements to facilities may not be appropriate under the s106 regime. This is likely to exacerbate the current situation where people need to travel to access a wider range of sport and open space facilities compared to a more urban-focused approach.

The tables at Appendix D show specifically what is likely to be needed for sports halls, swimming pools and outdoor space. This scenario would not justify the provision of a new swimming pool in any location by 2041, but would in the all-time medium and maximum options, although there is unlikely to be sufficient critical mass at any one location to clearly define the location of such new facilities. Provision within Cambridge may be difficult to justify as this is not necessarily close to the new population so would have transport implications.

Provision of green infrastructure as part of new development is also assumed, but the specific land-take required and form of this will depend on more detailed assessment once greater detail is available about the location and amount of development proposed.

Utilities

This option combines a number of locations and sites already considered above. It includes NEC which is considered under Scenario 1 and 2, new settlements considered under Scenario 4 and some growth at villages considered under Scenario 5. The same issues are relevant here.

4.2 Spatial scenario 7: supporting a high-tech corridor by integrating homes and jobs (southern cluster)

This option focuses new homes close to existing and committed jobs around the south of Cambridge. The additional sources of supply to make up the balance to meet the minimum needs are one smaller new settlement of 4,500 homes on a public transport corridor within the

southern cluster and the balance equally distributed between the five villages in the core southern cluster and also on a public transport corridor.

To meet medium growth figures the distribution is as above with further villages included that are within the Southern Cluster but not in public transport corridors.

To meet the maximum growth figures one large new settlement of 9,000 homes on a public transport corridor in the south is required with less growth spread equally across the five southern villages. This option then adds the Airport and NEC to make up the numbers all of which are provided at higher delivery rates⁸.

Transport infrastructure

This scenario will be impacted by the findings from the A505 study about what transport infrastructure improvements are required for all modes.

The opportunity exists of placing homes close to jobs that will increase propensity for residents to walk and cycle. This must be matched with dedicated walking and cycling infrastructure, as well as public transport infrastructure from existing and new settlements to the surrounding employment hubs.

Social and community infrastructure

We expect that any new settlements would provide all necessary social and community infrastructure as part of those developments. Similar to Scenario 4, these sites will continue to be developed beyond 2041 and should provide adequate facilities in a timely manner and in line with the housing growth. This should be carefully managed through appropriate trigger points within the trajectory.

Similar to Scenario 5 there are issues about the capacity of existing facilities and their ability to cater for the new population as well as the potential dangers of dispersing the growth which leads to increased travel to access a wider range of facilities. This is particularly the case where small levels of growth are directed to the lower order villages. However, in the medium option, that seeks to provide approx. 5,110 homes to five villages, there may be more opportunity to concentrate a greater level of development and provide social and community facilities on site. Any new provision should complement existing provision and capacity at the villages. The maximum option adds sites in the north, which have been discussed in Scenario 1 and 2. An indication of the facilities required resulting from the development and population associated with this scenario is set out in Appendix D.

Green infrastructure, sports and leisure

All three growth options propose a new settlement to the south. It is assumed that a new settlement would be planned in a manner so as to provide sufficient open space, sports facilities and green infrastructure to meet its needs.

The distribution of growth within villages is likely to lead to similar trends identified in relation to Scenario 5, in that whilst this is likely to expand the provision of open space and sports facilities locally, this growth is not likely to be sufficient to justify any new sports halls or swimming pools due to insufficient critical mass (even though new sport halls would be justified by the overall total). This will increase pressure on existing facilities and is likely to exacerbate the current situation where people need to travel to access a wider range of sport and open space facilities compared to a more urban focused approach. It may be more difficult to secure sports and open space improvements from this type of development pattern unless a specific s106 strategy is developed. Provision of green infrastructure as part of new development is also assumed, but the specific land-take required and form of this will depend on more detailed assessment once greater detail is available about the location and amount of development proposed.

The tables at Appendix D show specifically what is likely to be required. The maximum option will lead to a significant land requirement for outdoor sport and open space within the NEC area and at the Airport site, and similar to scenario 1. However, given the reduced level of growth within Cambridge, this pressure would be slightly less.

Utilities

The question here is how closely new residential development will be located to commercial properties, and if they are in close proximity it is likely that the future development sites would be fairly well served by the existing utility networks serving the existing commercial properties.

As outlined above, existing utility infrastructure will likely be serving the existing commercial properties, such that any new connections may either be direct from an adjacent road or may require extending from nearby the commercial properties to the new development sites.

There are likely to be similar capacity and reinforcement issues on the existing local utility network as those identified in Scenario 2, 3, 4, 5 and 6.

4.3 Spatial scenario 8: Expanding a growth area around transport nodes

This option focuses homes at Cambourne: along the A428 public transport corridor that is due to be served by a new East West Rail station and the CAM. To meet the minimum needs Cambourne will be expanded by equivalent of a small new settlement (4,500 total), and the balance spread across three villages on the A428.

To meet medium growth figures a further four minor rural centres/group villages within 5km of Cambourne are required. In addition, NEC will also be developed.

⁸ It is not entirely clear how this option still retains a southern cluster focus with the northern sites included – it appears to become more of a hybrid concentrating on the north/south corridor when delivering the maximum growth levels.

To meet the maximum growth figures there will be greater expansion of Cambourne by the equivalent of a larger new settlement (9,000 total) together with growth spread across three villages on A428, one Minor Rural Centre and three Group villages within 5km of Cambourne all at higher delivery rates. In addition, Cambridge Airport and NEC are required at higher delivery rates.

Transport infrastructure

This scenario is reliant on the planned A428 scheme as well as new infrastructure for the new settlement. In addition, capacity enhancements to support the higher medium and maximum growth levels are likely to be required. These are likely to result in significant transport infrastructure costs and reliance on East West Rail and CAM.

Further, there is a risk that housing growth may be delayed by any delay in programme for the East West Rail and CAM. If the benefits of this major infrastructure are not realised, there will be an impact of local highways infrastructure due to creation on car reliant settlements.

Social and community infrastructure

The focus on Cambourne should mean that future social and community infrastructure can benefit from the current growth that is proposed and being delivered. There are opportunities to expand and increase current and expected provision and ensure that any new settlements fully meet the needs of the new population.

As with Scenario 7 the medium scenario envisages substantial growth at villages, this time providing approx. 1,000 homes at the three villages on the A428. This could provide the opportunity to deliver social and community facilities on site and any new provision should complement existing provision and capacity at the villages.

The medium option adds NEC, and the maximum option also includes Cambridge Airport, which have been discussed in Scenario 1 and 2. An indication of the facilities required resulting from the development and population associated with this scenario is set out in Appendix D.

Green infrastructure, sports and leisure

Development at Cambourne is likely to increase pressure on the existing green infrastructure and open space; however, it is assumed that development here would be planned so as to provide for policy requirements in relation to green infrastructure, open space, sport and recreation, as has generally been the case to date.

There is potential for impacts on SSSIs and ecological designations of local importance arising from development along the A428; while sensitive distribution may be able to avoid these, it is possible that in infrastructure terms, there will be a need for offsetting green infrastructure such as SANGs. The provision of development to villages along the A428 is considered likely to result in expanded and improved facilities for open space and outdoor sports, which may help to increase access for those in surrounding villages.

The tables at Appendix D show specifically what is likely to be required in relation to sports halls, swimming pools and outdoor space. None of the growth options would be sufficient to justify the provision of a new sports hall or swimming pool within the plan period within any one site, up to 2041. This will lead to increased pressure on existing facilities, and as set out in comments on the other scenarios, unless a tariff approach is adopted, this may result in less land value uplift being captured for sports and open space.

Based on the 'all-time' figures, a sports hall could be justified at NEC (medium and maximum growth options) and the Airport (maximum growth option only) and at Cambourne (maximum option). Although the maximum growth option comprises enough development to justify a new swimming pool, it may be difficult to achieve this given that no particular area would generate such need in itself. It may be appropriate to locate a new pool in the eastern part of Cambridge given that most of the new demand would arise in this location

The maximum growth option (and to a lesser extent the medium option) could allow for support to various green infrastructure projects such as increasing connectivity to the River Cam Corridor, Chesterton Fen and Milton Park, enhancement of the Cherry Hinton Brook corridor and enhancement / expansion of local nature reserves at Stourbridge Common, Coldhams Common, Norman Cement pits/Hystor open space, Cherry Hinton East Pit, Nine Wells LNR Extension, Coe Fen/Sheep's Green and Byron's Pool.

Utilities

Depending on the location of the new developments along the A428, the sites may not be well served by the existing utility networks. However, for any sites near to Cambourne or another village along the A428, these areas could be well served by the existing utility networks. However, as outlined in relation to previous scenarios, existing utilities infrastructure may not be located near to growth sites, and longer offsite connections may be required.

The considerations about the limitations of the type of utility networks available, particularly water and telecommunications as set out in Scenario 4 and 5 are also relevant here. There are likely to be similar capacity and reinforcement issues on the existing local utility network as those identified in Scenarios 2, 3, 4, 5, 6 and 7.

Specifically in relation to Cambourne, there are significant wastewater treatment capacity constraints which would need to be resolved to support growth in this area. The issue is not insurmountable but initial indications are that it could be technically challenging and/or costly.

5 Conclusions

At the beginning of Section 3 we set out the key issues arising from the different types and scales of growth. In this section, we draw this together by main infrastructure item and then in the context of the eight different spatial scenarios.

5.1 Transport infrastructure

The minimum growth figures in most of the scenarios can be supported through the substantial investment planned in the transport infrastructure associated with existing planned growth. However, it is likely that scenario specific additional transport infrastructure will be required. In general, locating homes close to jobs give the best chance to improve walking and cycling potential and this should be a key priority.

The maximum growth levels to 2041 and beyond, together with the associated higher delivery rates, will require significant investment in transport infrastructure items, as well as other projects related to the potential Green Belt sites and new settlements. There is currently uncertainty about the delivery of these items, and this will need to be achieved if these growth levels and scenarios are pursued. The transport infrastructure costs required for each growth scenario would depend on whether growth is located to benefit from existing schemes, or if there is a need for new standalone transport infrastructure.

It is essential that all the dispersal scenarios, together with Scenario 3, provide viable linkages to jobs in and around Cambridge. For all growth levels, the village dispersal Scenario 5 would require new transport infrastructure for all modes to make sustainable communities. The funding required by numerous smaller developments, with differing completion schedules, would pose difficulties and affect deliverability of the required significant transport infrastructure.

Scenario 7 explicitly seeks to locate homes where there is a large concentration of jobs south of Cambridge. However, it will still require new transport infrastructure to link new homes to Cambridge, potentially via the Cambridge south east transport scheme. Scenario 8 would likely require significant investment in public transport. Transport modeling would need to test if highway improvements are required for the A428. The potential impact of a new railway station would also need to be assessed, and the amount of growth needed to support this. For both the maximum and medium options, capacity enhancements to existing transport infrastructure are likely to be required to realise further growth around Cambourne.

5.2 Social and community infrastructure

Social and community infrastructure requirements are directly related to population growth and consequently the higher growth options generate the need for a considerable number of new educational, primary health care, community and library facilities to be provided. Our calculations indicate the need for between 7-34 new primary school forms of entry, 5-25 secondary forms of entry, 4-22 new full time equivalent GPs with between 920-4,600 sqm of new primary healthcare floorspace as well as between 870-4,400 sqm of community facilities and 130-1,200 sqm of library provision.

It is assumed that the scenarios that include large new development sites, such as NEC Cambridge, Cambridge Airport and new settlements will be better able to provide these community facilities on-site as part of the development. As there is likely to be more certainty about the delivery of these facilities where they are to be provided on site as part of a large scale planned new growth area. Conversely, these larger new settlements may struggle to access school places in existing schools, meaning delivery of places at new schools will need to take place in an early phase of the settlement's development.

The densification and rural dispersal scenarios (1 and 5) rely on the spare capacity of existing facilities, which in most cases does not exist. Therefore, there is a risk that there will be a detrimental impact on existing facilities. In addition, delivery is less certain because the distribution of growth may not be able to generate the critical mass to provide new facilities in the right locations easily accessible to the population that need them. This may also lead to increased travel to access a wider range of facilities.

5.3 Green infrastructure, sports and leisure

The maximum level options generate significant requirement for open space and sports provision, which in terms of the outdoor provision, will be very challenging to deliver the full 'space requirement' in compliance with the standards. This is due to the high numbers of people and also the high-density development assumptions. As such, to achieve the maximum scenarios, a radically different way of delivering and using open space is likely to be required. This will need to focus on maximising the use of any such provision and in particular land area used, which is challenging given the competing demands and expectations of multifunctionality. Achieving this may result in some compartmentalisation of uses; for example, provision of artificial sports pitches, sports pitches within buildings on multiple levels and provision of more naturalised green space on roofs and three-dimensional parks (i.e. provided in above or below ground structures). Such provision could be co-located with other types of community infrastructure such as nurseries, schools, and other civic functions.

This said, it would still be recommended to provide significant amounts of green infrastructure at ground level as this can better link into existing green infrastructure assets. Designing development around multifunctional corridors, for example routes which provide for motorised transport, walking and cycling, drainage and ecological connectivity, with pocket park areas – rather than the traditional road highways corridors – may be a solution to help achieve this. Indeed, many of the planning documents for Greater Cambridge promote a similar approach, although this is likely to need to be expanded further. Provision of green infrastructure, open space and sports provision in this manner is likely to result in proportionately greater costs than the traditional methods, which may affect viability. It is also likely that provision off site will be required, which could, for example, involve focusing green infrastructure improvements to important nature sites which are not necessarily near to development locations.

Whilst the above applies to the maximum growth options, the principles could also be applied to the minimum and medium options in specific locations where high growth is proposed, such as in Cambridge City under the medium growth option of scenario 1.

Any new provision of green infrastructure and open space should be supported by clear ownership and transfer arrangements, access rights, governance and management processes to ensure its effectiveness for the population in the long term.

The significant growth proposed under these scenarios may also result in loss of existing habitat and habitat fragmentation, due to the physical impact of development. It is important that development is designed to consider the current habitat networks which are found within a site and how impacts on these can be mitigated, taking account of the need to secure net gain and to double nature.

All scenarios result in a significant amount of growth in the Greater Cambridge area, which will result in increased pressure on water resources. This is a significant issue which would also affect green infrastructure assets. This is addressed in detail in the Greater Cambridge Integrated Water Management Study.

5.4 Utilities

The more rural options for development (Scenarios 4, 5 & 6, 7 and 8) will need to consider the availability of connecting to existing networks, looking at possibilities of longer offsite connections and lead in times for reinforcement works required. For these sites, it is recommended that location of the nearest existing utility infrastructure should be considered at an early stage, as this can impact both project cost and programme, and can make a location unviable. Until we have specific sites to consider, the generic consideration of rural options can only point out that there may be some existing capacity to draw on, The main consideration is that the rural options will inevitably be lower density and more dispersed, which compared to the urban options offer far less opportunities for economies of scale / concentration and will therefore be more expensive and require more land.

In both rural and urban areas, existing utility infrastructure could pose a constraint to the site. Smaller infrastructure will likely be able to be diverted, but strategic infrastructure could pose a significant constraint to a site. It is recommended that as soon as any areas of land are identified that an existing utility constraints review is undertaken to establish whether the land would be viable for development.

Across the country at present, utility networks are increasingly heading towards maximum capacity. With the introduction of EV charging requirements and the phasing out of gas-fired heating and hot water, there is a higher risk of reinforcement being required on the networks in order to supply new developments. The risk of reinforcement can affect both project cost and programme and should be highlighted at the early stages of every development. Our review indicates all the spatial options would be served by electricity substations with capacity issues, but, in our view, this is primary concern is around managing timely delivery potentially through forward funding rather than acting as an absolute constraint. An early review of sub-station capacity will be necessary once the spatial strategy is agreed.

Our analysis of water issues has flagged a number of constraints around wastewater treatment which need to be factored in when considering the scenarios and options: firstly in terms of the timing of relocating the WRC from NEC which may impact on delivery rates for the higher growth options and secondly in relation to Scenario 6 which focuses growth around Cambourne which is an area where the existing WRC will need to be bolstered.

In relation to water supply, we identified a key concern around the higher growth options (medium and maximum) where the timescale for the delivery of long-term improvements is nearly a decade too late, if growth were to be realised in line with the maximum growth option. For the medium growth option, we think that this disconnect is manageable with quite significant

interventions; however, the time lag on the maximum of option is such that even these interventions are unlikely to be sufficient.

5.5 Summary

We understand that the GCSPS will use our high-level findings as one of many considerations in selecting or further developing a scenario which will form the preferred option in the emerging plan. While we recommend that this report is read as a whole, particularly having regard to the caveats and issues identified as being common to all scenarios set out in Section 2, the following summarises our findings on the various scenarios:

1. **Focus on densification of existing urban areas:** this scenario offers opportunity through the existing network of infrastructure in place, and the much greater opportunities for economies of scale. However, we think much of Cambridge's infrastructure is at or close to capacity and therefore given general space limitations across the City the challenge is in terms of providing the necessary incremental infrastructure improvements. Less of a concern are the standalone brownfield development sites at the NEC (all growth levels) and Cambridge Airport (medium and maximum growth) as it is expected that master-planning can ensure that appropriate facilities are provided. Although there are likely to be additional issues associated with brownfield sites, such as decontamination, existing traffic levels and congestion, and removal of the wastewater treatment works at NEC.
2. **Focus on edge of Cambridge: outside Green Belt:** this is likely to require new infrastructure to support growth, including decontamination of brownfield land; this may mean that the cost profile of development is weighted to the early part of the plan period and could present financing issues and also that completions remain low in early years.
3. **Focus on edge of Cambridge: within the Green Belt:** as with Scenario 2, we anticipate similar cost profiling and slow delivery issues. However, in addition to Scenario 2, we expect that the transport costs associated with delivering public transport improvements will be greater given the reduced connection with existing urban areas.
4. **Focus on new settlements:** all levels of growth focus development on enhanced public transport corridors; this has benefits in terms of ensuring more sustainable development, particularly in the higher growth options which come with greater critical mass. Depending on the distribution of growth adopted, this could provide the necessary critical mass around new transport nodes required to fund those improvements. However, as identified above, there are high upfront costs as much of the infrastructure will be needed in advance or very early in the build-out. All these issues add substantially to costs.
5. **Focus on dispersal: villages:** this scenario will place burdens on existing infrastructure; combined with a dispersed pattern of development, this means that the proportionate cost of infrastructure is likely to be greater as it is used less intensively or generates the need to travel to remote infrastructure.
6. **Focus on public transport corridors:** the distribution of growth along public transport corridors which may mean that development can contribute to paying for new public transport infrastructure. However, the distribution of the balance of growth beyond the one new settlement risks giving rise to the inefficiencies identified in Scenario 5, particularly in relation to social, green and sport and leisure infrastructure.
7. **Supporting a high-tech corridor by integrating homes and jobs (southern cluster):** apart from under the minimum level of growth, this scenario results in dispersed growth across the area, including outside main public transport corridors which might result in a greater infrastructure cost burden. The maximum growth level would mitigate this risk to

some extent due to the large scale of the new settlement proposed which provides scope for critical mass and efficiencies.

8. **Expanding a growth area around transport nodes:** focusing growth at Cambourne is likely to tie development to the delivery of large-scale transport infrastructure; delays to the

delivery of that infrastructure which may be outside the control of the constituent authorities could act as a brake on development.

Appendix A IDP scoping report



Scoping Report

Greater Cambridge Infrastructure Delivery Plans

Page 631

On behalf of **Greater Cambridge Shared Planning Authority**



Document Control Sheet

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For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
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B	27 July 2020	Final	RN	JL	CH

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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1 Introduction

1.1.1 This Scoping Report has been written by Stantec UK (Stantec) with LUC for the Greater Cambridgeshire Planning Service (GCPS). It outlines the infrastructure topics to be included within each of two Infrastructure Delivery Plans (IDP), to inform the development of the North East Cambridge Area Action Plan (NEC AAP) and the Greater Cambridge Local Plan (GCLP).

1.1.2 The intention of this report is to confirm our approach to the study. We aim to use parts of this report in the final product. So that we can efficiently move to the final report without reworking text, we have written this report in the past tense. Please make necessary allowances when reviewing this scoping report.

1.1.3 For each topic, we have summarised relevant considerations and key data inputs that have been included to ensure we have sufficient information to reach evidenced conclusions on infrastructure requirements, costs, funding and delivery mechanisms. Viability consultants have been appointed separately and we will work with them to integrate the findings and explore the relevant delivery mechanism to secure contributions from development to deliver the required infrastructure.

1.1.4 This follows consultation with technical experts within GCSP on document requirements, building upon Table 1 of Stantec/LUC's response to tender document. This consultation is integral to building consensus and bridging any gaps in information.

1.1.5 The NEC AAP and GCLP IDPs share many of the same information requirements. However, these are at different stages of preparation, with the NEC AAP further advanced. This means we have less information for the GCLP, which is reflected in the programming for that study. Their current positions are outlined in the sections below.

1.2 North East Cambridge Area Action Plan

1.2.1 GCSP is leading planning for the comprehensive, mixed-use regeneration of the north east fringe of Cambridge through the NEC AAP. The NEC AAP area, shown in Figure 1.1, is located in the north-eastern edge of the city within Cambridge City and South Cambridgeshire local authority areas, abutting the A14 on its northern boundary. The eastern part of the area contains the Saint Johns Innovation Centre and the Cambridge Business Park, and the Cambridge Water Recycling Centre, and a number of smaller employment sites. The western part, on the other side of Milton Road, is made up mostly of the Cambridge Science Park (CSP).

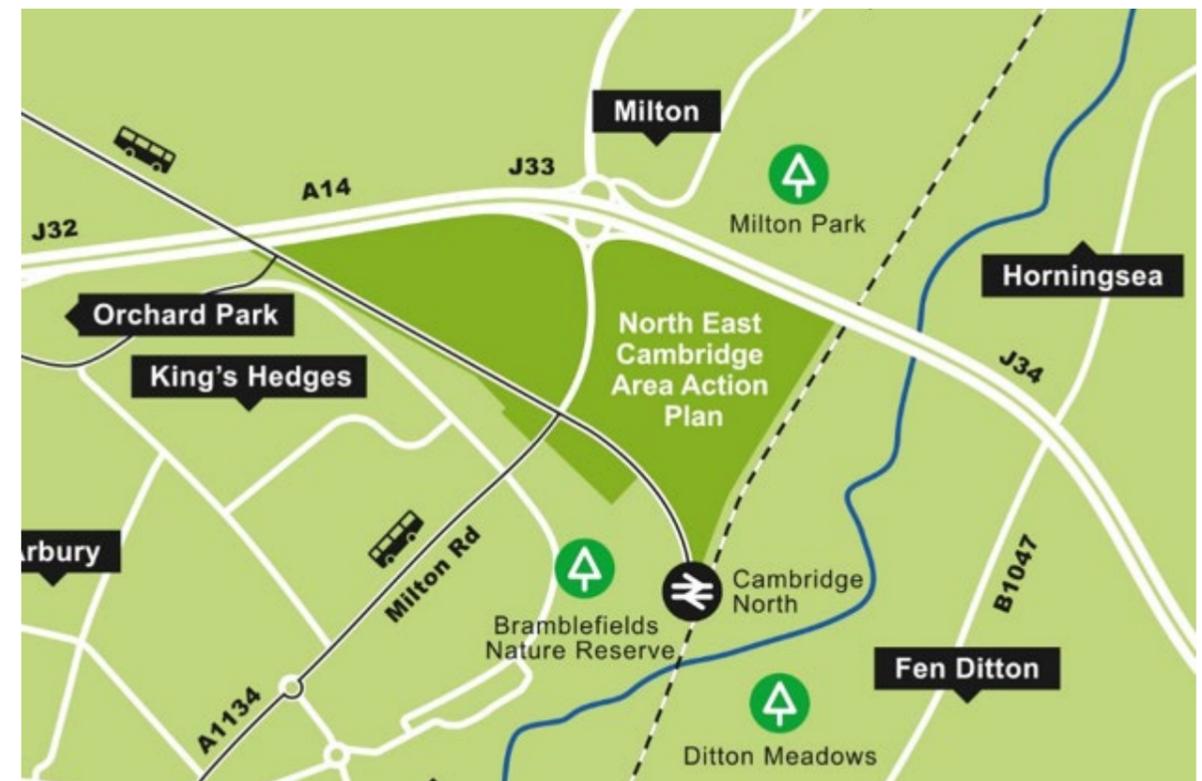
1.2.2 Plans for regeneration were first consulted on in 2014. Consultation began again in 2019, where the area was proposed to be expanded to include the intensification plans of CSP, in order to comprehensively address the shared issues of the wider NEC area, particularly regarding transport. For this consultation, GCSP produced the NEC AAP Issues and Options 2019 Report, which identified the key issues, challenges and opportunities facing the area and set out the different options for responding to these. The report underwent consultation in early 2019, accompanied by a number of reports, such as the Interim Sustainability Appraisal, which have gone on to inform the

development of topic papers relevant to the preparation of the IDP, such as Education, Future Mobility, Open Space, and others. Fundamental to the development of the site is the relocation of the water recycling centre, which will be subject to the Development Consent Order process. The timescale for this will need to be kept under review.

1.2.3 A regulation 18 draft version has just been issued with consultation running until 5 October 2020.

1.2.4 The NEC AAP will be a statutory development plan, with an equivalent status to a local plan, or incorporation into the main Greater Cambridge Local Plan. The approach will be kept under review as plan making in Greater Cambridge progresses. Following this refinements will be made before moving towards a proposed submission version

Figure 1.1 NEC area boundary



Source: Draft NEC AAP Consultation Document, 2 June 2020

1.3 Greater Cambridge Local Plan

1.3.1 GCSP are preparing a new Local Plan for the period 2020-2040. This covers Cambridge City and South Cambridgeshire. When adopted, it will replace the current Local Plans, which run from 2011-2031, (adopted 2018).

1.3.2 GCSP carried out an Issues and Options consultation in early 2020 to consider, including, amongst other issues:

- The level of homes and jobs that should be planned for, including whether to plan for more homes than the minimum number required by the standard method;
- different options for growth from densification and the edge of Cambridge to dispersal and public transport corridors.

1.3.3 These are important for the IDP because all these options will have different infrastructure implications and requirements. Following this, GCSP is aiming to produce and consider broad strategic options in Autumn 2020, with subsequent stakeholder engagement. This will be followed by consultation on a preferred options stage in summer 2021.

1.4 Method

1.4.1 Scoping is an important early step in our approach to preparing the IDPs, particularly as it informed the contents of all subsequent tasks, from the baseline survey to the final infrastructure schedule and funding statement.

1.4.2 The method used to prepare the IDPs followed the approach set out below:

- Scoping to confirm the infrastructure types to be included
- Baseline assessment to review existing infrastructure, identify current provision, capacity issues or constraints, and explore future need, plans, timescales, phasing, priority and cost through discussions with infrastructure providers
- Support the testing of growth options for the GCLP through the high-level input of infrastructure issues related to options
- Assessment of the infrastructure requirements, costs, priorities, timescale and phasing of the NEC AAP, followed by the GCLP
- Identification of the costs of each infrastructure project identified, examining who is responsible for delivery, the funding courses and their timing linked to the trajectory
- Infrastructure schedule and Funding Statement

1.5 Limitations and assumptions

1.5.1 In this study we only identify primary infrastructure requirements. This is defined as infrastructure required to accompany development to allow new households and jobs to function within a wider community. This might include transport, social and utilities infrastructure.

1.5.2 We do not consider secondary infrastructure that is defined as infrastructure intended to create accessible, serviced and developable sites. Developers build these costs into their assessment of sites. Secondary infrastructure will typically include internal access roads within sites, and connections to the mains for drainage, sewage, gas, electricity and telecoms. Developers also generally pay for small-scale open and play spaces together with on site and adjacent landscaping, and so this falls within the definition.

1.5.3 For clarification the following categories of infrastructure are excluded from this study:

- Nationally provided infrastructure is generally outside our scope (e.g. courts, prisons).

- Privately owned 'infrastructure' is outside our scope (e.g. petrol stations, pubs, post offices, shops). Costs fall on the private sector, and so are excluded from this assessment.
- Care homes. These are excluded from infrastructure costs. Care homes are part of a quasi-private market in older peoples' residential care. Social care budgets pay for some places, whereas others are privately purchased.
- Adult social care. Mainstream budget allocations work on a per capita basis, so that a growing population will be broadly reflected in rising budgets.

1.5.4 In general, land costs for infrastructure are not included in these calculations. This is because we believe that the inclusion of land costs for infrastructure is likely to make the study less (not more) accurate, for the following reasons.

- When land is needed, its price will vary widely depending on development location and planned use. We cannot be certain what its value at that time and anticipated use is. Land for infrastructure can also sometimes be provided at nil cost, for a variety of reasons.
- In some instances, land is not needed, because infrastructure will be located on land already owned by the organisation or agency involved.

1.6 Caveats

1.6.1 There are a number of caveats that need to be borne in mind:

- Infrastructure providers will need to update the information provided and estimates will need to be refined.
- Service providers are at different stages in their planning process and in the case of the GCLP work is needed to identify specific infrastructure requirements.
- Estimates of infrastructure requirements, costs and finding involve generalisations and assumptions. As a larger area, GCLP in particular with require appropriate generalisations to be applied.
- The infrastructure assessment is not itself a policy document. Information included in it does not override or amend the various agreed/adopted strategies, policies and commitments which local authorities and other infrastructure providers currently have in place.
- We have not formally dealt with demographic changes but have taken current demographic trends into account. There are two demographic issues which need to be borne in mind:
 - The relationship between new housing stock and population
 - The demographic profile of the area, such as age profiles
- Time and budget do not allow us to deal with any changes in these profiles and relationships in future. We have relied on service providers being broadly aware of issues in order to give us a reasonably accurate picture of the infrastructure implications of growth in the area.
- Public services, and hence the infrastructure they demand for delivery, are in a constant state of flux. Policy or technology can change rapidly. Most service

providers do not plan beyond three years, and so cannot by definition be expected to know their precise requirements in, say, 10 years' time.

- Public finances are also uncertain. They may recover at some point, but we are currently unable to predict the extent to which this might take place, or when. This means that public service infrastructure requirements as a result of growth are difficult to predict and are necessarily subject to a margin of error. This is particularly important as we are in the midst of a pandemic that will have significant implications for the worldwide economy.

2 Definitions and scope of topic sections

2.1 Transport

2.1.1 The following transport-related infrastructure types are included in the scope of this study:

- Public transport, including bus, rail and metro, park & ride, park & cycle schemes
- Active transport – walking, cycling, horse riding
- Highways
- Car parking
- Waterways
- Electric vehicle infrastructure
- Hydrogen fuel infrastructure

2.1.2 Transport projects in this growing area with numerous different stakeholders involved in their regulation, planning, funding and delivery are highly complex. This complexity and the need for projects and the contribution to their funding will be explored through liaison with the various stakeholders including Cambridgeshire County Council (CCC), Cambridge and Peterborough Combined Authority (CPCA), and Greater Cambridge Partnership (GCP). Discussion has been undertaken and will be ongoing to clarify and understand the specific projects in both the AAP area and across Greater Cambridge.

2.1.3 The sources of information include:

- North East Cambridge Area Action Plan Transport Evidence Baseⁱ, and Addendum
- Transport Strategy for Cambridge and South Cambridgeshireⁱⁱ
- Long Term Transport Strategyⁱⁱⁱ
- Rights of Way Improvement Plan^{iv}
- Smart Infrastructure Topic Paper: Future Mobility^v
- The Cambridgeshire and Peterborough Local Transport Plan^{vi}

2.2 Education

2.2.1 The education infrastructure we are principally concerned with in this study is that provided by the local education authority (LEA) in respect of primary and secondary levels as defined in the Education Act 1996. Where relevant, the IDP incorporates nursery level and further education provision, including sixth form, as determined by the LEA.

2.2.2 Special educational needs (SEN) school places are also included, and can be provided either as standalone schools or as alongside mainstream provision in local authority-maintained schools. Forecast for this need will need to be determined by CCC.

2.2.3 Requirements for schools are normally measured in Forms of Entry (FE), which are driven by population growth. The demand for local authority-maintained school places can be offset with projected capacity within schools.

2.2.4 The most accurate requirements are therefore determined in consultation with the school place planning team at the relevant local education authority. Local education authorities will generally have other preferences for: the land requirement for different school types; the most efficient number of FE to comprise a new school; acceptable distances for schools with capacity; among others.

2.2.5 We have sought to include any identified infrastructure projects connected with adult skills training and education, and contributions to them, in discussion with CCC and GCSP.

2.2.6 Sources of information therefore include:

- NEC AAP: population estimates for children at each age level, according to each individual site, apportioned across the trajectory period; projected capacity at nearby schools for offsetting
- GCLP: population estimates for children at each age level, according to predetermined zones/planning areas, apportioned across the trajectory period; projected capacity at all local-authority maintained schools according to zone/planning area
- Other sources:
 - Education Topic Paper^{vii}
 - Skills Training and Employment Topic Paper^{viii}
 - Cultural Placemaking Strategy^{ix}
 - Relevant Department for Education guidance

2.3 Healthcare

2.3.1 We are principally concerned with primary healthcare provision within communities. The need for these facilities is determined by the Cambridgeshire & Peterborough NHS Clinical Commissioning Group (CCG). Stakeholder engagement with the CCG is ongoing, currently being carried out in the NEC AAP Health Facilities Sub-group (with a focus on NEC in the first instance).

2.3.2 Healthcare-related services, such as dentists and optometrists, are commercial providers and we have not approached these in the same way. However, we note the growing trend towards the provision of hub-style community health facilities, which incorporate a range of health facilities alongside primary care. Requirements for these will be determined by the CCG based on an assessment of need, and have been incorporated into the IDP where information is available.

2.3.3 NHS trust and foundation trust hospitals contract with local CCGs to provide secondary health services, funded by NHS England. In consultation with the CCG, where appropriate, we have included information on requirements for new hospitals or upgrades to existing as a result of population growth from new development.

2.3.4 The sources of information include:

- NEC AAP: population estimates according to each individual site, apportioned across the trajectory period;
- GCLP: population estimates according to predetermined zones/planning areas, apportioned across the trajectory period; projected capacity at all local-authority maintained schools according to zone/planning area
- Other sources:
 - Health and Wellbeing Topic Paper^x
 - CCG resources and guidance

2.4 Emergency services

2.4.1 The infrastructure types related to the following emergency services has been considered in the scope of the IDPs:

- Police – including stations, community check points, etc.
- Ambulance – infrastructure required as part of hospitals
- Fire brigade – stations and upgrades to fire stations

2.4.2 Little work has been done on these elements as part of the Issues and Options stages of either the NEC AAP or the GCLP. We will use the NEC AAP^{xi} Policy on Social and Community Infrastructure, but principally, we will rely on provider feedback.

2.5 Community facilities

2.5.1 This section focuses on both community facilities, libraries, public art, and cemeteries.

2.5.2 Community facilities are defined broadly in the NPPF; however, our use here refers to the typical range of local authority-maintained social infrastructure, which could include, for example, ‘traditional’ community centres/village halls, faith-based facilities, and libraries. It is common for these to be delivered as multifunctional facilities in a community ‘hub’. The precise contents of a community hub are determined by the provider based on a strategic assessment of need, and so the IDPs will reflect an up to date understanding of this, with as much detail that can be provided.

2.5.3 For the NEC AAP, we have consulted the Community and Cultural Facilities Audit^{xii}, Cultural Placemaking Strategy and Community Centres Strategy.^{xiii} These is the main source of projects, together with the Placemaking Strategy^{xiv} and draft Social and Community infrastructure policy. We have undertaken consultation with the authors of the Community Centres Strategy (at Cambridge City Council), who provided feedback to the Cultural Placemaking Strategy.

2.5.4 Public Art features prominently in the Cultural Placemaking Strategy. Where possible, and where explicitly included in policy we will include identified public art proposals within the public realm, in consultation with the relevant provider.

2.5.5 Cemeteries do not typically fall under the scope of community facilities, however, we have been requested to consider cemeteries following the work undertaken on this subject in the previous IDP. We will use the same approach as previously and have sought feedback from the relevant provider and await advice.

2.6 Open space and green infrastructure

2.6.1 Within the scope of this study, open space comprises: amenity greenspace; country parks; public parks and gardens; natural green space; children’s play areas; and allotments in line with the Cambridge Draft Planning Obligations Strategy Supplementary Planning Document (June 2014), South Cambridgeshire Open Space in New Development SPD (2009) and Natural England GI Standards Pilot (currently being prepared).

2.6.2 Green infrastructure items have been assembled from numerous sources, including: existing ecological designations and areas identified in relation to HRA (for example suitable alternative natural greenspaces AKA ‘SANGS’); masterplan information for strategic allocations; Wildlife Trusts Living Landscapes work; Cambs-Ox Arc Natural Capital work; Doubling Nature key habitat restoration opportunities; the nature partnership biodiversity offsetting strategy; two GI opportunity mapping projects.

2.6.3 Additionally, we have reviewed tree-related strategies and research to ascertain whether any elements of this work can be identified in the IDPs.

2.6.4 Key sources of information include:

- AAP Open Space Topic Paper^{xv}
- AAP Habitat Survey and Biodiversity Enhancement Plan (ongoing)
- Strategic Flood Risk Assessment / NEC AAP FRA 2020 (ongoing)
- Cambridgeshire Green Infrastructure Strategy^{xvi}
- Greater Cambridge Green infrastructure Opportunities Mapping Project^{xvii}
- Draft Sustainability Appraisal^{xviii}
- Draft Habitats Regulations Assessments^{xix}
- Draft Natural England National Green Infrastructure Standards^{xx}
- Mapping Natural Capital and Opportunities for Habitat Creation in Cambridgeshire report^{xxi}
- Greater Cambridge Landscape and GI opportunities mapping^{xxii}
- Wildlife Trust Living Landscapes workstreams
- Local Nature Partnership work e.g. Natural Capital investment plans for the Cambridge – Oxford Arc; Doubling Nature investment plan and identified opportunities; developing with nature toolkit; offsetting strategy (several ongoing)
- Fens for the Future project^{xxiii}
- Cambridge Tree Canopy Project^{xxiv}
- Water Cycle Strategy^{xxv}
- Greater Cambridge Open Space and Recreation Strategy

2.6.5 Related to this topic is cycling and walking – the open spaces / green infrastructure scope will take account of the cycling and walking infrastructure elements contained in the transport section. However, the cost of infrastructure will not be double counted and it is made clear where the cost has been placed.

2.7 Environmental

2.7.1 This section will pick up any specific environmental issues associated with development of sites and projects, including those related to land contamination, air quality management areas, mitigation, odour, noise and others as necessary. Environmental requirements such as decontamination, undergrounding of overhead power lines or other environmental health requirements will be considered on a site specific basis.

2.7.2 This is particularly relevant to the NEC AAP and includes, for example, the A14 noise barrier on this site. We understand discussions are ongoing about how and where this is to be constructed. This may be erected within the boundary of the road, or alternatively on the site which will have different land and design implications, but in all events will need to be paid for as part of the wider site development.

2.8 Sport and leisure

2.8.1 We consider the following types of sports and leisure facilities in the scope of the IDPs:

- Indoor and semi-enclosed sport facilities such as sports halls, or MUGAs
- Outdoor sports pitches, and ancillary buildings
- Sports pitches and grounds

2.8.2 We understand that a full update on the Greater Cambridge Open Space and Recreation Strategy is starting immediately. This will be an important source of information providing an audit of the quality of existing provision and seek to identify how provision will be met more innovatively in future. An update to the Indoor Facilities Audit together with the Planning Pitch strategy will be updated next year using the Sport England matrix.

2.8.3 The sources of information include:

- Playing Pitch Strategy 2015-2031^{xxvi}
- Indoor Sports Facility Strategy 2015 – 2031^{xxvii}
- Cambridge Open Space and Recreation Strategy 2011^{xxviii}
- South Cambridgeshire Recreation and Open Space Study^{xxix}
- NEC AAP Open Space and Sports Pitch Review
- Community and Cultural Facilities Audit 2020^{xxx}
- Swimming Pool Strategy
- Relevant Sports England Guidance

¹ We will seek to include this subject to confirmation of a costs per dwelling rate.

2.9 Utilities

2.9.1 The following utilities are included in the scope of the study:

- Water and waste water
- Electricity
- Gas
- Telecommunications
- Strategic waste provision, especially household recycling centres
- Non-strategic waste provision, including bins, boxes and promotional material¹
- Data infrastructure
- Power generation including renewable energy

2.9.2 We have established the proposed growth in power generation and the requirements in terms of load calculations from the agreed trajectory. As part of this we have considered the nature of economic growth and reciprocating growth of data infrastructure.

2.9.3 Site-specific issues for the NEC AAP include undergrounding overhead power lines which will be specified, costed and timetabled. We have worked with the landowner sub-groups on water potable and waste and electricity to approach the utility providers on a consistent basis. The site-wide energy infrastructure study and energy masterplan is a key document that we are also engaged in and will be delivered in conjunction with this study.

2.9.4 The sources of information include:

- Local Network Analysis (asset utilities)
- Growth in Greater Cambridge Network Expansion Programme^{xxxii}
- Waste Service Topic Paper^{xxxiii}
- Climate Change Topic Paper^{xxxiii}
- Smart Infrastructure Topic Paper: Digital Infrastructure^{xxxiv}
- Net Zero Carbon Study^{xxxv}
- Site Wide energy and Infrastructure Study and Energy Masterplan^{xxxvi}
- Water Cycle Study, Water Attenuation Assessment and Flood Risk Assessment^{xxxvii}

ⁱ North East Cambridge Area Action Plan Evidence Base (Final), Mott Macdonald on behalf of Cambridge County Council, September 2019

ⁱⁱ Transport Strategy for Cambridge and South Cambridgeshire (Final), Cambridge County Council, March 2014. Web link: <https://www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/transport-plans-and-policies/cambridge-city-and-south-cambs-transport-strategy>

ⁱⁱⁱ Cambridgeshire Long Term Transport Strategy, Cambridgeshire County Council, July 2015. Web link: <https://www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/transport-plans-and-policies/long-term-transport-strategy>

^{iv} Cambridgeshire Rights of Way Improvement Plan, Cambridgeshire County Council, 2006 (updated 2016). Web link: [https://www.cambridgeshire.gov.uk/asset-library/imported-assets/Cambridgeshire_ROWIP_update_April_2016%20\(1\).pdf](https://www.cambridgeshire.gov.uk/asset-library/imported-assets/Cambridgeshire_ROWIP_update_April_2016%20(1).pdf)

^v Smart Infrastructure Topic Paper: Future Mobility (Final draft), Greater Cambridge Shared Planning, February 2020

^{vi} The Cambridgeshire and Peterborough Local Transport plan June 2019

^{vii} Topic Paper: Education (Final), Cambridge County Council, May 2020

^{viii} Skills, Training and Local Employment Opportunities Topic Paper (first draft), Greater Cambridge Shared Planning, January 2020

^{ix} Cultural Placemaking Strategy: North East Cambridgeshire Area Action Plan Evidence Base, LDA Design, June 2020

^x North East Cambridge Area Action Plan - Health, Community and Wellbeing Topic Paper (First draft), Greater Cambridge Shared Planning, March 2020

^{xi} North East Cambridge Draft Area Action Plan (Version 2), Greater Cambridge Shared Planning, March 2020

^{xii} Community and Cultural Facilities Audit (in progress), Greater Cambridge Shared Planning, no date

^{xiii} Community Centres Strategy, Cambridge City Council, 2019

^{xiv} Cultural Placemaking Strategy: North East Cambridge Area Action Plan Evidence Base (Final draft), LDA Design, March 2020

^{xv} AAP Open Space topic paper (draft), Greater Cambridge Shared Planning Service, ongoing, anticipated completion 2020-21

^{xvi} Cambridgeshire Green Infrastructure Strategy (complete), LDA, 2011. Web link: <https://www.cambridge.gov.uk/cambridgeshire-green-infrastructure-strategy>

^{xvii} Greater Cambridge Green infrastructure Opportunities Mapping Project (unpublished), LUC, (unpublished but expected to be published Summer 2020)

^{xviii} Sustainability Appraisal (draft), LUC, ongoing - several staged reports are available from <https://www.greatercambridgeplanning.org/emerging-plans-and-guidance/greater-cambridge-local-plan/downloads/>

^{xix} Habitats Regulations Assessment (draft), LUC, ongoing - the scoping report is available from <https://www.greatercambridgeplanning.org/emerging-plans-and-guidance/greater-cambridge-local-plan/downloads/>

^{xx} Natural England National Green Infrastructure Standards project (draft), Natural England and LDA, unpublished.

^{xxi} Mapping natural capital and opportunities for habitat creation in Cambridgeshire (complete), Natural Capital Solutions, 2020, <http://www.cpbiodiversity.org.uk/wp-content/uploads/2018/08/Cambridgeshire-habitat-mapping-final-report-FINAL.pdf>

^{xxii} Greater Cambridge Landscape and GI opportunities mapping (unpublished), Wildlife Trust, Cambridge Past Present and Future and Cambridge Ahead, unpublished – due to complete October 2020.

^{xxiii} Fens for the future project (ongoing), Fens for the Future Partnership, <https://www.fensforthefuture.org.uk/creating-the-future/partner-projects>

^{xxiv} Cambridge Tree Canopy Project (ongoing), Cambridge City Council, <https://www.cambridge.gov.uk/cambridge-canopy-project>

^{xxv} Water Cycle Strategy, Stantec (ongoing)

^{xxvi} The Greater Cambridge Area Encompassing Cambridge City Council & South Cambridgeshire District Council Playing Pitch Strategy 2015-2031 (complete), Cambridge City Council and South Cambridgeshire District Council, 2016, https://www.scambs.gov.uk/media/3455/final_playing_pitch_strategy_2016_rd-csf-190_revised.pdf

^{xxvii} Indoor Sports Facility Strategy 2015 – 2031 (complete), Cambridge City Council and South Cambridgeshire District Council, 2016, https://www.scambs.gov.uk/media/3445/final_indoor_sports_facility_strategy_2016_rd-csf-200_revised.pdf

^{xxviii} Cambridge Open Space and Recreation Strategy (Complete), Cambridge City Council, 2011, <https://www.cambridge.gov.uk/media/2467/open-space-and-recreation-strategy-2011.pdf>

^{xxix} South Cambridgeshire Recreation and Open Space Study (complete), South Cambridgeshire District Council, 2013, <https://www.scambs.gov.uk/media/10290/recreation-open-space-study-2013.pdf>

^{xxx} Community and Cultural Facilities Audit (in progress), Greater Cambridge Shared Planning, no date

^{xxxi} Growth in Greater Cambridge: Network Expansion Programme (Final), Feasibility Study for the Greater Cambridge Partnership 8600015882, UK Power Networks, October 2019

^{xxxii} North East Cambridge Waste Service Topic Paper (Final draft), Greater Cambridge Shared Waste, January 2020

^{xxxiii} Climate Change Topic Paper (First draft), Greater Cambridge Shared Planning, January 2020

^{xxxiv} Smart Infrastructure Topic Paper: Digital Infrastructure (in progress)

^{xxxv} Net Zero Carbon Study (in progress)

^{xxxvi} Site Wide energy and Infrastructure Study and Energy Masterplan (in progress)

^{xxxvii} Outline Water Cycle Study (in progress)

Appendix B Scenarios

2020-2041	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6			Scenario 7			Scenario 8		
	Minimum	Medium	Maximum																					
Cambridge urban area	2000	5600	6800					300																
North East Cambridge	1900	1900	8000	1900	1900	8000									1900	1900	8000				4900	1900	4900	
Cambridge Airport (safeguarded land)		1900	2900	1900	1900	3800															3800		3800	
Green Belt Fringe		400					3900	9500	17700															
New settlements on public transport corridors					6000	5900				3900	7350	13150				1900	2500	5100	2500	2500	5100	2500	2500	5100
New settlements on road network											2450	4550												
Villages Total				100									3900	9800	17700	100	5400	4600	1400	7300	3900	1400	5400	3900
Rural centres													1,560	3,920	7,080									
Minor rural centres													1,560	3,920	7,080									
Group													663	1,666	3,009									
Infill													117	294	531									
Villages on public transport corridors																100	5400	4600						
Villages sited along the A428 public transport corridor																						1400	3240	2340
Further Minor Rural Centre/Group villages sited within 5km of Cambourne																							2160	1560
Total	3900	9800	17700																					

Appendix C Existing standards

Table 10: Standards for provision of schools

Infrastructure	Cambridge County Council requirement (children per 100 dwellings)	Cambridge County Council requirement (FE/pupil ratio)
Primary	40	1 FE per 210 pupils
Secondary	25	1FE per 180 pupils

Table 11: Standards for provision of primary healthcare

Infrastructure	Department of Health requirement (GP/population ratio)	Department of Health requirement (sqm/GP ratio)
GP	1 GP per 1800 new residents	210 sqm per GP

Table 12: Standards for community facilities

Infrastructure	South Cambridgeshire requirement (sqm per 1000 persons)
Community facilities	111
Libraries	30

Table 13: Standards for provision of open space

Infrastructure	Cambridge City Council requirement per 1000 persons (ha)	Cambridge City Council requirement per person (ha)	Cambridge City Council requirement per person (sqm)	South Cambridgeshire Council requirement per 1000 person (ha)	South Cambridgeshire Council requirement per person (ha)	South Cambridgeshire Council requirement per person (sqm)
Informal open space	2.2	0.0022	22	0.4	0.0004	4
Provision for Children and Teenagers	0.3	0.0003	3	0.8	0.0008	8
Allotments (urban extensions only)	0.4	0.0004	4	0.4	0.0004	4

Table 14: Standards for provision of sports facilities

Infrastructure	Cambridge City Council requirement (ha per 1,000 persons unless otherwise stated)	Cambridge City Council requirement per person (ha)	Cambridge City Council requirement per person (sqm)	Cambridge City Council cost per sqm including maintenance (assumes 12-year maintenance)	South Cambridgeshire Council requirement (ha per 1,000 persons unless otherwise stated)	South Cambridgeshire Council requirement per person (ha)	South Cambridgeshire Council requirement per person (sqm) apart from indoor provision
Indoor sports facilities	sports hall - 1 for 13,000 persons; swimming pool - 1 for 50,000 persons	n/a	n/a	n/a - figure per person based on 2010 SPD	sports hall - 1 for 13,000 persons; swimming pool - 1 for 50,000 persons		0.0000969231
Outdoor sports pitches	1.2	0.0012	12000	n/a - figure per person based on 2010 SPD	1.6	0.0016	16000

Primary healthcare – number of GPs required based on ratio of 1 FTE GP per 1,800 new residents

	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6			Scenario 7			Scenario 8		
	Min	Med	Max																					
Cambridge urban area	2.2	6.5	8.5					0.3									0.0							
North East Cambridge	2.1	2.2	10.0	2.1	2.2	10.0										2.1	2.2	10.0				6.1	2.2	6.1
Cambridge Airport (safeguarded land)		2.2	3.6	2.1	2.2	4.7										2.1						4.7		4.7
Green Belt Fringe		0.5					4.4	11.1	22.0															
New settlements on public transport corridors					5.8	7.3				4.4	8.6	16.4					2.9	6.3	2.8	2.9	6.3	2.8	2.9	6.3
New settlements on road network											2.9	5.7												
Villages Total				0.1												0.1	6.3	5.7	1.6	8.5	4.9	1.6	6.3	4.9
Rural centres					0.3								1.8	4.6	8.8									
Minor rural centres					0.8								1.8	4.6	8.8									
Group													0.7	1.9	3.7									
Infill													0.1	0.3	0.7									
Total	4.4	11.4	22.0																					

Primary healthcare – floorspace requirement (sqm)

	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6			Scenario 7			Scenario 8		
	Mini	Med	Max	Min	Med	Max																		
Cambridge urban area	471	1371	1777					73																
North East Cambridge	448	465	2091	448	465	2091										448	465	2091				1281	465	1281
Cambridge Airport (safeguarded land)		465	758	448	465	993										448						993		993
Green Belt Fringe		98					919	2326	4626															
New settlements on public transport corridors					1224	1542				919	1800	3437					612	1333	589	612	1333	589	612	1333
New settlements on road network											600	1189												
Villages Total				24												24	1322	1202	330	1788	1019	330	1322	1019
Rural centres					73								368	960	1850									
Minor rural centres					171								368	960	1850									
Group													156	408	786									
Infill													28	72	139									
Total	919	2400	4626																					

Community facilities - floorspace requirement (sqm) based on population estimates

	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6			Scenario 7			Scenario 8		
	Min	Med	Max																					
Cambridge urban area	448	1,305	1,691					70																
North East Cambridge	426	443	1,989	426	443	1,989										426	443	1,989				1,218	443	1,218
Cambridge Airport (safeguarded land)		443	721	426	443	945										426						945		945
Green Belt Fringe		93					874	2,213	4,401															
New settlements on public transport corridors					1,165	1,467				874	1,712	3,270					582	1,268	561	582	1,268	561	582	1,268
New settlements on road network											571	1,131												
Villages Total				22												22	1,258	1,144	314	1,701	970	314	1,258	970
Rural centres					70								350	913	1,760									
Minor rural centres					163								350	913	1,760									
Group													149	388	748									
Infill													26	68	132									
Total	874	2,283	4,401																					

Libraries - floorspace requirement (sqm) based on population estimates

	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6			Scenario 7			Scenario 8		
	Min	Med	Max																					
Cambridge urban area	121	353	457					19																
North East Cambridge	115	120	538	115	120	538										115	120	538				329	120	329
Cambridge Airport (safeguarded land)		120	195	115	120	255										115						255		255
Green Belt Fringe		25					236	598	1,189															0
New settlements on public transport corridors					315	396				236	463	884					157	343	152	157	343	152	157	343
New settlements on road network											154	306												0
Villages Total																340	309	85	460	262	85	340	262	
Rural centres					19								95	247	476									
Minor rural centres					44								95	247	476									
Group													40	105	202									
Infill													7	19	36									
Total	236	617	1,189																					

Green infrastructure, sport and leisure

Outside space requirements (ha)

	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6			Scenario 7			Scenario 8			
	Min	Med	Max																						
Cambridge urban area	16.6	48.2	62.5	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North East Cambridge	15.7	16.4	73.5	15.7	16.4	73.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	16.4	73.5	0.0	0.0	45.0	0.0	16.4	45.0	
Cambridge Airport (safeguarded land)	0.0	16.4	26.6	15.7	16.4	34.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	0.0	0.0	0.0	0.0	34.9	0.0	0.0	34.9	
Green Belt Fringe	0.0	3.4	0.0	0.0	0.0	0.0	32.3	81.8	162.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
New settlements on public transport corridors	0.0	0.0	0.0	0.0	33.6	42.3	0.0	0.0	0.0	25.2	49.4	94.3	0.0	0.0	0.0	0.0	16.8	36.6	16.2	16.8	36.6	16.2	16.8	36.6	
New settlements on road network	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5	32.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Villages Total	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	36.3	33.0	9.0	49.0	28.0	9.0	36.3	28.0	
Rural centres	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	26.3	50.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Minor rural centres	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	26.3	50.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Group	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	11.2	21.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Infill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	32.3	84.3	162.6	32.1	73.0	150.7	32.3	84.3	162.6	25.2	65.8	126.9	25.2	65.8	126.9	32.1	69.4	143.0	25.2	65.8	144.4	25.2	69.4	144.4	

Sports halls (number)

	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6			Scenario 7			Scenario 8		
	Min	Med	Max																					
Cambridge urban area	0.3	0.9	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North East Cambridge	0.3	0.3	1.4	0.3	0.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	1.4	0.0	0.0	0.8	0.0	0.3	0.8
Cambridge Airport (safeguarded land)	0.0	0.3	0.5	0.3	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.7
Green Belt Fringe	0.0	0.1	0.0	0.0	0.0	0.0	0.6	1.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New settlements on public transport corridors	0.0	0.0	0.0	0.0	0.8	1.0	0.0	0.0	0.0	0.6	1.2	2.3	0.0	0.0	0.0	0.0	0.4	0.9	0.4	0.4	0.9	0.4	0.4	0.9
New settlements on road network	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Villages Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.8	0.2	1.2	0.7	0.2	0.9	0.7
Rural centres	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minor rural centres	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Group	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Infill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.6	1.6	3.0																					

Swimming pools (number)

	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6			Scenario 7			Scenario 8		
	Min	Med	Max																					
Cambridge urban area	0.1	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North East Cambridge	0.1	0.1	0.4	0.1	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.0	0.0	0.2	0.0	0.1	0.2
Cambridge Airport (safeguarded land)	0.0	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Green Belt Fringe	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New settlements on public transport corridors	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.2	0.3	0.6	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2
New settlements on road network	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Villages Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.3	0.2	0.1	0.2	0.2
Rural centres	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minor rural centres	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Group	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Infill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.2	0.4	0.8																					

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Greater Cambridge Local Plan Strategic Spatial Options Assessment

Integrated Water Management Study, November 2020

On behalf of **Greater Cambridge Shared Planning**



Project Ref: 48444/003 | Rev: D | Date: November 2020

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List of Abbreviations and Units

Abbreviation	Definition
CIL	Community Infrastructure Levy
ELMS	Environmental Land Management Scheme
GCSPS	Greater Cambridge Shared Planning Service
PBDE	Polybrominated diphenyl ethers
PFOS	Perfluorooctanesulfonic acid
RAPID	Regulators' Alliance for Progressing Infrastructure Development
RBMP	River Basin Management Plan
S106	Section 106 of the Town and Country Planning Act 1990
SFRA	Strategic Flood Risk Assessment
SPZ	Source Protection Zone
WFD	Water Framework Directive
WINEP	Water Industry National Environment Programme
WRC	Water Recycling Centre (Sewage Treatment Works)
WRE	Water Resources East
WRMP	Water Resources Management Plan

Unit	Definition
MI	Million litres
MI/d	Million litres per day
l/p/d	Litres per person per day

Executive Summary

Stantec UK Ltd have been commissioned by Greater Cambridge Shared Planning Service (GCSPS) to prepare an Integrated Water Management Study as an evidence study to support the development of the Greater Cambridge Local Plan.

This interim report provides a high-level commentary on the opportunities, constraints and uncertainties for water aspects (flood risk, water supply, wastewater and water quality) for the strategic (non-site specific) spatial options currently being tested by the GCSPS. These initial evidence findings will be reported to the Joint Local Plan Advisory Group in Autumn 2020, and help to inform further engagement with stakeholders. This report has been prepared in advance of completing the main Integrated Water Management Study documents (a Level 1 Strategic Flood Risk Assessment, an Outline Water Cycle Study and a Detailed Water Cycle Study), which due to timing of receipt of data and ongoing studies by others will be completed later in 2020 / 2021.

This report is based on information received to date from stakeholders. Consultation with stakeholders is ongoing and not all questions can be answered at this stage. Where necessary, we have made assumptions that aim to be conservative, technically achievable and represent a “safe” fall-back position. The analysis and findings of this interim report will be revisited in greater depth in the Outline and Detailed Water Cycle Study.

For flood risk, wastewater treatment, and water quality, there are constraints to development due to existing areas of high flood risk, wastewater treatment capacity limitations, and existing diffuse and point source pollution. At minimum, development will need to mitigate any further detrimental impacts on flood risk, wastewater treatment and water quality, to have a neutral impact. However, there are also opportunities for major development to offer betterment to existing conditions, for example by reducing flood risk downstream, reducing point and diffuse pollution, and supporting larger integrated water management schemes including more natural wastewater treatment options.

For water supply, over-abstraction of the Chalk aquifer is having a detrimental impact on environmental conditions, particularly during dry years that may become more frequent due to the impacts of climate change. None of the growth scenarios considered here offer the opportunity to mitigate these existing detrimental impacts. Even without any growth, significant environmental improvements are unlikely to be achievable until major new water supply infrastructure is operational, which is unlikely to occur before the mid-2030s. Therefore, this analysis has focussed on a “no additional detriment” neutral position. To prevent any increase in abstraction and its associated detrimental environmental impacts, mitigation measures will be necessary. All stakeholders agree this should include ambitious targets for water efficiency in new development.

For the three proposed growth trajectories, the analysis has concluded:

- Although there are constraints to development for flood risk, wastewater treatment and water quality in all three trajectories, these could plausibly be addressed with appropriate mitigation measures in compatible timescales to result in either no additional detrimental environmental impacts or betterment where possible.
- The high growth scenario has potential “deal-breaker” constraints due to water supply limitations. The timing of planning, constructing and commissioning new water supply infrastructure is not currently compatible with the Local Plan timescale for the high growth scenario.
- The medium growth scenario is plausibly achievable for water supply but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. The proposed growth could be accommodated if regional scale water supply solutions are operational by the mid-2030s, and suitable interim measures are implemented beforehand to mitigate impacts. These will need rapid planning and investment in the early part of the next Asset Management Period (2025 – 2030). There is a high uncertainty associated with the interim measures.
- The minimum growth scenario would be the most sustainable of the three trajectories, in terms of preventing any further detrimental impacts on the water environment. Interim mitigation measures will still be necessary to prevent detrimental impacts before regional scale water supply solutions are operational, but there is a greater certainty for the planning and implementation of these measures due to their smaller magnitude and later timing, compared to the medium growth scenario.

For the eight proposed location options, the analysis has concluded:

- Growth is most preferable concentrated in new settlements or urban extensions that avoid high flood risk areas and can maximise opportunities for high standards of design for flood risk management, efficient water usage and re-use, and multi-functional blue-green infrastructure.
- Growth is least preferable in dispersal to existing villages or densification of urban areas, because of the high existing flood risk in these areas, and the smaller expected size of developments offering fewer transformational opportunities for blue-green infrastructure, flood risk reduction, and high quality resilient water recycling systems.
- While development in the Cambourne area could have good opportunities for water resources with the potential to be supplied by bulk transfer, these are potentially offset by the significant constraints for wastewater treatment at Bourn and Uttons Drove WRC, for which further work would be necessary to identify technically feasible mitigation measures or alternative provision (e.g. re-routing to Papworth WRC).

These conclusions are dependent on assumptions made in this study, in particular regarding linear trajectories of growth, and allowances for growth in non-household water demand. The Outline Water Cycle Strategy, to be completed late 2020, will include scoping of the work required at the Detailed stage to support the Local Plan including assessing growth levels, spatial approach and policy options, and where possible reducing uncertainties and addressing assumptions regarding growth trajectories and non-household demand.

1 Introduction

1.1 Background

1.1.1 Stantec UK Ltd were commissioned by Greater Cambridge Shared Planning Service (GCSPS) to prepare an Integrated Water Management Study as an evidence study to support the development of the Greater Cambridge Local Plan. The Greater Cambridge area represents South Cambridgeshire District Council and Cambridge City Council (“the Councils”, Figure 1).

1.1.2 The Integrated Water Management Study will consist of:

- A Level 1 Strategic Flood Risk Assessment, to support a sequential, risk-based approach to the location of development, required as a standalone document under the National Planning Policy Framework.
- An Outline Water Cycle Study, to identify the baseline / as-existing water situation.
- A Detailed Water Cycle Study, to provide advice on the broad strategy options being considered for the location of growth and the sites coming forward for allocation in the draft Local Plan.

1.2 Assessment of Strategic (Non-Site Specific) Spatial Options

1.2.1 Cambridge City Council and South Cambridgeshire District Council completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the “Greater Cambridge Local Plan: strategic spatial options for testing – methodology” document (GCSPS, 2020).

1.2.2 The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

1.2.3 The initial evidence findings will be reported to the Joint Local Plan Advisory Group in Autumn 2020, and help to inform further engagement with stakeholders.

1.2.4 Preferred Options public consultation is planned for Summer / Autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below in Figure 2.

1.2.5 This report provides a high-level commentary on the opportunities, constraints and uncertainties for each strategic spatial option, for water aspects (flood risk, water supply, wastewater and water quality). Due to timings of receipt of

data and completion of other studies, this report has been prepared in advance of completing the Integrated Water Management Study documents listed in Section 1.1.2, which will provide further context and evidence for the commentary provided in this report.

1.3 Structure of Report

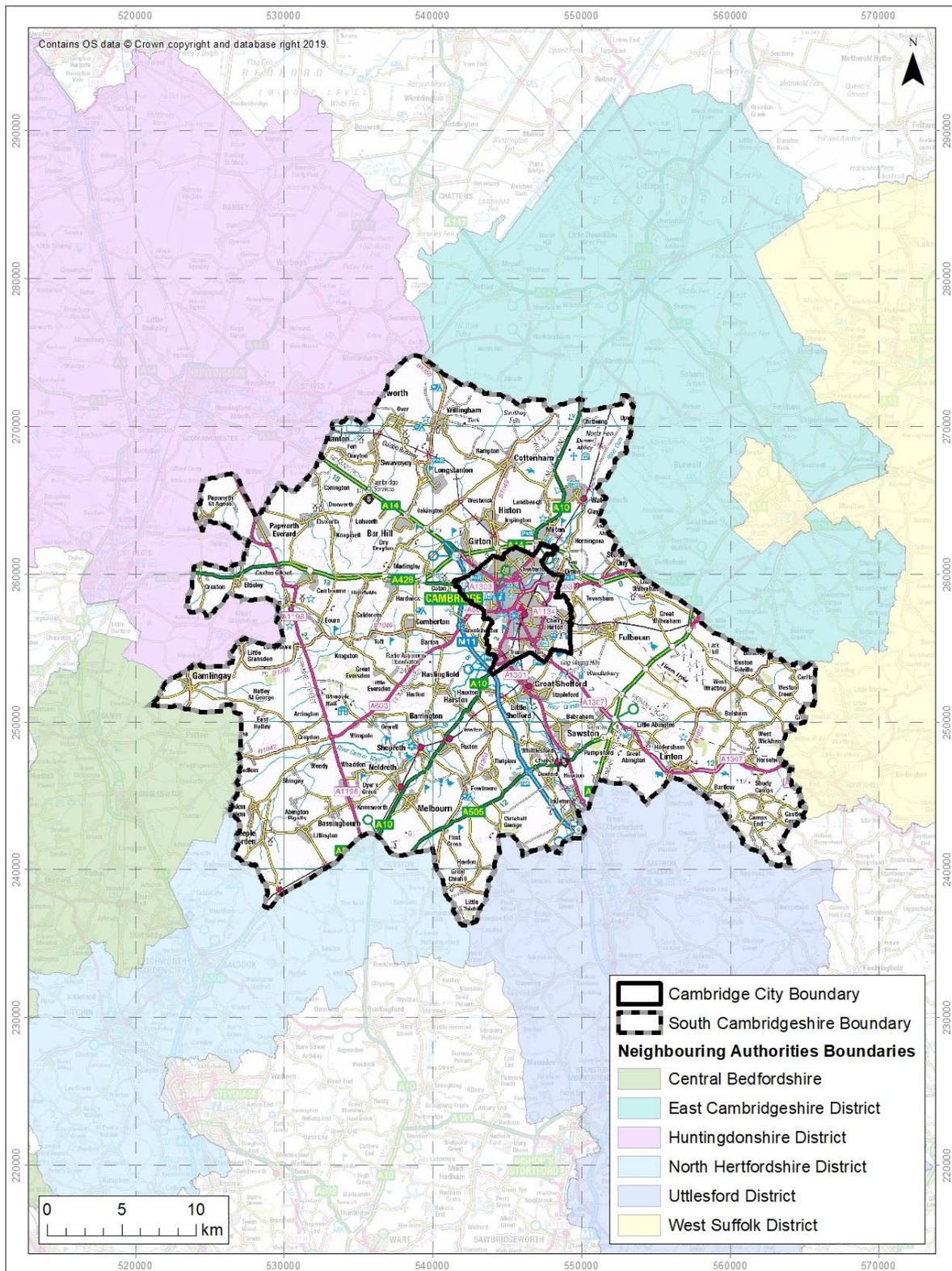
1.3.1 This report is structured as follows:

- Chapter 2 provides an overview of the strategic spatial options and growth scenarios, including population projections. Further information on these can be found in the Councils draft “Strategic Spatial Options for Testing – Methodology” paper.
- Chapter 3 provides a headline summary of the baseline / as-existing water situation constraints and opportunities. Further information on this will be provided in the Outline Water Cycle Study, anticipated to be completed in late 2020.
- Chapter 4 presents our commentary on the opportunities, constraints and uncertainties for each strategic spatial option.
- Chapter 5 presents our conclusions and recommendations.

1.4 Assumptions and Limitations

1.4.1 Our comments are based on the information we have received from stakeholders to date. Consultation with stakeholders is ongoing and not all questions can be answered at this stage. Where necessary, we have made assumptions that aim to be conservative, technically achievable and represent a “safe” fall-back position. The key assumptions in this study are:

- That growth over the plan period will be linear. In particular, this assumption affects the timings of increased water demand, which are critical in determining whether a proposed growth trajectory could be sustainable (see Appendix A). A faster initial growth rate may invalidate the conclusions of this report.
- That non-household (e.g. commercial, industrial and agricultural) demand for water will grow at the same ratio to household water demand as occurs at present. Appendix A details the allowance made; however, this could be exceeded if planning permission is granted to water-intensive developments.



J:\48444 Greater Cambridge Water Cycle Study\GIS\Workspaces\48444 GIS001 Administrative Boundaries.mxd
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Figure 1: The Greater Cambridge study area (South Cambridgeshire and Cambridge City), and Neighbouring Authorities

Process of Local Plan preparation

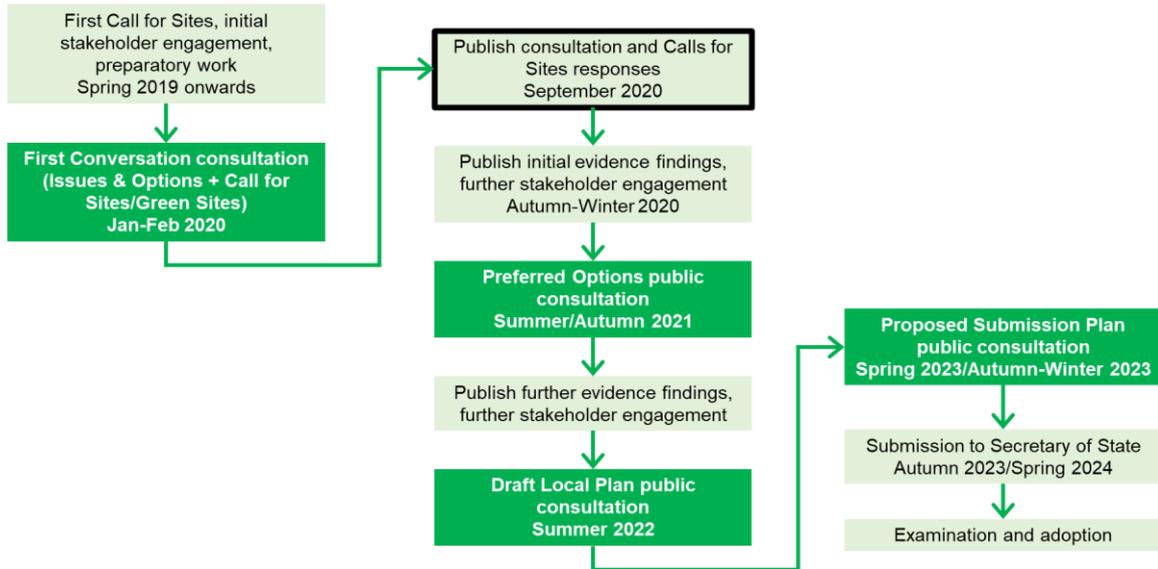


Figure 2: The Local Plan preparation process

2 Strategic Spatial Options and Growth Scenarios

2.1 Overview

2.1.1 The strategic spatial options for testing were provided by GCSPS and are listed in Table 1. For each option, a minimum, medium and maximum growth scenario is applied, for the period 2020 – 2041 (Table 2). The growth trajectories have been defined by GCSPS as follows:

- The minimum growth option is based on the Standard Method, which is the minimum level of growth the councils should be planning for according to national policy¹. This was determined to be 1,743 homes per annum (36,603 in total, 2020 – 2041). We note amendments to the Standard Method are currently being consulted on², and the revised method would reduce to the growth required to 1,518 homes per annum (31,878 in total, 2020 – 2041).
- The medium growth option is based on evidence for higher housing growth potential derived from a central scenario employment forecast, assuming a continuation of the 2011 Census commuting pattern.
- The maximum growth option uses a higher employment forecast, and assumes that the housing demand above the level of the Standard Method is provided for within the Greater Cambridge area, rather than from in-commuting from neighbouring districts.

Option Number	Option Description
1	Densification of existing urban areas
2	Edge of Cambridge - outside the Green Belt
3	Edge of Cambridge - Green Belt
4	Dispersal - new settlements
5	Dispersal – villages
6	Public transport corridors
7	Supporting a high-tech corridor by integrating homes and jobs (south of Cambridge)
8	Expanding a growth area around transport nodes (Cambourne)

Table 1: Strategic spatial options, defined by GCSPS

¹ <https://www.gov.uk/guidance/housing-and-economic-development-needs-assessments>

² <https://www.gov.uk/government/consultations/changes-to-the-current-planning-system>

Growth scenario	Employment (jobs)	Housing (dwellings)
Minimum	45,800	36,700
Medium	58,500	42,000
Maximum	79,500	57,000

Table 2: Growth options, 2020-41 (rounded up to the nearest hundred), defined by GCSPS

2.2 Housing and Population Projections

- 2.2.1 These growth scenarios include growth already allocated in the previous Local Plan. The supply of employment land is greater than that needed in all growth scenarios and therefore it is unlikely that there will be a need to allocate significant employment land. Although some will likely be necessary to address qualitative issues and ensure any new settlements are balanced, in agreement with GCSPS, employment land has not been considered in detail in this review. An allowance has been made in water demand projections for growth in non-household demand, in proportion to household demand (see Appendix A). This allowance is a key assumption of this study and could be exceeded if planning permission is granted to water-intensive developments.
- 2.2.2 The housing estimates have been increased by 10% to ensure an adequate buffer against uncertainties, and then offset by the existing supply within the planning system, including commitments and a windfall allowance. Table 3 shows the resulting balance of houses to be found for each scenario. Different delivery rate assumptions have been used by GCSPS for the maximum scenario, compared to the minimum and medium. A higher delivery rate was applied to the maximum scenario, to enable the required housing to be delivered within a reasonable number of sites. This means that the maximum scenario involves fewer sites that will be built out quicker, compared to the medium scenario.
- 2.2.3 GL Hearn consultants have produced population projections for the Councils, associated with the housing figures for each of the growth scenarios (Table 4). These are based on the baseline housing estimates in Table 2 and do not include the 10% housing buffer applied in Table 3. Therefore, to ensure consistency with the balance of homes to be found, we have estimated additional population for the 10% housing buffer using the same occupancy rates as in Table 4. Our resulting population projections are shown in Table 5.
- 2.2.4 We have assumed a baseline population of 301,253 for the Greater Cambridge area in 2020, in line with the GL Hearn assessment. No information is available regarding timing of growth, and therefore, as directed by GCSPS, a linear growth has been assumed through to 2041 as shown in Figure 3 and Table 6. This linear growth trajectory is a key assumption of this analysis. In particular, this assumption affects the timings of increased water demand, which are critical in determining whether a proposed growth

trajectory could be sustainable (see Appendix A). A faster initial growth rate may invalidate the conclusions of this report.

	Minimum	Medium	Maximum
Housing Growth + 10% buffer	40,300	46,200	62,700
Existing supply	36,400	36,400	36,400
Additional delivery	-	-	8,600
Balance to find	3,900	9,800	17,700

Table 3: Balance of homes to be found, 2020 – 2041, excluding current supply, and assuming faster delivery of existing sites in maximum scenario

Growth scenario	Housing	Additional Population (2020 – 2041)	Occupancy rate (persons per dwelling)
Minimum	36,603	73,943	2.020
Medium	41,915	87,982	2.099
Maximum	56,935	127,545	2.240

Table 4: Additional population projections and occupancy rates, supplied by GL Hearn, 2020 – 2041

Growth scenario	Housing + 10% buffer	Additional Population (2020 – 2041)	Occupancy rate (persons per dwelling)
Minimum	40,263	81,332	2.020
Medium	46,106	96,777	2.099
Maximum	62,629	140,288	2.240

Table 5: Amended population projects including 10% housing buffer, 2020 – 2041

Growth scenario	Annual Housing Growth + 10% buffer	Annual Population Growth + 10% buffer	2041 Total Population	Percentage change over 2020 population
Minimum	1,917	3,873	382,590	+27%
Medium	2,196	4,609	398,033	+32%
Maximum	2,982	6,681	441,552	+47%

Table 6: Annual housing and population growth including 10% buffer and resulting 2041 total population estimate for Greater Cambridge

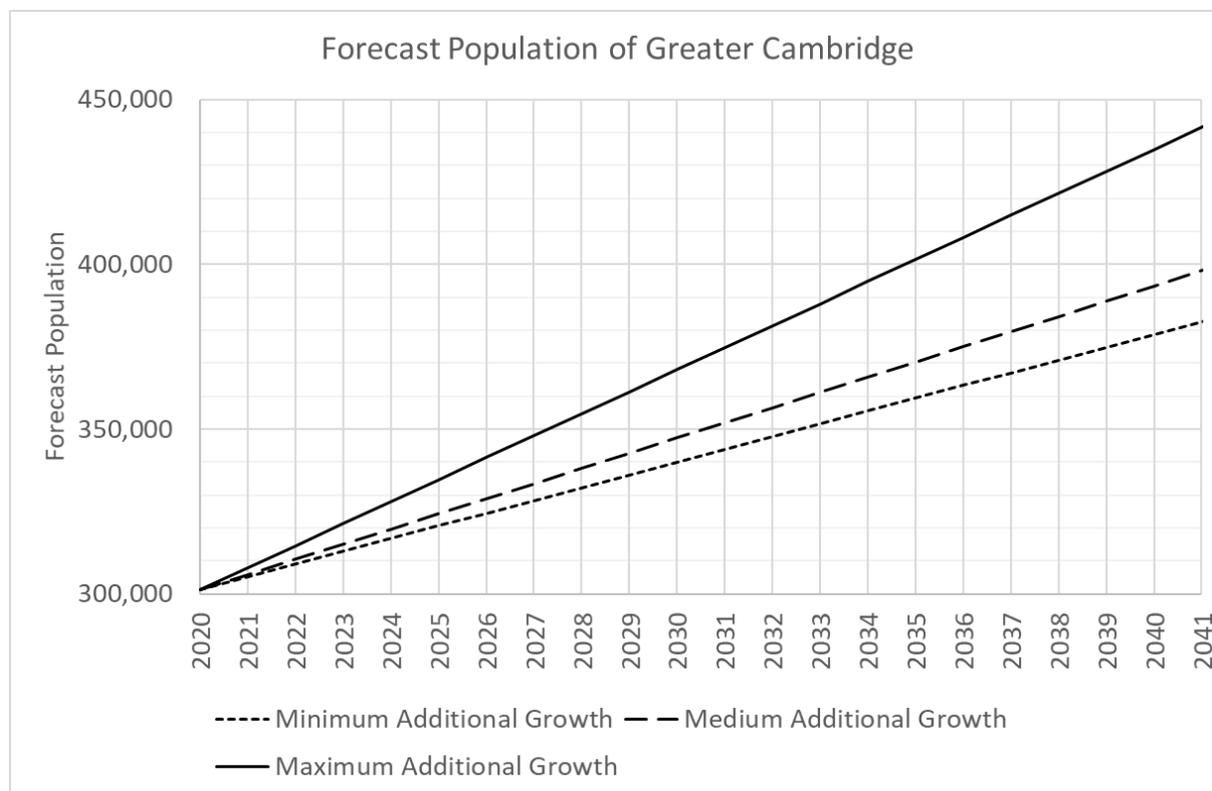


Figure 3: Forecast population of Greater Cambridge under each scenario, assuming linear growth and including 10% housing buffer.

2.3 Water Resource Zone Population Projections

2.3.1 The Water Resource Zone for the Greater Cambridge area, supplied by Cambridge Water, includes some wards of Huntingdonshire (Figure 5 overleaf). To allow a fair comparison of population estimates with the available water supply and demand in this region, we have interpolated the existing and future population of these wards from data supplied by Cambridgeshire Insight (51,393 population in 2018, increasing to 56,530 population in 2041). The resulting total population estimates for the Cambridge Water Resource Zone are shown in Table 7 and Figure 4. This is the total population exerting a demand for water from Cambridge Water, which operates a single system and does not distinguish between customers across administrative boundaries.

Growth scenario	2041 Greater Cambridge Population	2041 Cambridge Water Resource Zone Population
Minimum	382,590	439,120
Medium	398,033	454,563
Maximum	441,552	498,082

Table 7: Forecast 2041 population for Greater Cambridge and for Cambridge Water Resource Zone, including 10% housing buffer

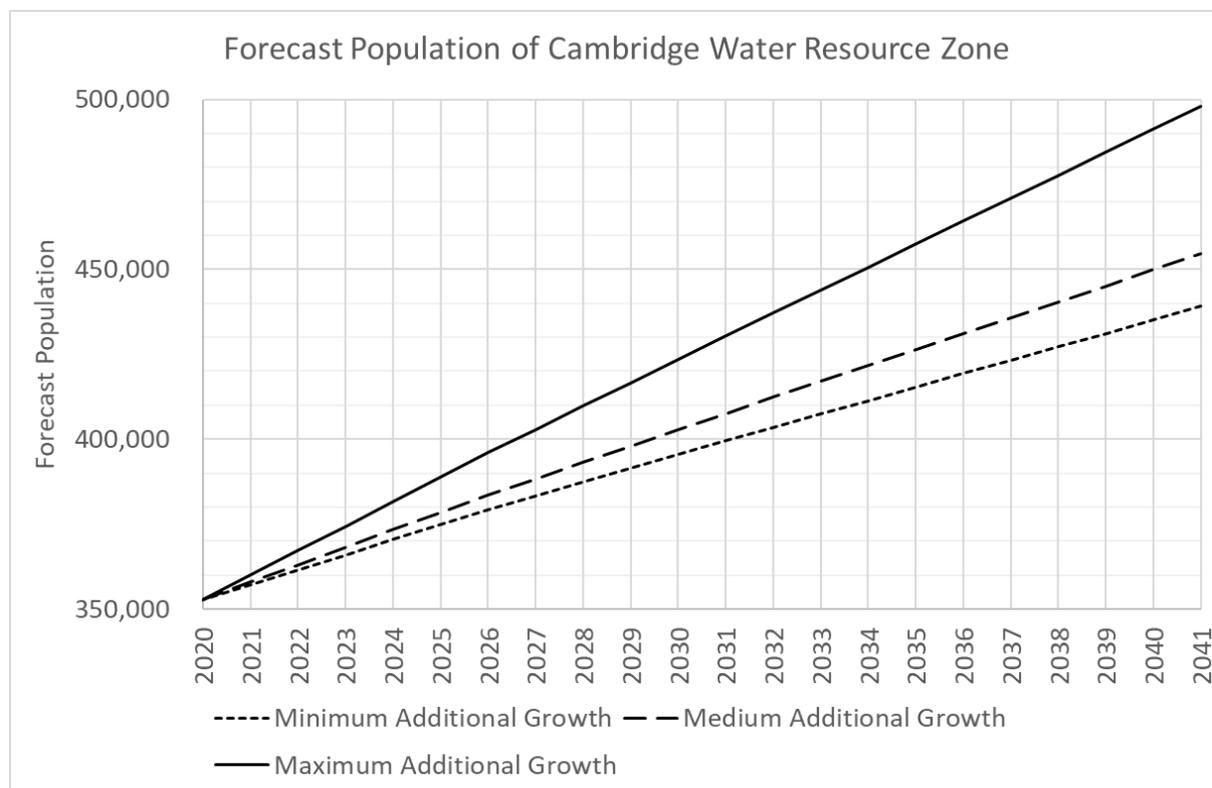
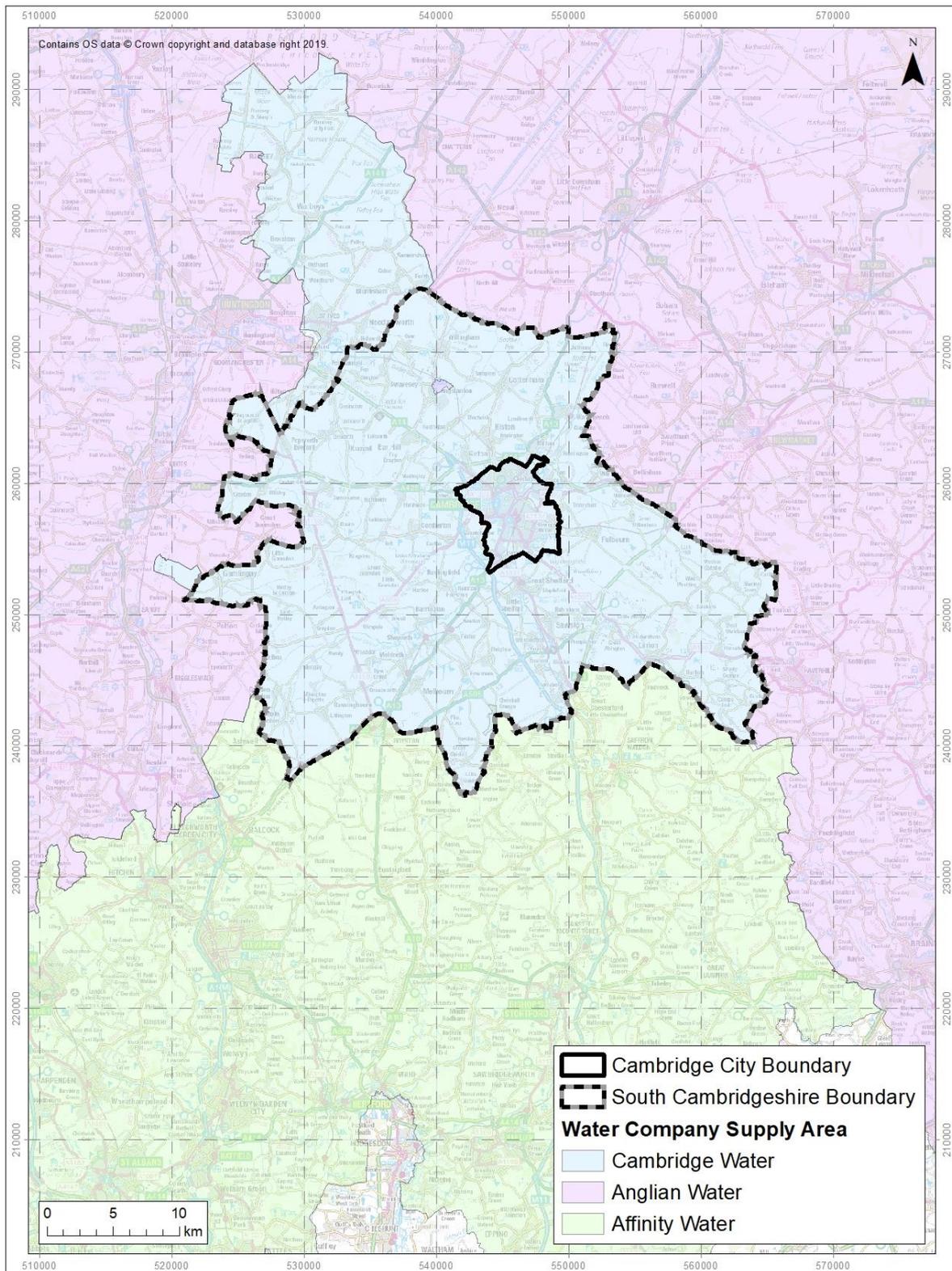


Figure 4: Forecast population of Cambridge Water Resource Zone under each scenario, assuming linear growth and including 10% housing buffer, and with Huntingdon wards included.



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Figure 5: Comparison between Greater Cambridge administrative boundaries and Water Company supply areas

3 Existing Water Situation: Opportunities, Constraints and Uncertainties

3.1 Context

3.1.1 The Outline Water Cycle Strategy and Level 1 SFRA will set out what is known about the baseline conditions in detail. These reports have not yet been fully drafted, with anticipated completion in late 2020. The headline findings are summarised below, along with the broad opportunities, constraints and uncertainties identified at this stage.

3.2 Flood Risk

	Flood Risk
<p>Headline findings of baseline conditions</p>	<ul style="list-style-type: none"> • Although fluvial flood risk from Main Rivers is reasonably well understood, there is extensive surface water flood risk and Ordinary Watercourse fluvial flood risk across the district, that is less well understood and affects many existing properties and settlements. Other potential sources of flood risk include groundwater, sewer and reservoir breach flooding. There are some locations where flood risk could represent a significant constraint to further development. These will be identified in the Level 1 SFRA, and the Sequential and Exception Tests applied to direct development to areas of lowest flood risk where possible. • To date, studies have not identified any economically justified strategic schemes that will reduce flood risk at the most at-risk hotspots. Property level resilience is likely to be the most cost-effective solution, in line with the Government’s national strategy to promote greater resilience towards flooding³. • There may be larger strategic flood storage schemes in the catchment in the future, following the Environment Agency’s River Great Ouse catchment storage and conveyance study currently being undertaken. Locations and volumes are currently unknown. Some storage capacity may be created at the future Cambridge Sports Lakes⁴ location, pending planning permission and detailed design.

³ <https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2>

⁴ <http://www.cambridgesportlakes.org.uk/>

	Flood Risk
Opportunities for development	<ul style="list-style-type: none"> • Potential for channel improvements and additional flood storage to be delivered within riparian corridors in development sites, focussing on natural flood management techniques and reconnecting watercourses to floodplains. • Potential for daylighting of existing culverted watercourses. • Potential for development on brownfield sites to reduce runoff to greenfield rates or lower, reducing existing surface water and sewer flood risk in local area. • Potential for redevelopments in existing areas of risk to showcase flood resilient communities. • Potential for site-specific hydraulic modelling to contribute to the improved understanding of local flood risk and impacts of climate change beyond site boundaries. • Potential for retrofitting of SuDS to existing developments, including sustainable retrofitting of wastewater utilities to reduce the risk of combined sewer flooding. • Potential for flood management and SuDS schemes to deliver multi-functional benefits including biodiversity enhancements and net gain, green infrastructure, landscape enhancements, and climate change adaption. • Opportunities for landscape-scale enhancements such as distributed natural flood management techniques to benefit and enhance designated wildlife sites.
Constraints to development	<ul style="list-style-type: none"> • Known surface water and fluvial flood zones are constraints to development, depending on specific site location. Known flood extents will be mapped in the SFRA currently being prepared. • Pumped catchment capacities may present a constraint to runoff rates and required storage volumes, requiring additional long-term storage and mitigation measures.
Uncertainties	<ul style="list-style-type: none"> • Updated hydraulic modelling may be needed to confirm areas of future fluvial and surface water flood risk due to the impacts of climate change, depending on specific site location. • Risk of fluvial flooding following embankment breach may need updated modelling, depending on specific site

	Flood Risk
	<p>location (River Great Ouse and lower parts of River Cam).</p> <ul style="list-style-type: none"> • Further investigations of groundwater, sewer and reservoir breach flood risk may be necessary depending on specific site location. • It is currently unclear if / how development S106 / CIL contributions could be used to contribute to flood risk management projects in areas not directly impacted by the specific development site.

3.3 Water Supply

	Water Supply
Headline findings of baseline conditions	<ul style="list-style-type: none"> • Stakeholders widely agree that the Chalk aquifer that supplies the majority of potable water within the Cambridge Water Resource Zone is already under abstraction pressure, which may be having a detrimental impact on Chalk stream baseflows and causing environmental damage, particularly during dry years. This may be further exacerbated in the future by the potential impacts of climate change (UKCP18, Met Office). Natural England have highlighted the severity of the issue in potentially affecting a number of nationally and internationally designated sites. Cambridge Water’s most recent Water Resource Management Plan⁵ includes planned reduction in total abstractions where impacts have been identified, and incorporates restrictions to abstraction licences to reduce the risk of further deterioration in the Chalk aquifer. The Environment Agency will be reviewing and most likely looking to further reduce abstraction licences from groundwater in the future to meet WFD and RBMP targets. • There is no environmental capacity for additional development in the new Local Plan to be supplied with water by increased abstraction from the Chalk aquifer. Even the current level of abstraction is widely believed to be unsustainable, potentially causing environmental damage as described above, and pressure is building to reduce abstraction rates significantly, safeguarding natural river flow. Future water demand and supply will need to be balanced in other ways, such as through reduced usage (demand management),

⁵ <https://www.cambridge-water.co.uk/about-us/our-strategies-and-plans/our-water-resources-management-plan>

	Water Supply
	<p>reduced leakage, licence trading, and the development of new supply options at the regional scale (e.g. construction of new water supply reservoirs and importing water from outside of the Cambridge Water supply area).</p> <ul style="list-style-type: none"> • Water Resources East is coordinating regional efforts to increase water supply, including construction of major new potable water supply reservoirs. In the longer term (2035 onwards), the new infrastructure could provide water to Greater Cambridge. Cambridge water are key (founding) members of Water Resources East and will be direct beneficiaries of any new supply options developed through the Water Resources East planning process. Cambridge Water are not directly involved in the regional RAPID (Regulatory Alliance for Progressing Infrastructure Development) schemes currently being funded through Ofwat (including the South Lincolnshire reservoir scheme) as their overall needs were below the threshold at the time⁶. • The development at Eddington of a rainwater recycling system by Cambridge Water and the University of Cambridge has demonstrated that larger sites can successfully use recycling to reduce demand for potable water to the withdrawn Code for Sustainable Homes Level 5 / 6 standard of 80 l/p/d⁷. However, it would be technically difficult and prohibitively expensive to retrofit this type of infrastructure to existing development. Even for sites with demand management, Cambridge Water still plan to be able to supply the average consumption rate, in case of drought or failure, therefore there is no betterment for resource planning, although environmental benefit through reduced actual usage would occur.
Opportunities for development	<ul style="list-style-type: none"> • Potential for new development to achieve significantly reduced demand, beyond the Building Regulations standard requirement of 125 l/p/d and optional requirement of 110 l/p/d consumption for new developments⁸, making full use of water re-use measures on site including surface water and rainwater harvesting, and grey water recycling.

⁶ <https://www.ofwat.gov.uk/wp-content/uploads/2019/07/PR19-draft-determinations-Strategic-regional-water-resource-solutions.pdf>

⁷ <https://www.gov.uk/government/publications/code-for-sustainable-homes-technical-guidance>

⁸ <https://www.gov.uk/government/publications/sanitation-hot-water-safety-and-water-efficiency-approved-document-g>

	Water Supply
Constraints to development	<ul style="list-style-type: none"> • There is an additional headroom (supply-demand balance) of between 2 and 4 Ml/d available in the current Water Resource Management Plan taking into account the proposed options to maximise supply and increase demand management. However, the supply-demand balance will be reviewed for the next WRMP (to be published in 2023), and the available headroom may be reduced, particularly where significant non-household or commercial development is proposed and gains planning approval. The Environment Agency would like to see existing headroom prioritised for environmental betterment. • It is therefore assumed that the development trajectory will need to be “water neutral”, i.e. result in no net loss in existing headroom and no increase in abstraction above current levels, to prevent further detrimental environmental impacts. Although reducing water demand within development sites will be essential, full water neutrality will be reliant on wider actions by Cambridge Water supported by Water Resources East, to offset net increases in demand. • To address uncertainties regarding the effects of abstraction on designated sites (including those sites where remedial measures are in place but their efficacy is still being monitored), Natural England recommend a precautionary approach to be adopted. Adverse impacts should be assumed unless evidence is available to demonstrate otherwise.
Uncertainties	<ul style="list-style-type: none"> • How water is supplied is not within the Local Plan’s remit to impose. To demonstrate sustainability, a commitment will be needed from Cambridge Water that new development will be supplied with water without increasing abstraction or reducing the current available headroom, which could result in further detrimental environmental impacts including designated sites and Priority Habitats. • It is currently unclear what volume of additional water demand could be supplied before new regional infrastructure is completed, through short-term measures such as more aggressive leakage and demand management, licence trading, or import of water from outside the region. Consultation with stakeholders is ongoing. Water Resources East will publish its first draft regional plan in summer 2021, although prior to this it will gather and present available data to its Strategic Advisory Group, which includes both councils.

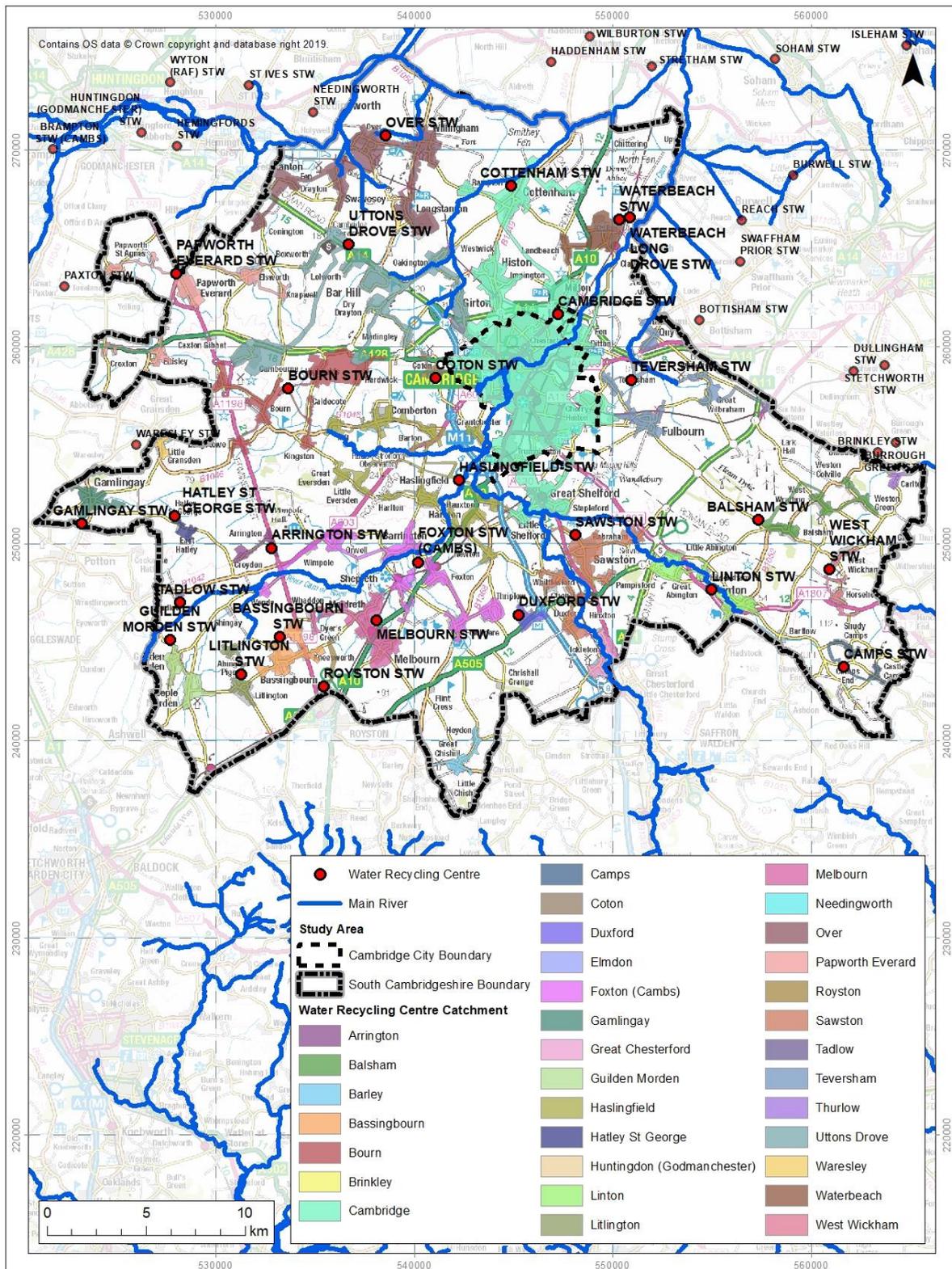
	Water Supply
	<ul style="list-style-type: none"> • The Environment Agency have not specified what further reductions in abstractions may be required to go beyond the existing cost-benefit tested levels of improvement being actioned through the Water Industry National Environment Programme (WINEP). These further reductions will be explored in the regional plan by Water Resources East, which will set out an overall destination for reducing abstraction and the timescales for implementing further actions. It is assumed that significant decreases in licensed groundwater abstraction rates will not be feasible until alternative potable water sources are available. • It is currently unclear whether the Local Plan would be able to impose a domestic household per capita consumption that is lower than the Building Regulations optional requirement of 110 l/p/d consumption for new developments. Nevertheless, all stakeholders support ambitious water efficiency targets below this optional requirement level.

3.4 Wastewater

	Wastewater
Headline findings of baseline conditions	<ul style="list-style-type: none"> • Cambridge Water Recycling Centre (WRC) is currently exceeding its discharge quantity permit, reflecting that the current population it serves (213,679) is greater than that planned for. Anglian Water are negotiating a variation in the permit pending construction of a new Cambridge WRC by 2030. • The new Cambridge WRC will be designed to accommodate a total future population of 300,000 (existing population and future growth) without deteriorating water quality in the receiving River Cam. The Development Consent Order for the new WRC will quantify its impact on downstream water quality and habitats. • Elsewhere in Greater Cambridge, there are 23 further WRC treating effluent from smaller towns and villages. Some of these have capacity within their permit to receive additional flows. Others may require investment to improve treatment so that they can treat more flows without detriment to the water environment.

	Wastewater
Opportunities for development	<ul style="list-style-type: none"> • Anglian Water are currently preparing a Drainage and Wastewater Management Plan, to be published in 2022, which will set out long term plans for the management of wastewater treatment from 2025 to 2050. The timings of the study should allow the new Local Plan proposals to be included and appropriately planned for. • Expansion of capacity at Cambridge WRC will support continued development in the Cambridge urban area or on the urban fringe. The capacity of interconnecting sewers may become an issue but can be remedied through targeted investment in larger sewers or secondary sewers connecting directly to the WRC. • New development could be supported by new green / natural treatment options such as constructed wetlands, at existing or new WRCs, with additional low energy and low carbon benefits. The feasibility of these will be dependent on location and site constraints. • Treated effluent could be used for irrigation, allowing potable water to be prioritised in abstractions. Treated effluent could also be used for potable supplies subject to quality standards and infrastructure. However, re-use of effluent would require assessment to ensure that watercourses currently receiving treated flow are not detrimentally impacted by reduced river flows below sustainable levels, and public health is not impacted (in the context of using treated effluent in the food chain). A regional scale solution could involve re-use of WRC discharges via a downstream Fenland reservoir. Water Resources East are actively investigating these options.
Constraints to development	<ul style="list-style-type: none"> • Dependent on specific site location, timing of development may need to take into account any necessary WRC or sewerage upgrade works. • Depending on specific WRC impacted by growth, there may be feasibility constraints to increased capacity (e.g. at Uttons Drove and Bourn WRC) associated with the impacts of treated effluent on the receiving water body.
Uncertainties	<ul style="list-style-type: none"> • It is currently unknown if the Environment Agency will choose to impose lower permit restrictions on WRC outflows, to improve water quality and meet WFD targets. • It is unclear what the capacity and permit situation is at the existing Cambridge WRC prior to completion of the new facility in 2030. Depending on how the current plant permit

	Wastewater
	<p>is amended, there may be capacity issues over the next 10 years.</p> <ul style="list-style-type: none"> • The current timescale for the new Cambridge WRC is aligned to milestone dates that are fixed in the Housing Infrastructure Fund allocation for the site redevelopment. The current programme is for the new WRC to be operational by March 2028, however this will be dependent on when the Development Control order is granted, and construction can begin. This could constrain the timings of additional development in its catchment. It is currently unclear whether there are any technically feasible solutions to upgrading the existing Cambridge WRC in the interim. • As specific development locations are currently unknown, it is not possible to assess particular opportunities and constraints relating to individual WRC at this stage. • Planned growth in the west of the region (Cambourne West and Bourn Airfield) could be drained to the expanded Papworth WRC via new pipelines, to avoid known constraints at Uttons Drove and Bourn WRCs. This diversion was agreed in principle for the previous Local Plan, but the current status of these potential works is unknown at the time of writing.



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Figure 6: Water Recycling Centre locations and approximate catchments

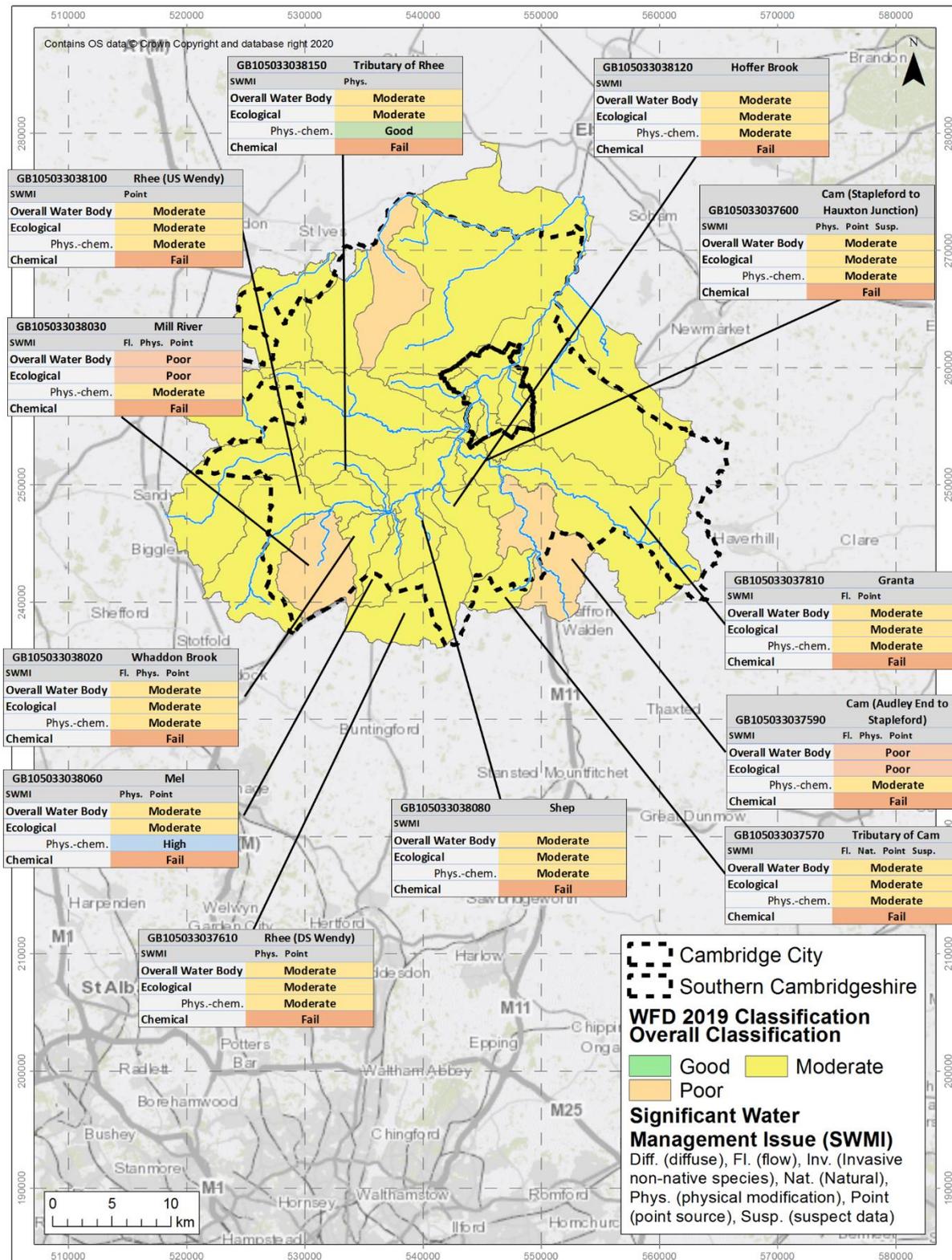
3.5 Water Quality

<p>Headline findings of baseline conditions</p>	<ul style="list-style-type: none"> • There are 25 Water Framework Directive (WFD) assessed surface water bodies (e.g. rivers, lakes and wetlands) in the Greater Cambridge area, with the most recent WFD status classifications available from September 2019⁹. Water quality in surface bodies is predominantly “moderate” (22 bodies) with three classified as “poor”. No waterbodies as classified as “good”. There has been a decline in WFD status since the previous assessment in 2016, when three bodies were classified as “good”. Reasons for not achieving good status within the study are predominantly associated with abstraction, wastewater treatment (point source discharges) and agricultural diffuse pollution. • The surface water bodies considered poor are: Cam (Audley End to Stapleford, due to point source pollution, abstraction affecting flows, and physical modification), Mill River (due to point source pollution, abstraction affecting flows, and physical modification), and Swavesey Drain (due to drought, low flows, physical modifications, and point source pollution). • All the surface water bodies are now failing on Chemical elements in the latest 2019 classifications. This is because of the new inclusion of PBDE and PFOS tests following the Priority Substances Directive (2018). These chemicals, historically used as flame retardants, stain repellents and fire-fighting chemicals, are ubiquitous and exceed environmental quality standards across the UK. The failure rate for PBDE and PFOS does not reflect an actual deterioration in water quality, but an improved approach to assessing these chemicals in water bodies. Many surface water bodies across England have failed to meet the stricter new chemical standards. • There are 5 groundwater bodies intersecting the Greater Cambridge area, with the most recent WFD status classifications available from September 2019. The overall status in four of the groundwater bodies is currently poor. The two bodies covering the majority of the Greater Cambridge area are: <ul style="list-style-type: none"> ○ The Cam and Ely Ouse Woburn Sands, which has good quantitative and chemical status. ○ The Cam and Ely Ouse Chalk, which has poor quantitative and chemical status, due to diffuse
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⁹ <https://environment.data.gov.uk/catchment-planning/>

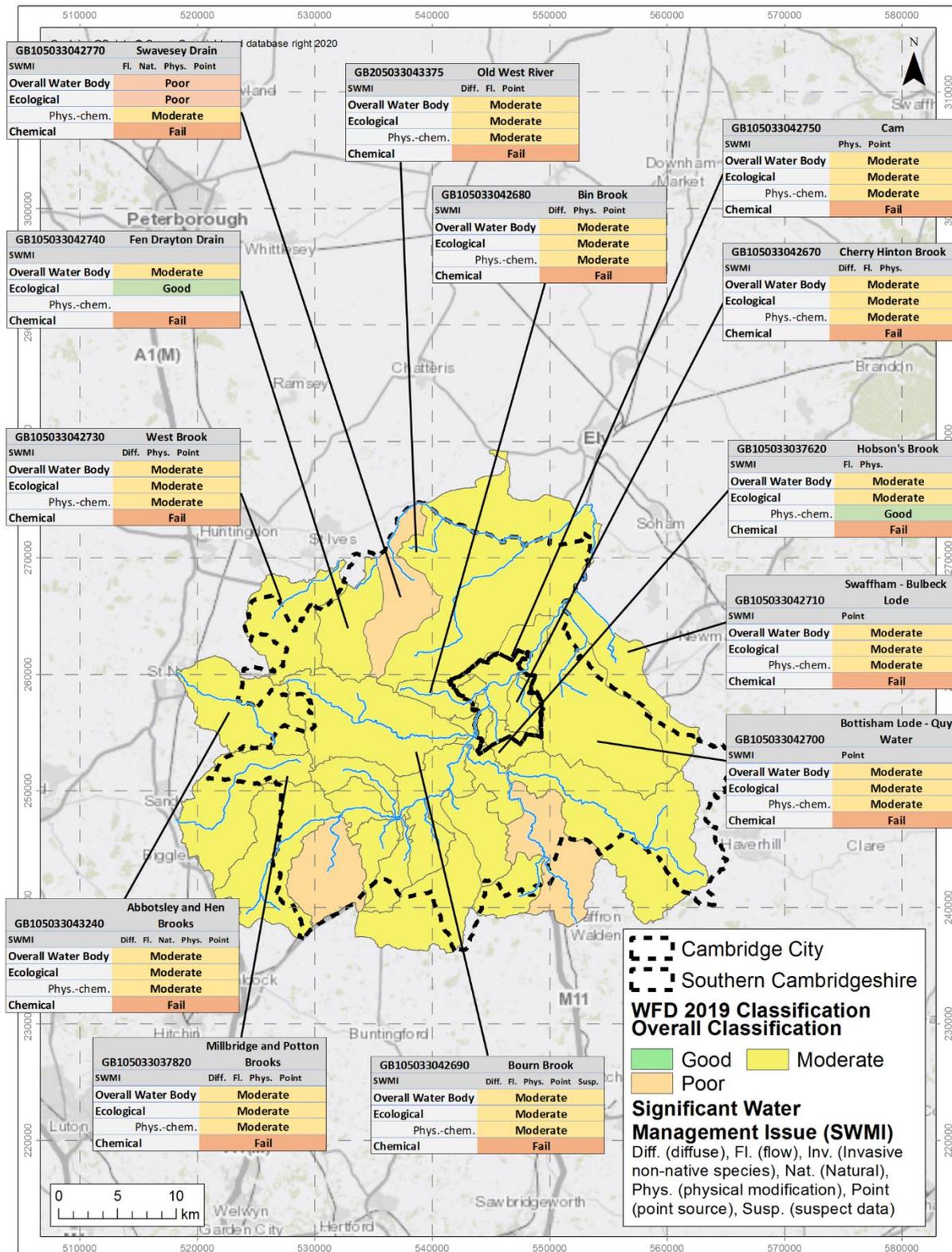
	Water Quality
	<p style="text-align: center;">pollution (agriculture and transport runoff), point source pollution (sewage discharge), and flow (groundwater abstraction).</p> <ul style="list-style-type: none"> • Natural England have identified that poor water quality is having a detrimental effect on ecology at designated sites and Priority Habitats in and downstream of the region. Low flows due to abstraction may also be affecting water quality due to dilution effects. • Source protection zones (SPZ) occur across much of the Chalk aquifer areas, with requirements for surface water runoff quality, particularly in SPZ1.
Opportunities for development	<ul style="list-style-type: none"> • Well-designed green / blue infrastructure will contribute to improved water quality and habitat both within sites and downstream, as well as providing wider benefits for people, wildlife, landscape, soils including the remnant peat resource, and mitigating the potential impacts of climate change. • Well-designed developments can also provide an opportunity for betterment to diffuse pollution, by removing land from intensive agricultural usage, if urban sources of pollution such as highways runoff are controlled and mitigated. • The new Cambridge WRC and other WRC upgrades could allow improvements to the quality of water bodies that are currently not meeting “good” standards due to point source pollution. • Other environmental enhancements linked with development, such as reduced agricultural runoff and tree planting for carbon offsetting, could contribute to improved water quality, by reducing diffuse sources of pollution.
Constraints to development	<ul style="list-style-type: none"> • Although point source pollution managed through permits should not increase, there is a risk of increase of diffuse and point source pollution from other sources increasing due to development, for example highways runoff. Positive countermeasures will be necessary to offset impacts. • Upgrades to WRC and other mitigation measures (such as additional land use change) will be necessary to maintain an overall load standstill / nutrient neutrality. The timing of upgrades will be important to avoid any deterioration in water quality as a result of development.

	Water Quality
	<ul style="list-style-type: none"> • Source protection zones will impact site drainage infrastructure, and development should be avoided in SPZ1.
Uncertainties	<ul style="list-style-type: none"> • Depending on specific site allocation, more detailed investigations of the impact of development on protected sites may be necessary. • Mitigation measures for achieving nutrient neutrality are an emerging area. It is unclear whether mitigation measures such as removing land from intensive agricultural farming to offset nutrient loading would be achievable at larger scales. Land use change to more water demanding vegetation could have a detrimental impact on groundwater recharge rates.



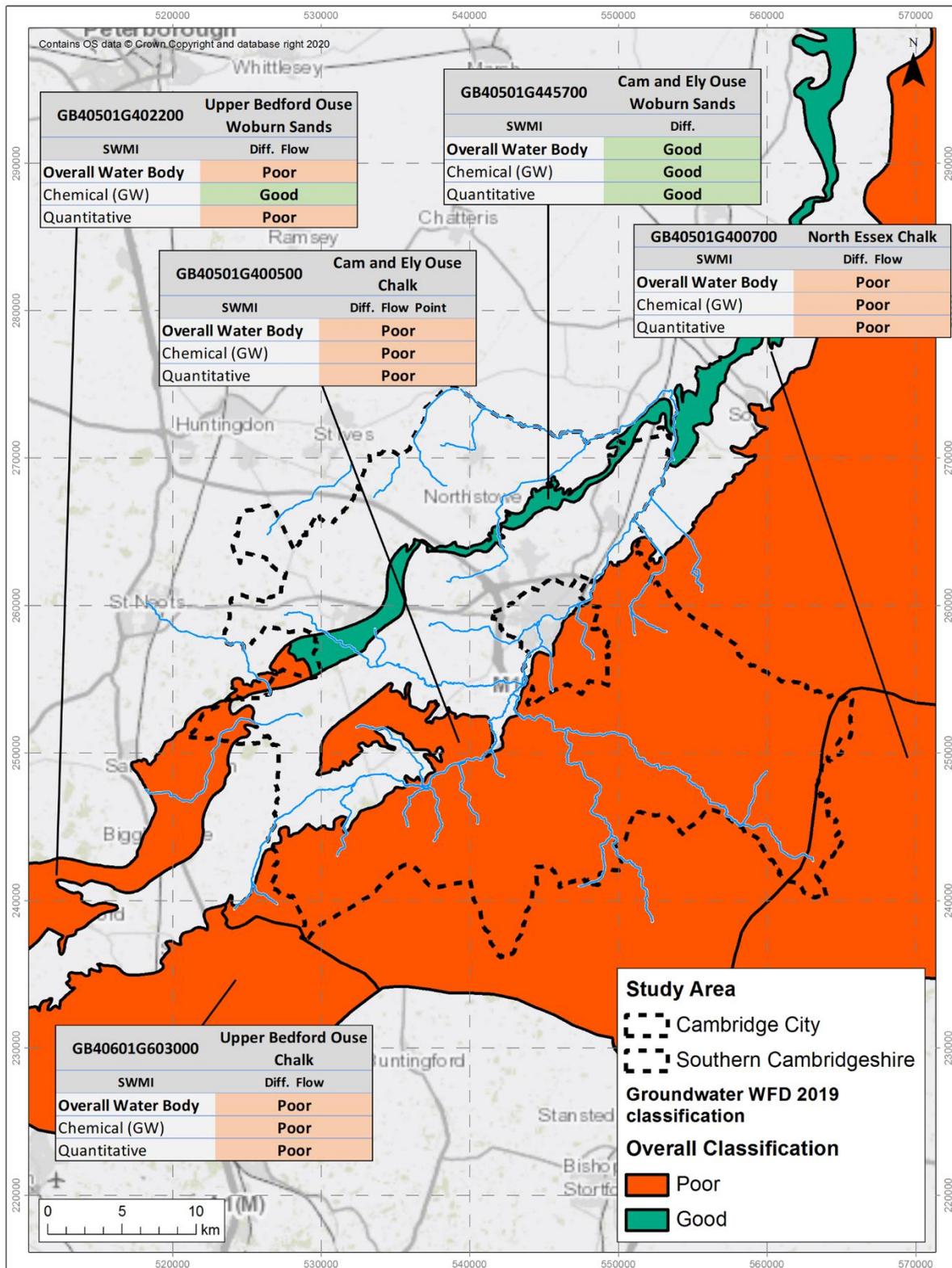
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Figure 7: Surface water bodies status and significant water management issues (southern catchments)



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Figure 8: Surface water bodies status and significant water management issues (northern catchments)



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Figure 9: Groundwater water bodies status and significant water management issues

3.6 Integrated Water Management

	Integrated Water Management
Headline findings of baseline conditions	<ul style="list-style-type: none"> • All stakeholders are supportive of a more integrated approach to water management. This holistic approach would reference the wider effects of water-related impacts on the natural environment, including biodiversity, landscape, soils and agriculture, access to green infrastructure and associated health and well-being, and mitigating the potential impacts of climate change. • There are few examples of this being undertaken at present, in part due to the historic division of responsibilities for water management between the stakeholders (e.g. water supply and drainage divided between separate utility companies). The Eddington site is one example where rainwater and surface water run-off have been captured for re-use, and the open water storage ponds form part of the open space with leisure benefits and public art.
Opportunities for development	<ul style="list-style-type: none"> • There are many opportunities for an integrated approach to water management to be adopted at the new settlement or urban extension scale, for example: <ul style="list-style-type: none"> ○ Storage and re-use of site surface water run-off for non-potable domestic uses such as toilet flushing, laundry and garden watering, to reduce potable water use and help manage surface water run-off, and combining water re-use (surface water or rainwater harvesting) with sustainable drainage systems (SuDS). ○ Re-use of treated WRC effluent to maintain low flows in watercourses, to recharge groundwater aquifers, or to irrigate agricultural land. ○ Capture and storage of fluvial flood waters, to reduce flood risk downstream, for re-use in domestic applications such as toilet flushing, laundry and garden watering, to recharge groundwater aquifers, or to irrigate agricultural land. ○ Improvements to riparian corridors, to provide natural flood management, improve water quality and recharge to groundwater. Stream restoration activities can also improve resilience to low flow conditions caused by drought or over-abstraction. ○ Planting of wet woodlands to offset increases in nutrient loads, improve water quality, slow rates of runoff and increase recharge to groundwater, as well

	Integrated Water Management
	<p>as potentially contributing towards carbon neutrality. This should be carefully planned as a change of land use to more water demanding vegetation can reduce groundwater recharge rates.</p> <ul style="list-style-type: none"> ○ Planted SuDS features, such as bioretention systems, integrated across development sites and catchments to treat surface water runoff and manage flows at all scales, and providing multiple benefits to “green” streetscapes. The SuDS features could also be integrated with water re-use systems to provide non-potable water supply. ○ Linking water management to broader sustainability and open space strategies, to have an integrated approach where water management measures can provide solutions that also support community and environmental objectives. <ul style="list-style-type: none"> ● Many of these opportunities are currently under active consideration by Water Resources East as part of their planning process and could have wider multi-functional benefits for people and wildlife beyond the water cycle.
Constraints to development	<ul style="list-style-type: none"> ● There are cost implications for development sites, and may be feasibility limitations for some schemes in smaller sites / infill locations. Although there are economies of scale available for larger sites, the principles of integrated water management can be applied at smaller sites. Different solutions may be required for different scales of site, and opportunities will need to be considered at an early stage in site planning.
Uncertainties	<ul style="list-style-type: none"> ● To be fully implemented and integrated, projects will need to be supported outside of the realm of the Local Plan, and require a wider re-think of water management at the regional scale. ● There are a number of regulatory, practical and behavioural changes that present significant uncertainty to the effectiveness of some options. ● It is currently unclear how aspirations for integrated water management schemes that are not directly linked to specific development sites could be actioned or funded through planning policy or S106 / CIL contributions. ● The effectiveness of some of these measures in addressing adverse environmental impacts will need to be demonstrated and monitored, if to be relied upon as

	Integrated Water Management
	confirmed mitigation measures rather than additional benefits. The measures and associated monitoring will need to be agreed and delivery secured before development proceeds.

4 Review of Strategic Spatial Options

4.1 Introduction

4.1.1 We have undertaken a high-level review of the proposed strategic spatial options, firstly considering the minimum, medium and maximum growth scenarios, and secondly considering the eight proposed spatial options. Our comments on constraints and opportunities have been ranked using the categories in Tables 8 and 9.

4.1.2 A preference score (based upon water management impacts only) has been assigned to allow comments to be weighted for different location combinations across the scenarios. A high score is more favourable than a low score. Constraints have been more heavily weighted towards negative scores, to reflect that significant constraints may not be capable of being negated by positive opportunities for betterment.

Colour	Description	Score (for comparison of location options)
Purple	Constraints that will be extremely difficult or not possible to overcome within the timescales of the local plan. This has not been scored to indicate it cannot be offset by opportunities or betterments in other categories.	X
Red	Significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly	-4
Amber	Some constraints or uncertainties that can be overcome which are technically and economically feasible	-2
Green	No or minor constraints or uncertainties that are easily overcome	0

Table 8: Constraints categorization and scoring

Colour	Description	Score (for comparison of location options)
Unshaded	No opportunities for enhancement / betterment to existing conditions, or those opportunities are technically challenging and/or costly	0
Pale Blue	Some opportunities for enhancement / betterment to existing conditions, which are technically and economically feasible	1
Dark Blue	Good opportunities for enhancement / betterment to existing conditions, which are readily achievable	2

Table 9: Opportunities categorization and scoring

4.2 Review of Growth Scenarios

Flood Risk

4.2.1 There are no specific comments for flood risk with regards to the differing growth scenarios. The flood risk constraints and opportunities are dependent on specific site location rather than on quantum of development. Although there are large areas at risk of flooding within Greater Cambridge, there are also large areas of low flood risk that could accommodate all growth. Following the Sequential Approach¹⁰, we have assumed that development will be directed to areas of lowest flood risk first. Flood risk therefore does not differentiate between the growth scenarios, although it remains an essential consideration for the location of development.

Wastewater Treatment and Water Quality

4.2.2 There are some existing capacity constraints at existing Water Recycling Centres, which may affect the timing of development. In particular, the relocation of Cambridge WRC may limit development within its catchment until it is complete. Therefore, the maximum scenario may be less achievable, due to timing of upgrades which may prevent the early development needed to achieve the total growth target. However, all growth scenarios are considered technically feasible for achieving load standstill, if suitable mitigation measures were implemented.

Water Resources

4.2.3 Water resources are assessed in Appendix A. The analysis has focussed on a “no additional detriment” neutral position. To prevent any increase in

¹⁰ <https://www.gov.uk/guidance/flood-risk-and-coastal-change>

abstraction and its associated detrimental environmental impacts, mitigation measures will be necessary to meet the water demand supply balance. These measures might include demand management, leakage reduction and bulk water imports. The feasibility of these measures has been assessed at a high level only in this analysis, and further analysis will be necessary at the detailed Water Cycle Strategy stage to confirm that development could be delivered sustainably. The uncertainties in the magnitude and timing of these measures has been taken into account in our conclusions.

- 4.2.4 Even without any growth, significant environmental improvements will not be achievable until major new water supply infrastructure is operational to allow comprehensive reductions in groundwater abstraction rates, which is unlikely to occur before the mid-2030s.
- 4.2.5 Our analysis has concluded that it is plausible for the minimum and medium growth scenarios to be met without further detrimental impact on the water environment, dependent on suitable interim adaptation measures and future major new water supply infrastructure. There is a higher level of uncertainty as to whether this is achievable for the medium growth scenario. However, in line with our approach of making assumptions that are conservative, technically achievable and representative of a “safe” fall-back position, we cannot safely conclude that the maximum growth scenario could be delivered without further detrimental impact on the water environment.

Conclusions

- 4.2.6 The constraints and opportunities categorisations for the growth scenarios are shown in Table 10 and Table 11, in line with the comments above. Water resources constraints are considered a potential “deal-breaker” for the maximum scenario at this stage. For the minimum and medium scenarios, we consider growth to be feasible but with constraints, some of which may be difficult to overcome, technically challenging and/or costly, particularly for the medium scenario which has a higher level of uncertainty compared to the minimum scenario.
- 4.2.7 These conclusions are dependent on assumptions regarding the linear trajectory of growth, and the allowance made for growth in non-household demand. If the rate of growth is increased for the minimum and medium scenarios before the mid-2030s, these scenarios could result in further detrimental impact on the water environment if the additional water demand cannot be met without increasing groundwater abstraction. Similarly, the allowance made for growth in non-household demand is based on existing ratios of non-household to household demand, and could be exceeded if planning permission is granted to water-intensive developments resulting in unsustainable growth.

Growth Scenario	Flood Risk	Wastewater	Water Quality	Water Resources
Minimum	No specific comments – dependent on location rather than quantum of development	Amber – growth can be accommodated in new Cambridge WRC works, but dependent on timing. May be RED constraints in other WRC catchments which lack capacity, depending on specific location.	Amber – load standstill considered technically achievable with suitable mitigation measures. More dependent on specific location than quantum of development.	Amber - growth could be accommodated with feasible adjustments to next Water Resource Management Plan to mitigate impacts.
Medium				Red growth can be accommodated if regional scale solutions are operational by mid 2030s. Interim measures will be necessary beforehand to mitigate impacts, which will need rapid planning and investment in the early parts of AMP8 cycle (2025-2030).
Maximum				Purple growth cannot be accommodated in existing water supply regime without detrimental impacts, requiring new regional scale water resource solutions that will not be available in time. Interim measures are unlikely to be able to mitigate scale of impact.

Table 10: Constraints categorization for growth scenarios

Growth Scenario	Flood Risk	Wastewater	Water Quality	Water Resources
Minimum	No specific comments – dependent on location and size of development, rather than overarching growth trajectory.			
Medium				
Maximum				

Table 11: Opportunities categorization for growth scenarios

4.3 Review of Location Options

Flood Risk

4.3.1 The flood risk constraints are dependent on specific site allocation, and therefore have not been possible to assess in detail for spatial options where specific sites are not yet defined. Nevertheless, the following generalised assessment has been made:

- Cambridge urban area: considered significantly constrained due to the extent of existing fluvial, surface water and sewer flood risk, that may make individual sites more difficult to deliver, depending on location. Mitigation of the existing flood risk is complex due to the large drainage system under multiple ownership with no single record system.
- North East Cambridge: considered minimally constrained due to small extents of fluvial and surface water flood risk, that should be easily managed on site.
- Edge of Cambridge, Outside of Green Belt: considered to have some constraints due to surface water flood risk, but should be feasible to safely manage within site with mitigation works.
- Edge of Cambridge, Green Belt: considered significantly constrained due to the extent of existing fluvial and surface water flood risk, that may make individual sites more difficult to deliver, depending on location.
- New settlements: under the expectation that these will be located on areas of low or medium flood risk (following the Sequential Test), we consider there to be some constraints due to fluvial or surface water flood risk that should be feasible to safely manage within site with mitigation works.
- Existing villages: considered significantly constrained due to the extent of existing fluvial and surface water flood risk, that may make individual sites more difficult to deliver, depending on location. Smaller sites may fall below the minimum practical threshold for controlling discharge rates. The exception is for villages sited along the A428 public transport corridor or within 5 km of Cambourne, for which we consider there to be some constraints due to fluvial or surface water flood risk that should be feasible to safely manage within site with mitigation works.

4.3.2 The flood risk opportunities have been assessed as follows:

- Cambridge urban area and North East Cambridge: good opportunities to retrofit SuDS and other flood risk reduction measures to brownfield sites, reducing risk of flooding to site and elsewhere.
- Edge of Cambridge and New Settlements: requires specific site allocations to confirm, nevertheless potentially good opportunities to use large-scale features in large sites and on-site attenuation to reduce flood risk

downstream (e.g. on Coldham's Brook, Bin Brook, Histon and Impington, and Girton wetspots on edge of Cambridge).

- Rural centres and minor rural centres: requires specific site allocations to confirm, nevertheless may be opportunities to use on-site attenuation in the larger sites to reduce flood risk downstream.
- Group and infill villages: requires specific sites to confirm, however sites unlikely to be large enough to offer significant betterment.

Wastewater Treatment

4.3.3 The wastewater treatment constraints have been assessed as follows:

- Cambridge urban area, North East Cambridge, and Edge of Cambridge: growth can be accommodated in new Cambridge WRC, but there may be some constraints due to the timing of the new works becoming operational. Interim mitigation measures or Anglian Water permit amendments may be necessary to allow development beforehand.
- Development at Cambourne and nearby villages: significant constraints due to existing capacity and treated effluent discharge constraints at Bourn and Uttons Drove WRC that would require addressing. These could be technically challenging and/or costly, particularly for Uttons Drove WRC which discharges into the volume limited Swavesey Drain catchment. However, previous scoping work for Cambourne West and Bourn Airfield sites have indicating the potential for a new pipeline to Papworth WRC, where capacity is available. Although the progress of this scheme is currently unknown, we therefore consider there to be a solution for this area that is technically and economically feasible.
- All other locations: growth can be accommodated dependent on specific location and timing, compared to any necessary mitigation works to overcome local constraints. These are considered technically feasible. More detailed analysis to be undertaken once specific locations are known.

4.3.4 There are no specific opportunities for wastewater treatment that vary with location. All WRC locations have the potential for treated effluent to be reused in other ways, for example for agricultural irrigation or groundwater recharge (if treated appropriately). However, in some locations, treated effluent comprises an important component of low flows in the receiving watercourses, and therefore diversion to other uses would need careful assessment.

Water Quality

4.3.5 All location options are considered to have some constraints depending on specific location and timings, but are technically feasible for achieving load standstill, if suitable mitigation measures were implemented to ensure no detrimental impact on point source pollution from WRC.

4.3.6 Opportunities for water quality improvements will be dependent on specific site locations. Where watercourses lie within site boundaries, improvements could be made to enhance riparian corridors within larger buffer zones, including more varied and naturalised physical properties, leading to water quality improvements and increased habitat. These opportunities are likely to be more feasible for larger sites, and therefore opportunities have been weighted towards the larger sites.

Water Resources

4.3.7 There are no known specific constraints for water resources for the different location options. It is assumed that Cambridge Water will be able to flex its abstraction and delivery of water across the supply area to avoid any local increases in abstraction above recent actual rates, and to prioritise the least damaging of its sources. This will be explored further at the detailed Water Cycle Strategy stage. Water resources constraints therefore are considered more dependent on the quantum rather than the location of the development.

4.3.8 It is assumed that all sites will include a baseline provision towards reducing water demand, such as water efficient fixtures and fittings and water butts. The economic viability and drought resilience of household scale rainwater harvesting for non-potable use (e.g. flushing toilets) is less certain than site scale installations, and therefore preference is given to larger sites for the economies of scale and resilience that can be provided. Water resources opportunities have been assessed as follows:

- Cambridge urban area, group villages and infill villages: small size of sites likely to limit opportunities for high quality water recycling systems.
- North East Cambridge, Cambridge Airport, Edge of Cambridge, New Settlements: good opportunities to implement high quality water recycling across large sites.
- Rural centres and minor rural centres: may be some opportunities to implement high quality water recycling on larger sites.
- Areas located near Cambourne: good opportunities for area to be supplied via bulk water imports, as a separate water supply zone.

Conclusions

4.3.9 The detailed constraints and opportunities categorizations for each location option are listed in Appendix B, in line with the comments above. Each spatial scenario involves a different distribution of housing between location options. This distribution was used to weight the score for each location, before combining into a total score for each spatial option. These distributions varied between the minimum, medium and maximum scenarios, and therefore separate scores were calculated for each growth trajectory. An example calculation is included in Appendix B. The combined preference scores are shown in Table 12. Please note these reflect only how the distribution of

housing between locations varies for each scenario, excluding the magnitude of growth (Table 10).

Spatial Scenario	Score and (rank) for housing distribution 2020 – 2041			Average score and (rank), all growth scenarios
	Minimum spatial pattern	Medium spatial pattern	Maximum spatial pattern	
2. Edge of Cambridge - outside the Green Belt	0.8 (1)	-0.1 (2)	0.9 (1)	0.5 (1)
4. Dispersal - new settlements	0.0 (3)	0.0 (1)	0.0 (2)	0.0 (2)
6. Public transport corridors	0.8 (1)	-2.4 (5)	-0.4 (3)	-0.6 (3)
8. Expanding a growth area around transport nodes (Cambourne)	-2.1 (6)	-2.1 (3)	-0.6 (5)	-1.6 (4)
7. Supporting a high-tech corridor by integrating homes and jobs (south of Cambridge)	-1.8 (4)	-3.7 (7)	-0.5 (4)	-2.0 (5)
3. Edge of Cambridge - Green Belt	-2.0 (5)	-2.1 (4)	-2.0 (7)	-2.0 (6)
1. Densification of existing urban areas	-2.1 (7)	-3.1 (6)	-1.4 (6)	-2.2 (7)
5. Dispersal – villages	-5.6 (8)	-5.6 (8)	-5.6 (8)	-5.6 (8)

Table 12: Combined preference score for spatial scenarios, presented in rank order. NB these scores are based only on the spatial pattern of housing as it varies between the scenarios, excluding the magnitude of growth.

4.3.10 The top two ranked spatial options have little preference between them.

These options (2. Edge of Cambridge Outside the Green Belt and 4. Dispersal to New Settlements) have known or expected low flood risk, and large sites with good opportunities for blue-green infrastructure, flood risk reduction and high-quality resilient water recycling systems.

4.3.11 Although Option 8 (Expansion at Cambourne) has good opportunities for water resources with the potential to be supplied by bulk transfer, these are potentially offset by the constraints for WRC at Bourn and Uttons Drove, which are weighted more strongly than the opportunities. While an extension of Cambourne could plausibly be routed to Papworth for wastewater treatment, options may be more limited for village sites in this option which are more heavily weighted in the medium growth scenario. Therefore, if this option were

to be selected, further work would be necessary to confirm what mitigation measures are technically feasible at these sites, or what alternative provision could be developed.

4.3.12 The lowest two ranked spatial options are Option 1 (Densification of existing urban areas), and Option 5 (Dispersal to villages). These options have the highest existing flood risk, and the smaller expected size of developments is likely to present fewer transformational opportunities for blue-green infrastructure, flood risk reduction and high-quality resilient water recycling systems.

4.3.13 In general, the medium growth scenario scores lowest out of the three growth trajectories (excluding the score of the growth trajectory itself). This is because the scenario involves more “spill over” of development into less preferable locations. In some spatial scenarios, the maximum growth scenario is the most preferable (purely on locational analysis), because development is concentrated into fewer sites than in the minimum and medium scenarios.

4.3.14 This analysis has considered the distribution of housing only. No assessment has been made of the proposed locations for non-residential development. The majority of these sites were allocated in the previous Local Plan, and it is assumed that any further sites allocated in this plan will be embedded within or near to the proposed residential sites to balance any new settlements.

5 Conclusions and Recommendations

5.1.1 Our analysis has indicated that:

- None of the growth scenarios offer the opportunity to offset existing detrimental impacts on the water environment due to over-abstraction of the Chalk aquifer.
- There are potential “deal-breaker” constraints to the high growth scenario, due to water resource limitations. The timing of planning, constructing and commissioning new water supply infrastructure is not currently compatible with the Local Plan timescale for the high growth scenario.
- Although there are constraints to development in the minimum and medium growth scenarios, for water resources, wastewater treatment and water quality, these could plausibly be addressed with appropriate mitigation measures in compatible timescales to result in no additional detrimental environmental impacts. Therefore, both these scenarios are considered technically achievable for a neutral impact, although there remain uncertainties and risks with mitigation measures that will require further analysis. All stakeholders support the adoption of ambitious water efficiency targets for new development to reduce additional demand.
- The minimum growth scenario would be the most sustainable of the three trajectories, in terms of preventing any further detrimental impacts on the water environment. This scenario would allow the greatest proportion of any additional water made available through further mitigation measures such as demand management and leakage reduction to be used for environmental benefit. In the medium scenario, some of this water would be required for potable supplies and more aggressive mitigation measures would therefore be necessary to provide the same level of environmental benefit as the minimum scenario.
- The most preferable spatial options are either Option 2 (Edge of Cambridge Outside Green Belt) or Option 4 (Dispersal to New Settlements). These options have known or expected low flood risk, and large sites with good opportunities for blue-green infrastructure, flood risk reduction and high-quality resilient water recycling systems.
- The least preferable spatial option is Option 5 (Dispersal to Villages). This option has the highest existing flood risk, and the smaller expected size of developments is likely to present fewer transformational opportunities for blue-green infrastructure, flood risk reduction and high-quality resilient water recycling systems.

5.1.2 The current National Planning Policy Framework states that policies should be reviewed at least once every 5 years and updated as necessary. As there are uncertainties and risks regarding the impact of potential mitigation measures for growth, we recommend the choice of growth scenario is reviewed following

the outcomes of ongoing work by Water Resources East, Cambridge Water and Anglian Water, and the Environment Agency.

- 5.1.3 We recommend that growth is concentrated in new settlements or urban extensions that avoid high flood risk and have high standards for the design of flood risk management, water usage and re-use, and blue-green infrastructure. We have found that in some scenarios, the maximum growth trajectory is most preferable for choice of location alone, due to development being concentrated in fewer sites. This concentration of development is dependent on faster site delivery rates being achieved than at present. Therefore, we recommend that options for achieving this faster build-out rate applied to the minimum or medium growth trajectories are explored.
- 5.1.4 These conclusions are dependent on assumptions regarding the linear trajectory of growth, and the allowance made for growth in non-household demand. If the rate of growth is increased for the minimum and medium scenarios before the mid-2030s, these scenarios could result in further detrimental impact on the water environment if the additional water demand cannot be met without increasing groundwater abstraction. Similarly, the allowance made for growth in non-household demand is based on existing ratios of non-household to household demand, and could be exceeded if planning permission is granted to water-intensive developments, resulting in unsustainable growth.
- 5.1.5 The Outline Water Cycle Strategy, to be completed late 2020, will include scoping of the work required at the Detailed stage to support the Local Plan including assessing growth levels, spatial approach and policy options, and where possible reducing uncertainties and addressing assumptions regarding growth trajectories and non-household demand.

Appendix A Water Demand and Supply Projections

A.1 Water Supply

A.1.1 The available water supply in the Cambridge Water Resource Zone is shown in Figure 10, based on the Cambridge Water Resource Management Plan (2019 WRMP). This indicates:

- A deployable output of 92 to 95 MI/d, which increases due to new sources being brought online in 2024.
- “Water available for use”, calculated as the deployable output minus water losses and outage allowance, and taking in account imports and exports of water, of 86 to 90 MI/d.
- “Water available minus target headroom”, calculated as the water available for use minus the target headroom which includes a required climate change component, of 84 to 87 MI/d.

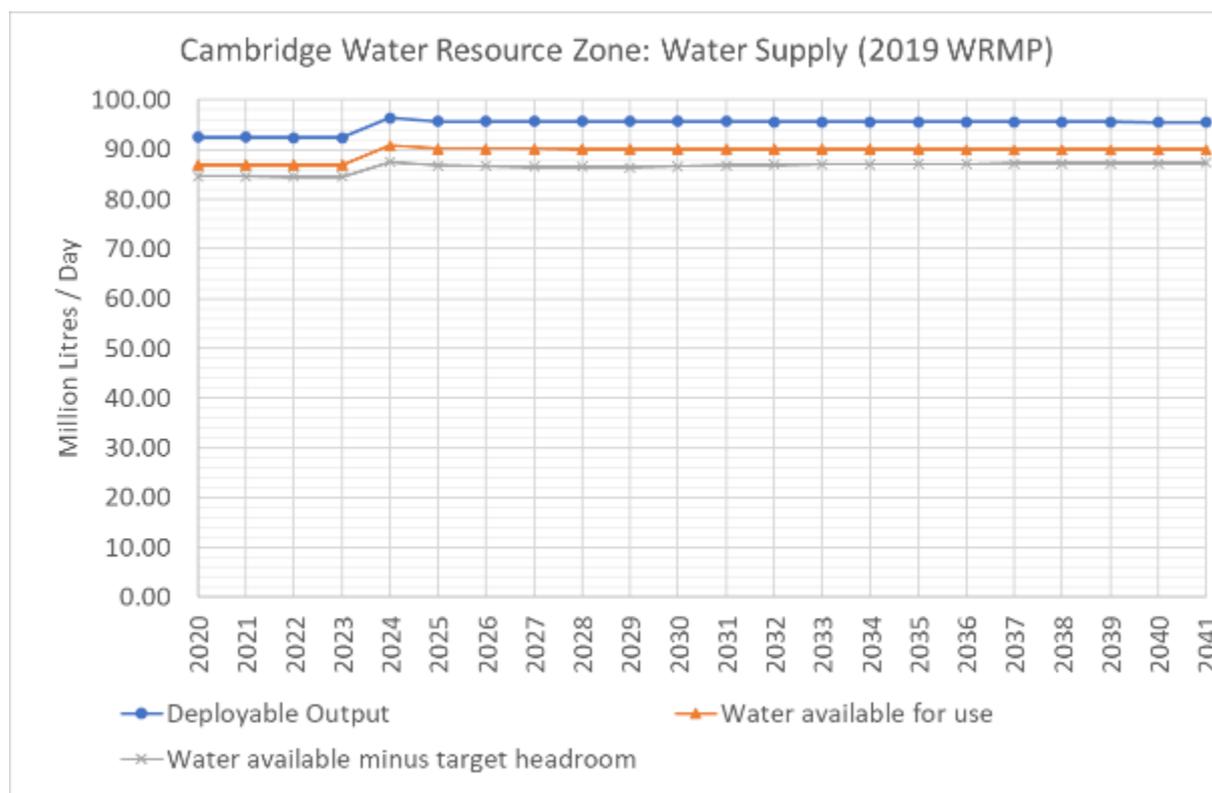


Figure 10: Water supply trajectory for Cambridge Water Resource Zone (2019 WRMP)

A.1.2 All of the water supply is sourced from groundwater abstraction. We note that all stakeholders agree that the groundwater aquifer is currently over-abstracted and causing environmental detriment. It is highly likely that future caps on abstraction will be enforced by the Environment Agency, with the

shortfall in water supply to be provided by other sources. However, it is currently unclear what the magnitude or timing of those caps might be.

A.1.3 The calculation of the water supply and its sustainability will be reviewed in more detail in the Outline Water Cycle Strategy.

A.2 Water Demand

A.2.1 The Cambridge Water 2019 WRMP sets out the future population for which water demand has been planned, based on the future growth projections at the time. This is compared to the Greater Cambridge strategic option growth trajectories in Figure 11 (assumed linear as directed by Greater Cambridge Shared Planning). The WRMP population forecasts exceed the proposed growth trajectories in the first half of the 2020s, assuming a higher rate of growth from existing allocations.

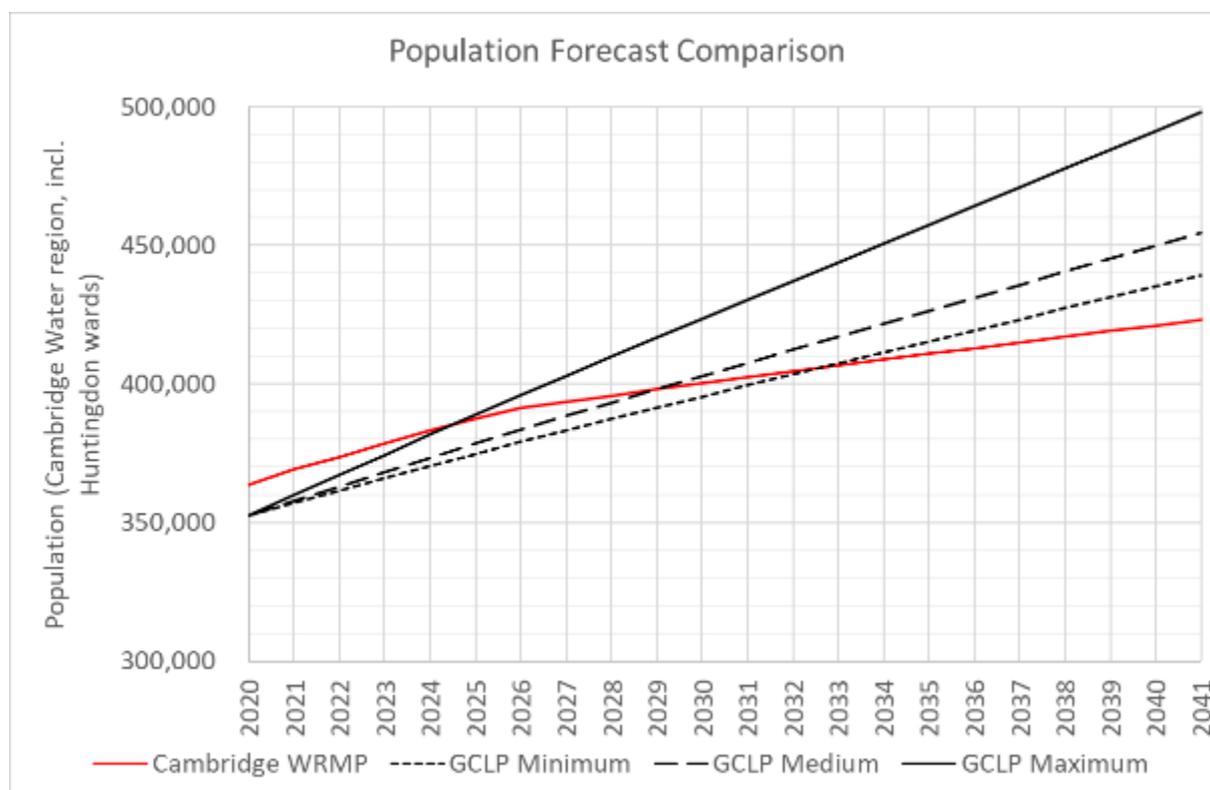


Figure 11: Comparison between assumed population growth in Cambridge WRMP and Local Plan growth trajectory options

A.2.2 The Cambridge WRMP water demand trajectory is shown in Figure 12. Total demand remains stationary at approximately 82 MI/d. Although household demand increases from 48 to 52 MI/d, this increase is offset by ambitious reductions in leakage and other uses (decreasing from 12.5 MI/d to 8.5 MI/d). The household demand is also reduced by demand management measures. There is assumed to be no increase in non-household usage, which stays constant at approximately 42% of household use proportionally.

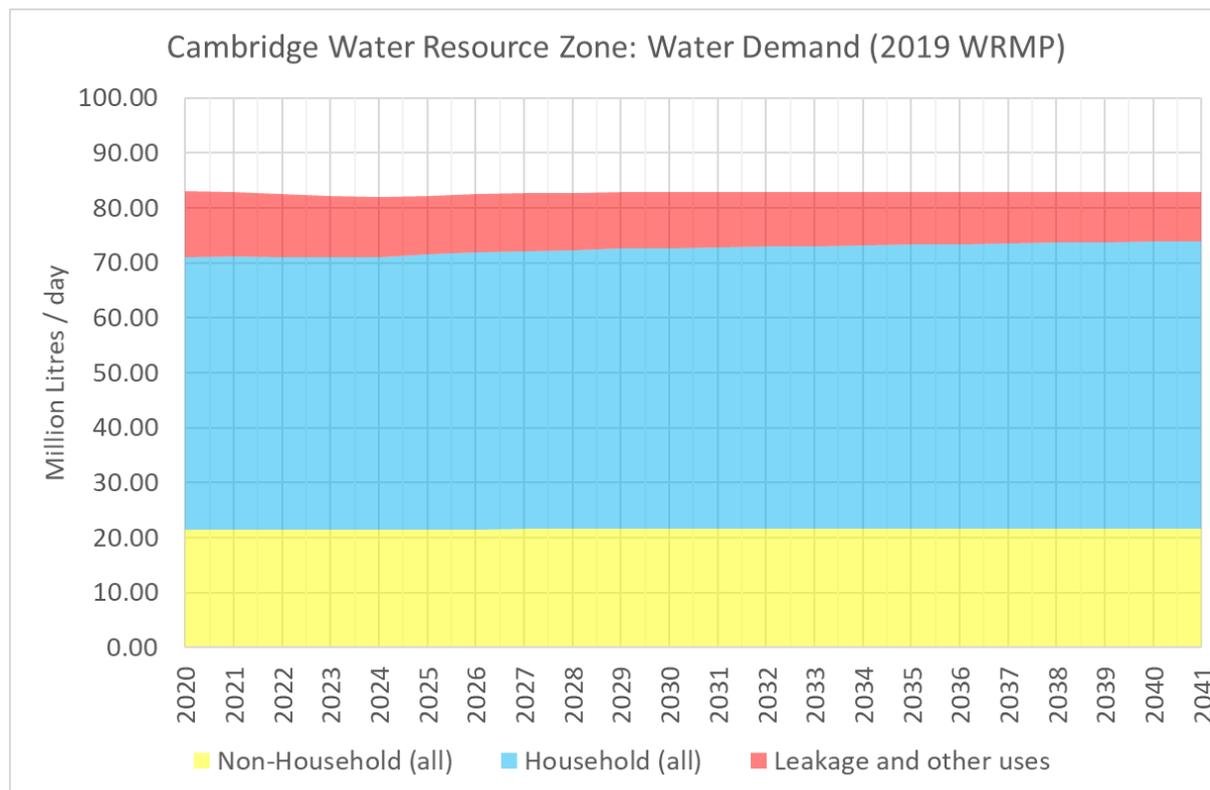


Figure 12: Future water demand (Cambridge WRMP projections)

A.2.3 We have calculated additional water demand for each of the growth trajectories as follows:

- Where the projected population is less than the Cambridge WRMP population projection, no additional demand was assumed.
- Where the projected population is greater than the Cambridge WRMP population projection, the additional population has been used to estimate additional demand, for a range of water consumption scenarios:
 - a. Using the standard Building Regulations consumption requirement for new development of 125 l/p/d
 - b. Using the optional Building Regulations consumption requirement for new development of 110 l/p/d
 - c. Assuming a reduced consumption of 80 l/p/d is achievable (withdrawn Code for Sustainable Homes Level 5 / 6, and design standard at Eddington).

A.2.4 In addition, non-household demand was assumed to increase at a rate of 40% of the additional household demand (current rate, see paragraph A.2.2) for scenario (a) above, and applied at the same rate to scenarios (b) and (c) above. Although this allowance is considered conservative by Cambridge Water, there are significant uncertainties associated with non-household demand, particularly for any new hi-tech industry that could be water intensive.

A.2.5 The resulting additional demand by 2041 is summarised in Figure 13 and Table 13. Consumption management to 80 l/p/d results in a reduced additional water demand of up to 3 Ml/d in the maximum growth scenario, which is a significant betterment. All stakeholders support the adoption of ambitious water efficiency targets for new development, regardless of growth scenario.

Growth scenario	Non-Household	Household			Total (household + non-household)		
		125 l/p/d	110 l/p/d	80 l/p/d	125 l/p/d	110 l/p/d	80 l/p/d
Minimum	0.93	2.25	1.98	1.44	3.18	2.91	2.37
Medium	1.73	4.18	3.68	2.68	5.91	5.41	4.41
Maximum	3.99	9.62	8.47	6.16	13.61	12.45	10.14

Table 13: Additional water demand projections (Ml/d) in 2041, for non-household and household demands (different consumption scenarios)

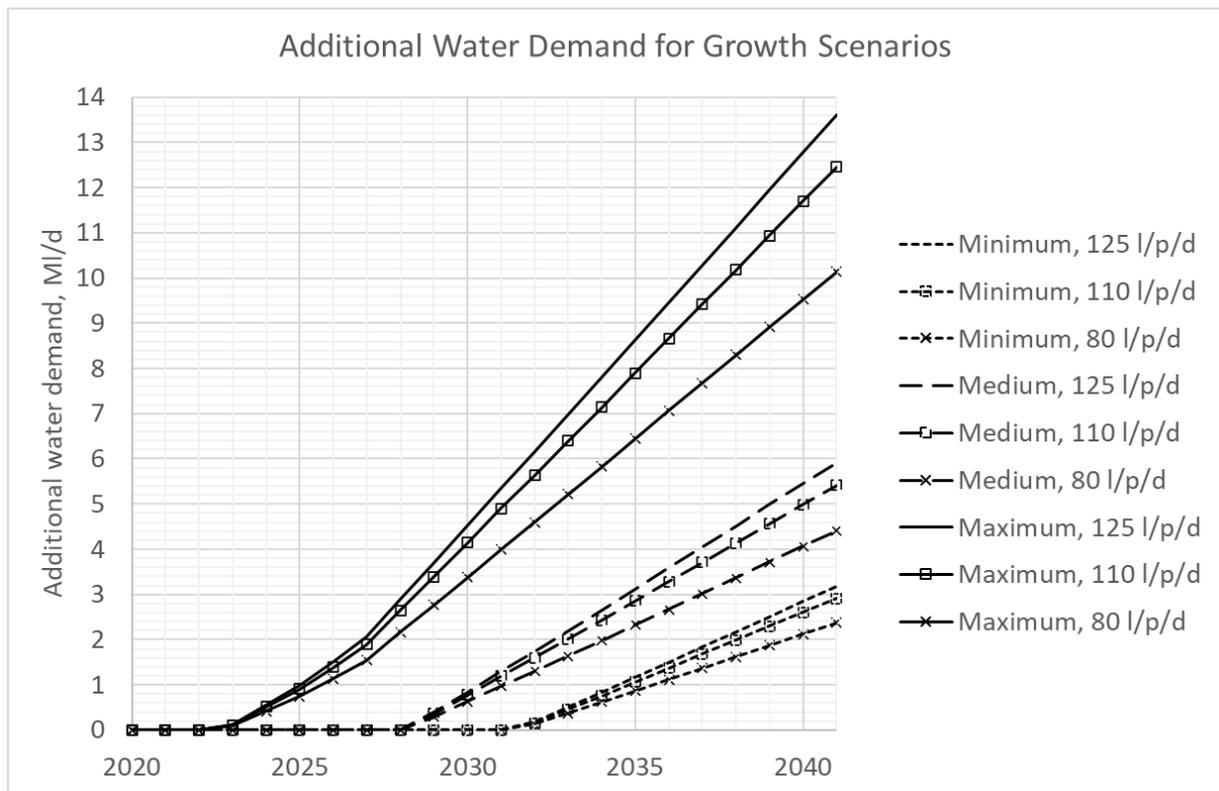


Figure 13: Additional water demand projects for growth scenarios, different consumption scenarios

A.3 Supply Demand Balance

A.3.1 The demand trajectories are compared to the water supply (minus target headroom) in Figure 14 to Figure 16. These show:

- In the minimum growth scenario, water demand begins to exceed planned water demand in the early 2030s. Total water demand does not exceed the water supply (minus target headroom) in the plan duration (to 2041).
- In the medium growth scenario, water demand begins to exceed planned water demand in the late 2020s. Total water demand exceeds water supply (minus target headroom) in the late 2030s, depending on demand management scenario. Reducing demand from 120 l/p/d to 80 l/p/d gives an extra 3 years before water supply is exceeded.
- In the maximum growth scenario, water demand begins to exceed planned water demand in the mid-2020s. Total demand exceeds water supply (minus target headroom) in the late 2020s, depending on demand management scenario. Reducing demand from 120 l/p/d to 80 l/p/d gives an extra 2 years before water supply is exceeded.

A.3.2 The supply-demand balance will be reviewed for the next WRMP (to be published in 2023) and the available headroom may be reduced, particularly where significant non-household or commercial development is proposed and gains planning approval. The Environment Agency would like to see existing headroom prioritised for environmental betterment. As data is not available for these potential changes to supply and demand, it has not been possible to include them in this analysis. However, they indicate that the current supply-demand headroom should not be assumed to be available for new development.

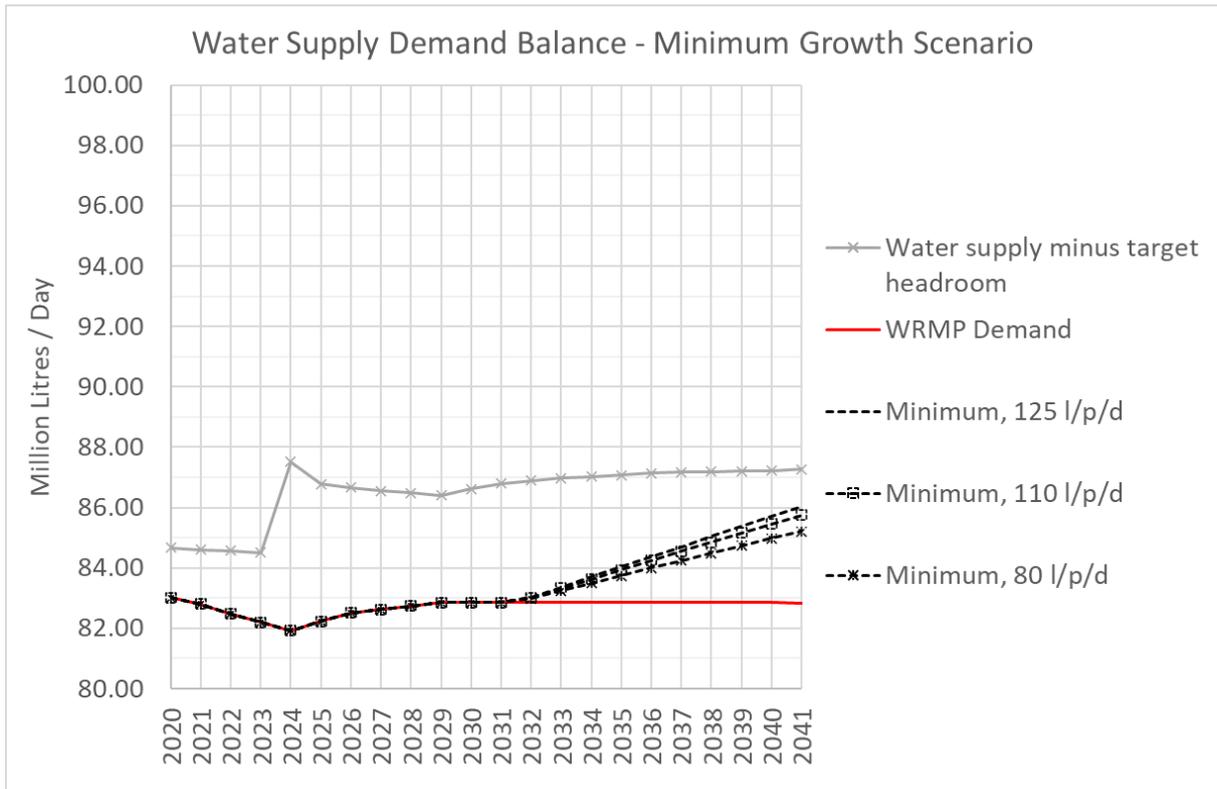


Figure 14: Water supply demand balance, minimum growth scenario

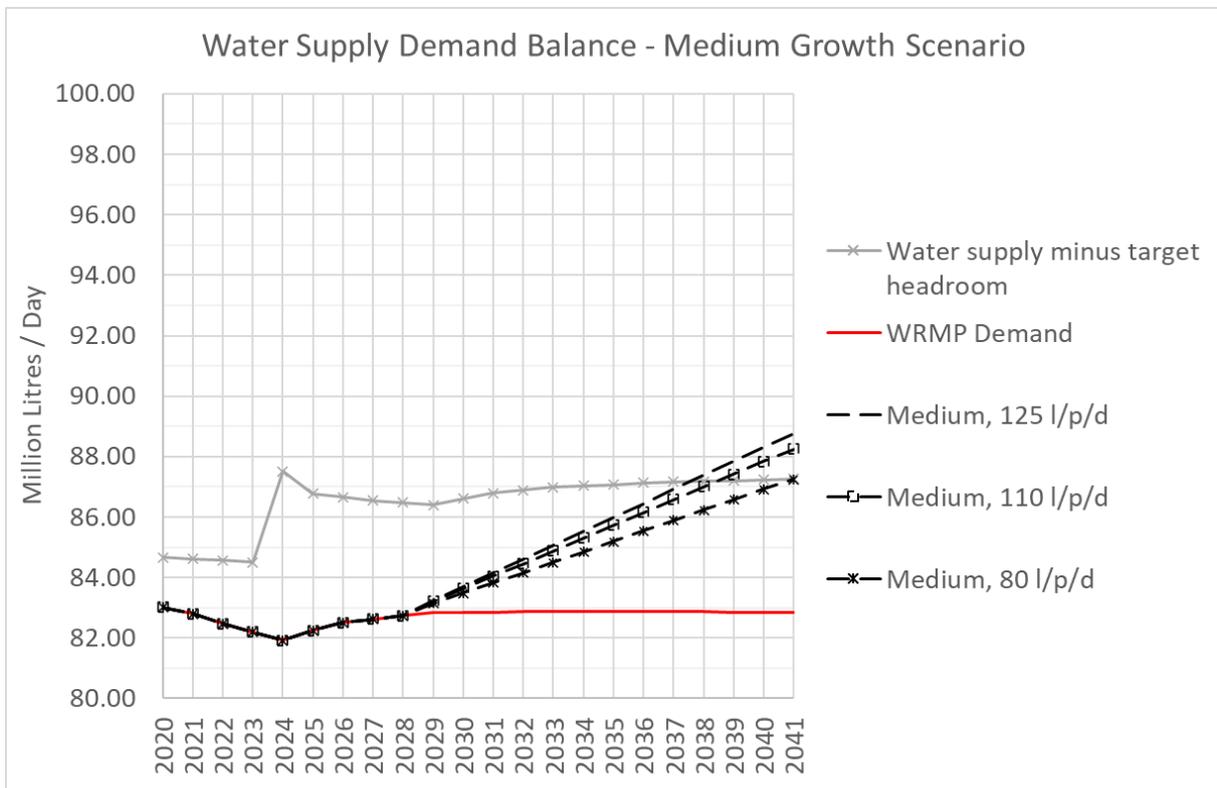


Figure 15: Water supply demand balance, medium growth scenario

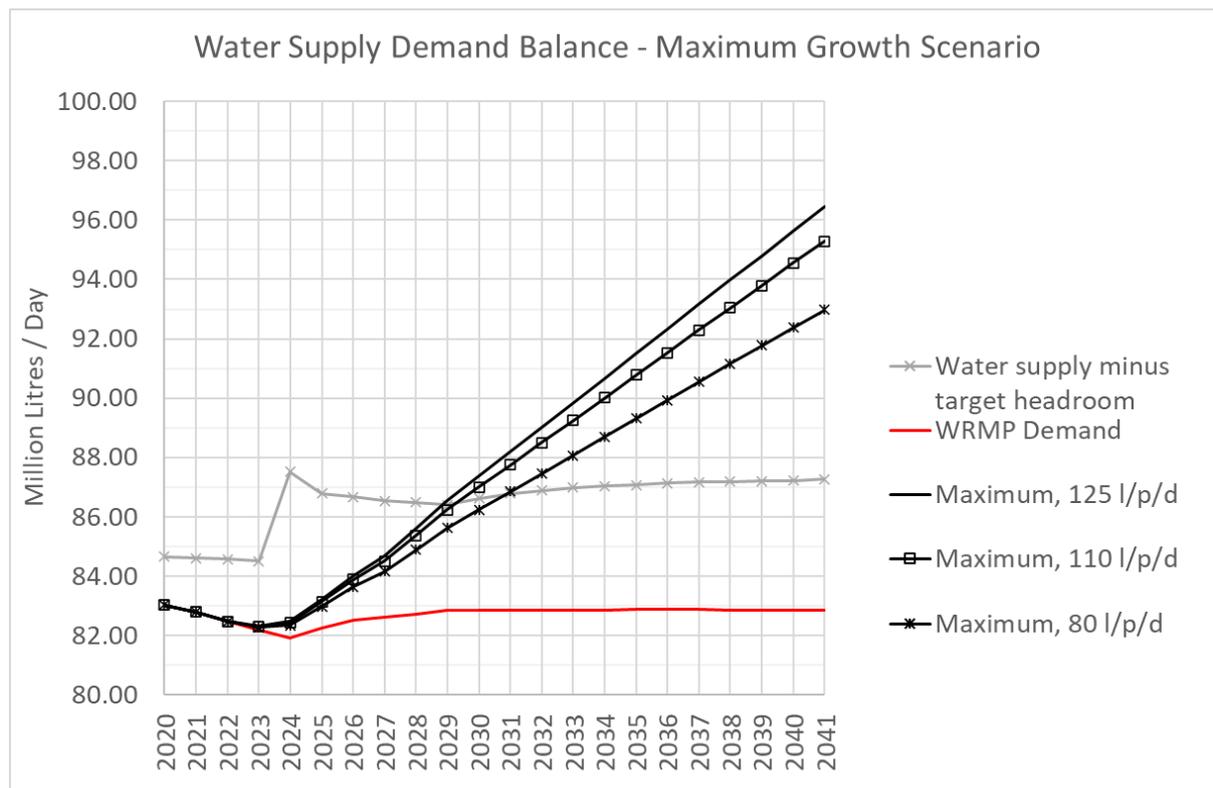


Figure 16: Water supply demand balance, maximum growth scenario

A.4 Opportunities for New Water Sources

A.4.1 The supply demand balances in the previous section do not take into account any further reduction in abstraction rates to meet environmental targets. All stakeholders agree that the groundwater aquifer is currently over-abstacted, causing environmental detriment. It is highly likely that future caps on abstraction will be enforced by the Environment Agency, with the shortfall in water supply to be provided by other sources. However, the magnitude and timing of future abstraction reductions is unclear.

A.4.2 Water Resources East (WRE) are responsible for regional scale water supply planning. Discussions with WRE have indicated:

- Major new water supply infrastructure is being planned for the Anglian Region, including:
 - A new water supply reservoir in Lincolnshire, which, if funded, would be operational from 2035.
 - A new water supply reservoir in the Fenland / Ouse Washes area, which, if funded, could be operational from 2040 (or earlier depending on the design), and will be geographically closer to the Greater Cambridge area.

These new reservoirs can be designed to include allowance for significant reductions in abstraction rates and for increased demand due to additional growth in the Greater Cambridge area. Currently, Cambridge Water does not have an allocation in the Lincolnshire reservoir project. However, WRE, Cambridge Water and Anglian Water are currently in discussion about new resource schemes and inter-company transfers. The potential demand for water in Greater Cambridge will form part of WRE's regional modelling to inform the strategy being developed.

- Interim measures are being considered to reduce abstraction and increase supply from other sources before 2035, including:
 - Further water efficiency, demand management and aggressive leakage management measures. In particular, all stakeholders support aspirations for ambitious water efficiency targets for new developments, seeking to go beyond the Building Regulations optional requirement of 110 l/p/d. The feasibility of this will be explored further in the Outline and Detailed Water Cycle Strategy reports.
 - Prioritisation of abstraction from the Chalk aquifer for public water supply, through licence trading. Other existing abstractors (e.g. agricultural irrigation) would be supplied instead through new on-farm reservoirs and potentially treated effluent.
 - Reconnection of modified streams to their floodplains, and capture and storage of higher winter flows, leading to improved river flow and increased groundwater recharge through land use management schemes (e.g. ELMS pilot project in Granta / Bourn catchment).
 - Considering bulk water transfers within the region. Water quality and chemistry concerns mean that it is not practical to transfer mix water sources within the existing network. However, it is plausible that discrete settlements near to the Cambridge Water boundary (e.g. Cambourne area) could be separated from the existing network and supplied by bulk imports. Both Anglian Water and Affinity Water currently have no capacity for bulk water transfers in their current WRMPs, and further work would be needed by WRE to broker transfer agreements for the AMP8 cycle (2025 – 2030). For example, Anglian Water's new Strategic Pipeline and Grid will bring water from North Lincolnshire to Suffolk and beyond, passing near to the Cambridge Water region by 2025.

Following discussions with WRE, it is plausible that these measures combined could allow in the order of 5 MI/d additional water supply, or potentially higher. However, there is a high uncertainty due to the distributed and diffuse nature of the measures, which are difficult to quantify at this stage (e.g. impacts of land use management changes during drought periods). Therefore, these measures are unlikely to allow significant reductions in abstraction rates or allow significant additional growth.

A.4.3 WRE are currently undertaking work to agree the environmental destination for the region (i.e. the volume of water which will need to be retained in the environment and not abstracted), and the environmental ambitions for the sustainable abstraction of water, the timescales over which changes need to occur, and the regional supply of water including growth. This work will be published in Summer 2021 and can include allowance for the Greater Cambridge preferred growth trajectory, once known.

A.5 Conclusions

A.5.1 All stakeholders agree that growth in the Greater Cambridge area should not be reliant upon increased abstraction or reductions to existing available headroom. At present there is no growth scenario that will mitigate or reduce existing detrimental impacts on the environment. To deliver a neutral position, we require development to have no additional detrimental impact on the environment.

A.5.2 The minimum growth scenario begins to exceed current planned water demand in the early 2030s. This allows a 10-year period in which interim adaptation measures can be implemented, to prevent the existing headroom being reduced due to growth. Although this timescale is ambitious for the water industry, it is not unachievable. The minimum growth scenario also does not exceed current supply projections. It is therefore considered plausible that this growth scenario can be met without further detrimental impact on the water environment.

A.5.3 The medium growth scenario begins to exceed current planned water demand in the late 2020s. This allows a 5 to 10-year period in which interim adaptation measures can be implemented, to prevent the existing headroom being reduced due to growth. The medium growth scenario exceeds current supply in the late 2030s, however by then, the new Lincolnshire water supply reservoir is expected to be operational. It is therefore plausible that this growth scenario can be met without further detrimental impact on the water environment. However, it may require more aggressive interim adaptation measures, such as bulk water imports to supply discrete settlements. Cambridge Water currently do not have an allocation on the new Lincolnshire reservoir, and this would require urgent agreement. The required infrastructure and mitigation measures would need to be implemented during the AMP8 planning cycle (2025 – 2030).

A.5.4 The maximum growth scenario begins to exceed current planned water demand in the mid-2020s, and exceeds current supply in the late 2020s. This scenario would require rapid and significant interim adaptation measures to provide water without increasing abstraction rates. It would not be possible to construct new bulk transfer infrastructure during the current AMP7 planning cycle (2020 – 2025), and therefore it may not be possible to prevent the existing headroom being reduced due to growth, dependent on the early implementation and success of other measures (e.g. licence trading and land use management). These would need to begin to be implemented before the conclusions of the WRE programme of work. Rapid infrastructure planning

and construction would be necessary during the early stages of AMP8 to allow significant bulk water imports of up to 10 MI/d before the new Lincolnshire water supply reservoir is operational in 2035. Therefore, at this stage we **cannot safely conclude** that it would be plausible for this growth scenario to be met without further detrimental impact on the water environment.

- A.5.5 These conclusions are based on the assumption of linear growth trajectories. For all growth scenarios, it is recommended that the growth trajectory is delayed or skewed towards the later years of the plan (mid 2030s onwards). The later growth will have more opportunities to reduce water demand and build new supply sources and transfer infrastructure. Conversely, if growth rates are increased before the mid-2030s, these conclusions will be invalidated and there is a risk that development in the minimum and medium scenarios could cause further detrimental impact on the water environment.
- A.5.6 These conclusions also assume that non-household growth in water demand will remain in current proportion to household growth. Cambridge Water have indicated that this assumption is reasonable and conservative, however it will be invalidated if water-intensive industrial developments are granted planning permission. Growth in non-household demand will be explored further at the detailed Water Cycle Strategy stage.

Appendix B Location Opportunities and Constraints Categorisation and Scoring

Broad supply location	Flood Risk	Wastewater	Water Quality	Water Resources	Total Constraints Score
Cambridge urban area	Red existing fluvial flood and surface water flood risk may make individual sites difficult to deliver, depending on location.	Amber – growth can be accommodated in new Cambridge WRC works, but dependent on timing.	Amber – load standstill likely to be achievable with some mitigation measures at new WRC works. Interim mitigation may be necessary before new works is operational.	No specific comments. Water resources dependent on quantum rather than location of development.	-8
North East Cambridge	Green - minimal flood risk from fluvial or surface water sources, that should be easily managed on site.				-4
Cambridge Airport (safeguarded land)	Amber - some surface water flood risk, but should be feasible to safely manage within development.				-6
Green Belt Fringe	Red existing fluvial flood and surface water flood risk may make individual sites difficult to deliver, depending on location.				-8
New settlements on public transport corridors	Amber - expected that new settlements will be located on areas of low or medium flood risk, where it is feasible to safely manage risk within development.	Amber – growth can be accommodated dependent on specific location and timing. May be RED constraints in specific WRC catchments which lack capacity.	Amber - load standstill likely to be achievable, depending on mitigation measures at relevant WRC - may be RED constraints in specific locations.		-6
New settlements on road network					-6
Cambourne Extension	Amber - some surface water flood risk, but should be feasible to safely manage within development.	Amber - although Bourn and Uttons Drove WRC have capacity limitations, Bourn Airfield and Cambourne West sites propose a new piped link to Papworth where growth could feasibly be accommodated.			-6
Rural centres	Red existing fluvial flood and surface water flood risk may make individual sites difficult to deliver, depending on location.	Amber – growth can be accommodated dependent on specific location and timing. May be RED constraints in specific WRC catchments which lack capacity.			-8
Minor rural centres					-8
Group villages					-8
Infill villages				-8	
Villages sited along existing or proposed public transport corridors				-8	

Broad supply location	Flood Risk	Wastewater	Water Quality	Water Resources	Total Constraints Score
Villages in Southern Cluster core					-8
Villages sited along the A428 public transport corridor	Amber - some surface water flood risk, but should be feasible to safely manage within development. Dependent on specific site location.	Red both Bourn and Uttons Drove WRC have capacity limitations that would require addressing. More difficult to divert smaller sites in existing villages to Papworth (the proposed solution for Bourn Airfield and Cambourne West)			-8
Minor Rural Centre/Group villages sited within 5km of Cambourne					-8

Table 14: Constraints categorization and score for each location option

Broad supply location	Flood Risk ¹¹	Wastewater	Water Quality	Water Resources	Total Opportunities Score	Combined Constraints and Opportunities Score	
Cambridge urban area	Dark Blue good opportunities to retrofit SuDS and other flood risk reduction measures to brownfield sites, reducing risk of flooding to site and elsewhere.	No specific opportunities.	Unshaded - small size of sites likely to limit opportunities.	Unshaded - small size of sites likely to limit scale and affordability of opportunities for water recycling, although some options will still be available.	2	-6	
North East Cambridge					6	2	
Cambridge Airport (safeguarded land)	Dark Blue good opportunities to use large scale on site attenuation to reduce flood risk downstream on Coldham's Brook, and offer significant betterment.					6	0
Green Belt Fringe	Dark Blue requires specific site allocations to confirm, however good opportunities to use large scale features in larger sites to reduce flood risk downstream (e.g. Bin Brook, Histon & Impington, and Girton known wetspot locations), and offer significant betterment.			Dark blue good opportunities for blue green infrastructure	Dark Blue good opportunities to implement water recycling across large site.	6	-2
New settlements on public transport corridors	Dark Blue good opportunities to use large scale features in new settlements to reduce flood risk downstream and offer significant betterment. Requires specific site allocations to confirm.					6	0
New settlements on road network						6	0
Cambourne Extension						5	-1
Rural centres	Pale Blue - requires specific site allocations to confirm. However, opportunities to use on-site attenuation in new settlements to reduce flood risk downstream, and offer some betterment depending on scale.			Pale blue - some opportunities dependent on site size and feasibility.	Pale Blue – dependent on site size and feasibility, some opportunities for water recycling may not be feasible or affordable.	3	-5
Minor rural centres						3	-5
Group villages					Unshaded - small size of sites likely to limit scale and affordability of opportunities for water recycling, although some options will still be available.	0	-8
Infill villages	Unshaded - requires specific site allocations to confirm. However, sites unlikely to be large enough to offer significant betterment.			Unshaded - small size of sites likely to limit opportunities.		0	-8
Villages sited along existing or proposed public transport corridors	Pale Blue - requires specific site allocations to confirm. However, opportunities to use on-site attenuation in larger sites to reduce flood risk downstream and offer some betterment depending on scale.			Pale blue - some opportunities dependent on site size and feasibility.	Pale Blue – dependent on site size and feasibility, some opportunities for water recycling may not be feasible or affordable.	3	-5

¹¹ Multi-functional SuDS to manage site run-off would be expected to be provided on all sites, irrespective of scale. These comments focus on opportunities for on-site schemes to provide more significant betterment to flood risk downstream.

Broad supply location	Flood Risk ¹¹	Wastewater	Water Quality	Water Resources	Total Opportunities Score	Combined Constraints and Opportunities Score
Villages in Southern Cluster core					3	-5
Villages sited along the A428 public transport corridor				Dark blue potential for areas around Cambourne to be supplied via bulk water imports.	4	-4
Minor Rural Centre/Group villages sited within 5km of Cambourne					4	-4

Table 15: Opportunities categorization and score, and combined constraints and opportunities score, for each location option.

Example scoring calculation for Option 1: Densification of Urban Areas

The percent of houses in each location per scenario (minimum, medium and maximum) is multiplied by the location score (combined constraints and opportunities score). The weighted scores are summed to give a total score per scenario (minimum, medium and maximum). The number of houses in each location is as defined in the “Greater Cambridge Local Plan: strategic spatial options for testing – methodology” document (GCSPS, 2020), and reflects high-level assumptions made at this early stage to allow comparison of spatial options. The score therefore reflects the comparative distribution of houses between locations in each spatial option.

Location	Number of Houses in Each Location			Percentage of Houses in Each Location			Location Score	Location score multiplied by percentage of houses in each location		
	Min	Med	Max	Min	Med	Max		Min	Med	Max
Cambridge urban area	2000	5600	6800	51%	57%	38%	-6	-3.08	-3.43	-2.31
North East Cambridge	1900	1900	8000	49%	19%	45%	2	0.97	0.39	0.90
Cambridge Airport (safeguarded land)		1900	2900	0%	19%	16%	0	0.00	0.00	0.00
Green Belt Fringe		400		0%	4%	0%	-2	0.00	-0.08	0.00
New settlements on public transport corridors				0%	0%	0%	0	0.00	0.00	0.00
New settlements on road network				0%	0%	0%	0	0.00	0.00	0.00
Cambourne Extension				0%	0%	0%	-1	0.00	0.00	0.00
Rural centres				0%	0%	0%	-5	0.00	0.00	0.00
Minor rural centres				0%	0%	0%	-5	0.00	0.00	0.00
Group villages				0%	0%	0%	-8	0.00	0.00	0.00
Infill villages				0%	0%	0%	-8	0.00	0.00	0.00
Villages sited along existing or proposed public transport corridors				0%	0%	0%	-5	0.00	0.00	0.00
Villages in Southern Cluster core				0%	0%	0%	-5	0.00	0.00	0.00
Villages sited along the A428 public transport corridor				0%	0%	0%	-4	0.00	0.00	0.00
Minor Rural Centre/Group villages sited within 5km of Cambourne				0%	0%	0%	-4	0.00	0.00	0.00
Total	3900	9800	17700	100%	100%	100%	N/A	-2.10	-3.12	-1.40

Appendix C Independent Reviewer Report

- C.1.1 Due to the level of concern regarding water resources and the impact that abstraction may already be having on the environment, GCSPS required the Integrated Water Management Study to include an independent review of water resources aspects of the study, by a nationally recognised expert in this field.
- C.1.2 Dr Geoff Parkin PhD FCIWEM C.WEM FGS was contracted to act as independent reviewer of the water resources components of this project, through his consultancy company Geoff Parkin Hydro Ltd. Geoff is a nationally and internationally recognised expert in water resource management, with over 30 years' experience in groundwater modelling and assessment through research, teaching, and working with regulators, water companies, local authorities and local community groups. His extensive international experience includes high profile projects on Integrated Water Resources Management (IWRM) for shared Israeli-Palestinian aquifers, transboundary water management involving all of the riparian countries in the Nile basin, and currently as co-investigator of a major international Global Challenge Research Fund (GCRF) study on Water Security and Sustainable Development. In the UK, he works closely with the Environment Agency, water companies including Anglian Water Services, and local authorities, on projects including for example groundwater modelling for resource management in East Anglia, reservoir decommissioning, and multi-source flooding. Until recently he was director of MSc programmes in Hydrology/Hydrogeology and Water Management at Newcastle University, and is now Head of Water Group in the School of Engineering. He is a member of the International Association of Hydrogeologists national committee and sits on the steering group of a national EA-led review of groundwater flooding. Geoff is a regular speaker at relevant industry events, and as a previous flood victim (Morpeth 2008), he has contributed actively to local issues including writing a flood section for the Local Neighbourhood Plan.

Geoff Parkin Hydro Ltd

To: Greater Cambridge Shared Planning

Copy: Clare Waller, Stantec UK Ltd

2nd November 2020

Independent Reviewer's Report on Greater Cambridge Integrated Water Management Study : Strategic Spatial Options Review

Dear Sir/Madam

As requested, this is to confirm that I have reviewed the draft report "*Greater Cambridge Integrated Water Management Study : Strategic Spatial Options Review*" as independent reviewer on behalf of Stantec UK Ltd. I reviewed Draft V003C of the report, after comments from stakeholders had been received and incorporated. My high-level and detailed comments have been considered and subsequently incorporated into the report by Stantec prior to submission to Greater Cambridge Shared Planning.

The scope of my review was to focus specifically on water resources aspects, although I have read and considered other relevant aspects of the overall report. In general, I agree with the overall conclusions in that flood risk is the most significant constraint on locations rather than water resources, and that the high growth scenario is problematic from a water resources perspective. I note, however, that findings from this high-level interim report should be treated with appropriate caution at this stage, until completion of the main Integrated Water Management Study. The outcomes from this interim study depend on certain assumptions which should be considered further during the full study, specifically including those of linear trajectories of growth, and non-household demand.

I also noted and welcomed the approach outlined in the draft report on an integrated water management strategy, highlighting regulatory, practical and behavioural change issues needed to achieve this, and the need for monitoring to support adaptive change.

I look forward to providing further contributions as needed to support this important and challenging work by Greater Cambridge Shared Planning and Stantec UK Ltd in developing a sustainable water strategy for the Cambridge area.

Best regards



Geoff Parkin

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Greater Cambridge Local Plan Strategic Spatial Options Assessment: Landscape & Townscape (November 2020)

Executive Summary

CBA was commissioned in May 2020 to prepare a Landscape Character Assessment of the Greater Cambridge area as part of the evidence base for the new Greater Cambridge Local Plan.

An Interim Draft Report has been completed in September 2020, which sets out the interim draft findings of the initial desk-based phase of the Landscape Character Assessment study.

Following field studies and further research, the full findings of the Landscape Character Assessment will be set out in a Draft Final Report scheduled to be completed in December 2020.

The appraisal of the strategic spatial options is based on the interim draft findings of the Landscape Character Assessment, which is a work in progress. The conclusions are therefore preliminary and will need to be verified once the study is further developed.

The headline preliminary conclusions at this stage are:

- Overall, all of the strategic spatial options and growth scenarios would result in changes, both negative and positive, in terms of conserving and enhancing the character of Greater Cambridge's landscapes and townscapes, maintaining local distinctiveness and strengthening sense of place.
- The Fens, Chalk Hills and River Valleys have sensitive landscape characteristics that are likely to be particularly vulnerable/susceptible to urban development. This may present constraints for higher growth scenarios associated with spatial options in these landscapes as described in the conclusions.
- The smaller historic villages and their landscape settings have sensitive townscape/landscape characteristics that are likely to be particularly vulnerable to change. This may present constraints for higher growth scenarios associated with spatial options focused on the dispersal of growth to existing villages as described in the conclusions.

- The historic townscape character and landscape setting of Cambridge is particularly vulnerable to change. This may present constraints for higher growth scenarios associated with spatial options focused on densification of the city and the edge of Cambridge as described in the conclusions.

Recommendations:

- Develop suitable landscape policies in the new Local Plan requiring provision of strategic landscape mitigation and enhancement measures for integrating new development around the edges of Cambridge and rural villages in South Cambridgeshire into the surrounding countryside.

Introduction

Introduction to evidence base

CBA was commissioned in May 2020 by the Greater Cambridge Shared Planning Service (on behalf of South Cambridgeshire District Council and Cambridge City Council) to prepare a Landscape Character Assessment of the Greater Cambridge area as part of the evidence base for the new Greater Cambridge Local Plan. The study is due to be completed in December 2020.

The purpose of the study is to develop an up-to-date and consistent assessment of the current character of the Greater Cambridge landscape. Among other things, the study is intended to inform the development of an appropriate spatial strategy and suitable landscape policies for the new Local Plan. It also provides a baseline for monitoring landscape change.

The Landscape Character Assessment identifies, maps and describes distinctive Landscape Character Types and Areas outside of the Cambridge Urban Area. Drawing on evidence provided by existing studies, the Landscape Character Assessment also includes high level townscape character assessments of rural villages within Greater Cambridge and the Cambridge Urban Area.

While the study provides a broad understanding of the key landscape sensitivities of Greater Cambridge's Landscape Character Types/Areas, it should be noted that it is not an assessment of the landscape's sensitivity or susceptibility to a particular development type or scenario.

Initial findings

The study is a work in progress. An Interim Draft Report has been completed in September 2020, which sets out the interim draft findings of the initial desk-based phase of the Landscape Character Assessment study.

In addition to taking into account feedback from stakeholders following a workshop held on 2nd September 2020, field studies and further research are being undertaken to verify/refine the landscape classification boundaries and the Landscape Character Type descriptions/guidelines, and to inform the preparation of the Landscape Character Area descriptions.

The full findings of the Landscape Character Assessment will be set out in a Draft Final Report scheduled to be completed in early December 2020.

Assessment of strategic (non-site specific) spatial options

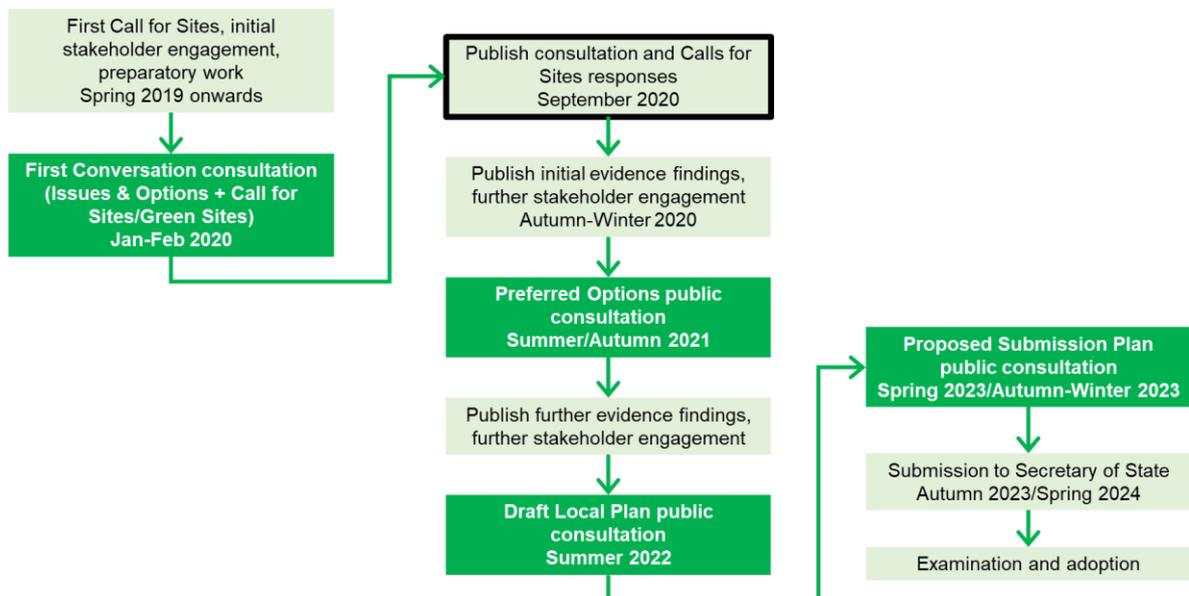
Cambridge City Council and South Cambridgeshire District Council completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.

The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

The initial evidence findings will be reported to the Joint Local Plan Advisory Group in autumn 2020, and help to inform further engagement with stakeholders.

Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below.

Process of Local Plan preparation



The strategic options

The three growth level options tested through this appraisal are:

- Minimum – standard method homes-led
- Medium – central scenario employment-led
- Maximum – higher employment-led

The spatial scenarios tested through the appraisal are:

- 1 - Densification of existing urban areas
- 2 - Edge of Cambridge – outside the Green Belt
- 3 - Edge of Cambridge – Green Belt
- 4 - Dispersal - new settlements
- 5 - Dispersal – villages
- 6 - Public transport corridors
- 7 - Supporting a high-tech corridor by integrating homes and jobs
- 8 - Expanding a growth area around transport nodes

Methodology

Note - the appraisal of the strategic spatial options is based on the interim draft findings of the Landscape Character Assessment, which is a work in progress. The conclusions are therefore preliminary and will need to be verified once the study is further developed.

Taking into account the interim draft findings of the emerging Landscape Character Assessment study where appropriate, CBA has undertaken a high level comparative review of the potential landscape and townscape character considerations of the strategic (non-site specific) spatial options and growth scenarios that are being tested as part of the Greater Cambridge Local Plan process.

Where appropriate, the analysis identifies the Landscape Character Types that provide the landscape setting and context for each of the strategic spatial options and summarises the key sensitivities of the landscape from the interim draft Landscape Character Assessment.

The potential landscape (or townscape) effects of the strategic spatial option are identified for the minimum growth scenario. The additional effects likely to occur from the medium and maximum growth scenarios are then identified.

The analysis also provides recommendations for strategic landscape mitigation and enhancement for each of the strategic spatial options. Specific mitigation would be required as part of more detailed studies in locating and designing future development.

Analysis Table

Strategic Spatial Option 1: Focus on Densification of existing urban areas	
This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge : the last major brownfield site within Cambridge urban area is at North East Cambridge which is being taken forward separately via an Area Action Plan.	
Growth Scenarios	High Level Landscape & Townscape Character Considerations
Minimum Growth Scenario <ul style="list-style-type: none"> • North East Cambridge • Cambridge Urban Area (low density) 	<p>The capacity of existing urban areas to accommodate growth on previously developed brownfield land without weakening distinctive local townscape characteristics/features is a key consideration, as are potential changes to key views and the landscape setting of the City experienced in approaches to and from the Cambridge Urban Area, particularly where tall buildings are proposed associated with densification. It is noted that a Strategic Heritage Impact Assessment study is being commissioned that will inform testing of impacts from this growth option on historic townscape character and views at a later stage of the Local Plan process.</p> <p>In addition to the Cambridge Urban Area, the landscape types that provide the setting and context for growth focussed around North East Cambridge are:</p> <ul style="list-style-type: none"> • The Fen Edge Claylands to the north - the peaceful, rural, open character of the landscape, surviving traditional orchards, pockets of high ecological value landscape features and the historic linear villages are inherent sensitivities of this landscape that are vulnerable to change. • The Cam River Valley extending north-eastwards to the Fens - the tranquil, intimate landscape and dense scattering of trees and scrub and small-scale pastoral fields along the river courses are inherent sensitivities of this landscape that are vulnerable to change.

	<p>The provision of appropriate strategic landscape mitigation and enhancement measures for integrating urban extensions on the edge of Cambridge into the surrounding countryside would be a key policy consideration for the new Local Plan. Such an approach is likely to be based on the following principles:</p> <ul style="list-style-type: none"> • Maintain strategic countryside gaps to protect the distinct rural character and separate identity of the outlying villages • Create a strong landscape structure to screen/soften built development as experienced in long, open views across the Fen Edge Claylands and intimate Cam River Valley landscapes • Strengthen the character of linear landscape features to create biodiverse and accessible green corridors connecting developments to the surrounding urban edge countryside (informed by the findings of the Green Infrastructure Study) <p>By focusing on the use of brownfield land to accommodate growth, this growth scenario is likely to result in more limited changes to distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development compared to the medium growth scenario, which involves additional supply focussing on greenfield land.</p>
<p>Medium Growth Scenario</p> <ul style="list-style-type: none"> • North East Cambridge • Cambridge Urban Area (medium density) • Cambridge Airport • Edge of Cambridge in Green Belt (one site/broad location) 	<p>The considerations for North East Cambridge under the minimum growth scenario are also applicable to this scenario.</p> <p>Increased densification of the Cambridge Urban Area is likely to include the potential for additional tall buildings, which could further alter the townscape of Cambridge and may have greater impacts on open views across the surrounding landscape towards Cambridge compared to the minimum growth scenario.</p>



	<p>The considerations for Cambridge Airport (Option 2) are also applicable to this scenario.</p> <p>Urban extensions on the edge of Cambridge on greenfield land are likely to result in landscape changes that may harm distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development, and also has potential for reducing countryside gaps separating the Cambridge Urban Area and the necklace of surrounding villages.</p>
<p>Maximum Growth Scenario</p> <ul style="list-style-type: none"> • North East Cambridge • Cambridge Urban Area (high density) • Cambridge Airport 	<p>The considerations for North East Cambridge under the minimum growth scenario are also applicable to this scenario.</p> <p>Increased densification of the Cambridge Urban Area is likely to include the potential for additional tall buildings, which could further alter the townscape of Cambridge and may have greater impacts on open views across the surrounding landscape towards Cambridge compared to the medium growth scenario.</p> <p>The considerations for Cambridge Airport (Option 2) are also applicable to this scenario.</p>



<p>Strategic Spatial Option 2: Focus on Edge of Cambridge - outside Green Belt</p> <p>This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.</p>	
Growth Scenarios	High Level Landscape & Townscape Character Considerations
<p>Minimum Growth Scenario</p> <ul style="list-style-type: none"> • Cambridge Airport • North East Cambridge • One Village site 	<p>The Fen Edge Chalklands landscape type to the east of Cambridge provides the landscape setting and context for growth focussed around Cambridge Airport. The peaceful, rural open character of the landscape, long open views across the landscape towards Cambridge, scattered features of ecological and historic value, and traditional vernacular and linear form of village settlements are inherent sensitivities of the Fen Edge Chalklands landscape that are vulnerable to change.</p> <p>Due to the open character of the Fen Edge Chalklands landscape context for Cambridge Airport, it is likely that the new urban edge would be a prominent feature in the landscape.</p> <p>The provision of appropriate strategic landscape mitigation and enhancement measures for integrating an urban extension on the edge of Cambridge into the surrounding countryside would be a key policy consideration for the new Local Plan. Such an approach is likely to be based on the following principles:</p> <ul style="list-style-type: none"> • Maintain a strategic countryside gap to protect the distinct rural character and separate identity of the villages to the east of Cambridge (including Teversham, Little/Great Wilbraham) • Create a strong landscape structure to screen/soften built development as experienced in long, open views across the Fen Edge Chalklands landscape • Strengthen the character of linear landscape features to create biodiverse and accessible green corridors connecting developments on the edge of Cambridge to the surrounding countryside (informed by the findings of the Green Infrastructure Study)



	<p>The considerations for North East Cambridge (Option 1) are also applicable to this growth scenario.</p> <p>By focusing predominantly on the use of brownfield land to accommodate growth, this minimum growth scenario is likely to result in more limited changes that may harm distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development compared to the medium and maximum growth scenarios, which involve additional supply focussing on greenfield land.</p>
<p>Medium Growth Scenario</p> <ul style="list-style-type: none"> • Cambridge Airport • North East Cambridge • Two smaller new settlements of 4,500 dwellings on public transport corridors • Balance spread across the Rural Centre (30%) and Minor Rural Centres (70%) outside of the Green Belt 	<p>This medium growth scenario includes additional supply focussing on greenfield land associated with new settlements and rural villages to accommodate growth, which is likely to result in changes that may harm distinctive local landscape and townscape characteristics/features that are particularly vulnerable to changes from built development compared to the minimum growth scenario.</p>

<p>Maximum Growth Scenario</p> <ul style="list-style-type: none"> • Cambridge Airport • North East Cambridge • One larger new settlement of 9,000 dwellings on a public transport corridor • One smaller new settlement of 4,500 dwellings on a public transport corridor 	<p>This maximum growth scenario includes additional supply focussing on greenfield land associated with new settlements to accommodate growth, which is likely to result in changes that may cause greater harm to distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development compared to the medium growth scenario.</p>
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Strategic Spatial Option 3: Focus on Edge of Cambridge - Green Belt

This approach would create new homes and jobs in **extensions on the edge of Cambridge**, involving release of land from the Green Belt

Minimum Growth Scenario

- Edge of Cambridge – Green Belt (equivalent to three sites/broad locations)

The landscape types that provide the setting and context for growth focussed on the edge of Cambridge are:

- The **Fen Edge Claylands** to the north – the peaceful, rural, open character of the landscape, surviving traditional orchards, pockets of high ecological value landscape features and the historic, linear village cores are inherent sensitivities of this landscape that are vulnerable to change.
- The **Cam River Valley** extending north-eastwards to the Fens and southwards – the tranquil, intimate landscape, and the dense scattering of trees and scrub and small-scale pastoral fields along the river courses are inherent sensitivities of this landscape that are vulnerable to change.
- The **Fen Edge Chalklands** to the east – the peaceful, rural open character of the landscape, long open views across the landscape towards Cambridge, scattered features of ecological and historic value, and traditional vernacular and linear form of village settlements are inherent sensitivities of this landscape that are vulnerable to change.
- The **Chalk Hills** to the south-east – the distinctive, elevated and undeveloped hills and ridges, open, panoramic views across Greater Cambridge and beyond, scattered woodland including ancient woodland on summits and slopes, and the tranquil often remote landscape character are inherent sensitivities of this landscape that are vulnerable to change.
The **Lowland Claylands** to the south-west – the rural tranquillity, scattered pattern of small woodlands, surviving moated sites and the dispersed, rural settlement pattern are inherent sensitivities of this landscape that are vulnerable to change.

- The **Wooded Claylands** to the west – the rural tranquillity, distinctive pattern of hedgerows and woodland including parkland estates, rural settlement pattern of vernacular villages and dispersed farms, and long, framed views from elevated landform are inherent sensitivities of this landscape that are vulnerable to change.

The provision of appropriate strategic landscape mitigation and enhancement measures for integrating urban extensions on the edge of Cambridge into the surrounding countryside would be a key policy consideration for the new Local Plan. Such an approach is likely to be based on the following principles:

- Maintain strategic countryside gaps to protect the distinct rural character and separate identity of the outlying necklace of villages surrounding Cambridge (including Waterbeach, Teversham, Little Wilbraham, Great Wilbraham, Great Shelford, Little Shelford, Hauxton, Grantchester, Coton, Girton, Histon, Milton)
- Create a strong landscape structure to screen/soften built development as experienced in views across the adjacent landscape types
- Strengthen the character of linear landscape features to create biodiverse and accessible green corridors connecting developments on the edge of Cambridge to the surrounding countryside (informed by the findings of the Green Infrastructure Study)

By focusing on the use of greenfield land to accommodate growth, this option is likely to result in (i) larger scale landscape changes that may harm distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development; while (ii) minimising changes that may harm distinctive local townscape characteristics/features that are particularly vulnerable to changes from built development.

<p>Medium Growth Scenario</p> <ul style="list-style-type: none"> • Edge of Cambridge – Green Belt (equivalent to five sites/broad locations) • Balance within Cambridge urban area 	<p>This medium growth scenario includes additional supply focussing on greenfield land associated with urban extensions on the edge of Cambridge and on brownfield land within the Cambridge Urban Area to accommodate growth, which is likely to result in changes that may cause greater harm to distinctive local landscape and townscape characteristics/features that are particularly vulnerable to changes from built development compared to the minimum and maximum growth scenarios.</p>
<p>Maximum Growth Scenario</p> <ul style="list-style-type: none"> • Edge of Cambridge – Green Belt (equivalent to five sites/broad locations) 	<p>This maximum growth scenario includes additional supply focussing on greenfield land associated with urban extensions on the edge of Cambridge to accommodate growth, which is likely to result in changes that may cause greater harm to distinctive local landscape and townscape characteristics/features that are particularly vulnerable to changes from built development compared to the minimum and medium growth scenarios.</p>

Strategic Spatial Option 4: Focus on New settlements

New settlements would **establish a whole new town or village**, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge

Minimum Growth Scenario

- Two smaller new settlements of 4,500 dwellings on a public transport corridor

The provision of appropriate strategic landscape mitigation and enhancement measures for integrating new settlements into the surrounding countryside would be a key policy consideration for the new Local Plan. Such an approach is likely to be based on the following principles:

- Maintain strategic countryside gaps to protect the distinct character and separate identity of surrounding villages and the Cambridge Urban Area
- Create a strong landscape structure to screen/soften built development as experienced in views across adjacent landscape types
- Strengthen the character of linear landscape features to create biodiverse and accessible green corridors connecting new settlements to the surrounding countryside (informed by the findings of the Green Infrastructure Study)

By focusing on the use of greenfield land to accommodate growth in new towns or villages, this option is likely to result in larger scale landscape changes that may harm distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development, while limiting changes to existing settlements that may harm distinctive local townscape characteristics/features compared to other spatial options.

The capacity of different landscape types to accommodate new settlements will vary across the Greater Cambridge area subject to the vulnerability/susceptibility of their specific characteristics to this form of built development. In general terms, the Fens, River Valley and Chalk Hills are considered to be more vulnerable/susceptible to changes from new settlements than other landscape types within Greater Cambridge.

<p>Medium Growth Scenario</p> <ul style="list-style-type: none"> • Three new settlements on public transport corridors (two larger new settlements of 9,000 dwellings and one smaller new settlement of 4,500 dwellings) • One smaller new settlement of 4,500 dwellings on the road network 	<p>This medium growth scenario includes additional supply focussing on greenfield land associated with new settlements to accommodate growth, which is likely to result in changes that may cause greater harm to distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development compared to the minimum growth scenario.</p>
<p>Maximum Growth Scenario</p> <ul style="list-style-type: none"> • Three new settlements on public transport corridors (two larger new settlements of 9,000 dwellings and one smaller new settlement of 4,500 dwellings) • One smaller new settlement of 4,500 dwellings on the road network • Built at a higher delivery rate than the medium growth scenario 	<p>This maximum growth scenario includes additional supply focussing on greenfield land associated with new settlements to accommodate growth, which is likely to result in changes that may cause greater harm to distinctive local landscape characteristics/features that are particularly vulnerable to changes from built development compared to the minimum growth scenario.</p>

<p>Strategic Spatial Option 5: Focus on Dispersal – villages</p> <p>This approach would spread new homes and jobs out to the villages.</p>	
<p>Minimum, Medium & Maximum Growth Scenarios</p> <ul style="list-style-type: none"> • 40% of balance at Rural Centres • 40% of balance at Minor Rural Centres • 17% of balance at Group villages • 3% of balance to find at Infill villages 	<p>The capacity of existing rural villages to accommodate growth without weakening distinctive local landscape or townscape characteristics/features is a key consideration, as are potential changes to key views experienced in approaches to and from the villages. The villages within the Greater Cambridge area vary considerably in size and character reflecting their landscape type setting/context and historical development. While some of the larger villages have distinctive historic cores, the overall townscape character of these settlements is often dominated by extensive late 20th Century development. In contrast, the townscape character of many of the smaller villages is dominated by their distinctive historic cores with more limited late 20th Century development.</p> <p>The provision of appropriate strategic landscape mitigation and enhancement measures for integrating growth on greenfield land around the edges of villages into the surrounding countryside would be a key policy consideration for the new Local Plan. Such an approach is likely to be based on the following principles:</p> <ul style="list-style-type: none"> • Maintain strategic countryside gaps to protect the distinct character and separate identity of the rural villages • Create a strong landscape structure to screen/soften built development on edges of villages as experienced in the wider landscape • Strengthen the character of linear landscape features to create biodiverse and accessible green corridors connecting villages to the surrounding countryside (informed by the findings of the Green Infrastructure Study)



	<p>Where the focus is on infill development to accommodate growth, the provision of appropriate mitigation and enhancement measures for integrating built development sensitively into the townscape character of the villages would also be a key policy consideration for the new Local Plan. Such measures should be informed by the building and landscape design principles identified by the 2010 South Cambridgeshire District Design Guide SPD, and any successor documents, and also the relevant Village Design Guides published by South Cambridgeshire District Council in 2020 and emerging Neighbourhood Plans where available.</p>
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<p>Strategic Spatial Option 6: Focus on public transport corridors</p> <p>This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.</p>	
<p>Minimum Growth Scenario</p> <ul style="list-style-type: none"> • North East Cambridge • One smaller new settlement of 4,500 dwellings on a public transport corridor • Balance spread across 18 villages sited along existing or proposed public transport corridors 	<p>Focusing new settlement along existing public transport corridors would be likely to concentrate the urbanising impact upon the rural character of the Greater Cambridge landscape. Expansion of existing villages could result in the coalescence of settlements along the public transport corridors.</p> <p>The provision of appropriate strategic landscape mitigation and enhancement measures for integrating new settlements and growth on greenfield land around the edges of villages into the surrounding countryside would be a key policy consideration for the new Local Plan. Such an approach is likely to be based on the following principles:</p> <ul style="list-style-type: none"> • Maintain strategic countryside gaps to protect the distinct character and separate identity of the rural villages • Create a strong landscape structure to screen/soften built development as experienced in views across adjacent landscape types • Strengthen the character of linear landscape features to create biodiverse and accessible green corridors connecting new settlements to the surrounding countryside (informed by the findings of the Green Infrastructure Study) <p>The considerations for North East Cambridge (Option 1) are also applicable to this growth scenario.</p> <p>This minimum growth scenario focussing on new settlements along public transport corridors would result in more limited impacts on distinctive local landscape characteristics/features that contribute to the character of the Greater Cambridge landscape, compared to the other scenarios for this option.</p>

<p>Medium Growth Scenario</p> <ul style="list-style-type: none"> • North East Cambridge • One larger new settlement of 9,000 dwellings on a public transport corridor • Balance spread across 18 villages sited along existing or proposed public transport corridors 	<p>The medium growth scenario is likely to have greater impacts on the Greater Cambridge landscape than the minimum growth scenario – including potentially on the landscape setting of rural historic villages along the public transport corridors – as it includes additional sources of supply on greenfield land.</p>
<p>Maximum Growth Scenario</p> <ul style="list-style-type: none"> • North East Cambridge • One larger new settlement of 9,000 dwellings on a public transport corridor • Balance spread across 18 villages sited along existing or proposed public transport corridors • Built at a higher delivery rate than the medium growth scenario 	<p>The maximum growth scenario is likely to have greater impacts on the Greater Cambridge landscape than the minimum growth scenario – including potentially on the landscape setting of rural historic villages along the public transport corridors – as it includes additional sources of supply on greenfield land.</p>

Strategic Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs – southern cluster

This approach would focus new homes close to existing and committed jobs within the **life sciences cluster area around the south of Cambridge**, including homes at existing villages and at new settlements.

Minimum Growth Scenario

- One smaller new settlement of 4,500 dwellings on a public transport corridor within the southern cluster area
- Balance distributed equally across the five villages located within the southern cluster area that are on public transport corridors

The landscape types that provide the setting and context for growth focussed within the life sciences cluster area around the south of Cambridge are the Lowland Claylands, the Cam River Valley and the Chalk Hills.

- The **Lowland Claylands** – the rural tranquillity, scattered pattern of small woodlands, surviving moated sites and the dispersed, rural settlement pattern are inherent sensitivities of this landscape that are vulnerable to change.
- The **Cam River Valley** – the tranquil, intimate landscape, and the dense scattering of trees and scrub and small-scale pastoral fields along the river courses are inherent sensitivities of this landscape that are vulnerable to change.
- The **Chalk Hills** – the distinctive, elevated and undeveloped hills and ridges, open, panoramic views across Greater Cambridge and beyond, scattered woodland including ancient woodland on summits and slopes, and the tranquil often remote landscape character are inherent sensitivities of this landscape that are vulnerable to change.

By focussing growth around a new settlement and expansion of existing villages in the southern cluster area, this could lead to coalescence of settlements, potential harm to local landscape and townscape characteristics/features and key views as experienced in views from the Gog Magog Chalk Hills that frame the landscape to the south of Cambridge.

This spatial option would concentrate urban development in a single location, reducing the urbanising impact of development across the wider Greater Cambridge landscapes as a whole.

The provision of appropriate strategic landscape mitigation and enhancement measures for integrating new settlements and growth on greenfield land around the edges of villages into the surrounding countryside would be a key policy consideration for the new Local Plan. Such an approach is likely to be based on the following principles:

- Maintain strategic countryside gaps to protect the distinct character and separate identity of surrounding villages and the Cambridge Urban Area
- Create a strong landscape structure to screen/soften built development as experienced in views across adjacent landscape types
- Strengthen the character of linear landscape features to create biodiverse and accessible green corridors connecting new settlements to the surrounding countryside (informed by the findings of the Green Infrastructure Study)

Medium Growth Scenario

- One smaller new settlement of 4,500 dwellings on a public transport corridor within the southern cluster area
- Balance spread equally across five villages sited along existing/proposed public transport corridors within the southern cluster area (70%), and further villages within the southern cluster area not on public transport corridors (including Group villages 20% and Infill villages 10%)

The medium growth scenario is likely to have greater impacts on the landscape south of Cambridge than the minimum growth scenario as it includes additional sources of supply on greenfield land around villages in the southern cluster.

<p>Maximum Growth Scenario</p> <ul style="list-style-type: none"> • One larger new settlement of 9,000 dwellings on a public transport corridor within the southern cluster • Balance spread equally across the five villages sited at existing/proposed public transport nodes within the southern cluster • Cambridge Airport • North East Cambridge 	<p>The maximum growth scenario is likely to have greater impacts on the landscape south of Cambridge than the medium growth scenario as it includes additional sources of supply on greenfield land for a larger new settlement within the southern cluster, plus additional sources of supply on brownfield land for Cambridge Airport (see Option 2) and North East Cambridge (see Option 1).</p>
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Strategic Spatial Option 8: Expanding a growth area around transport nodes

This approach would focus new homes at **Cambourne and along the A428 public transport corridor**, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

Minimum Growth Scenario

- Expansion of Cambourne by the equivalent of one smaller new settlement (completions and commitments + 4,500 dwellings = 11,300 dwellings)
- Balance spread across three villages sited along the A428 public transport corridor

The **Wooded Claylands** landscape type provides the setting and context for growth focussed at Cambourne and villages along the A428 public transport corridor to the west of Cambridge. The rural tranquillity, distinctive pattern of hedgerows and woodland including parkland estates, rural settlement pattern of vernacular villages and dispersed farms, and long, framed views from elevated landform are inherent sensitivities of the Wooded Claylands landscape that are vulnerable to change.

Expansion of Cambourne and villages along the A428 public transport corridor could result in the coalescence of settlements along the public transport corridors. This spatial option would concentrate urban development in a single location, reducing the urbanising impact of development across the wider Greater Cambridge landscapes as a whole.

The provision of appropriate strategic landscape mitigation and enhancement measures for integrating new settlements and growth on greenfield land around the edges of villages into the surrounding countryside would be a key policy consideration for the new Local Plan. Such an approach is likely to be based on the following principles:

- Maintain strategic countryside gaps to protect the distinct character and separate identity of the rural villages
- Create a strong landscape structure to screen/soften built development as experienced in views across adjacent landscape types

	<ul style="list-style-type: none"> Strengthen the character of linear landscape features to create biodiverse and accessible green corridors connecting new settlements to the surrounding countryside (informed by the findings of the Green Infrastructure Study)
<p>Medium Growth Scenario</p> <ul style="list-style-type: none"> Expansion of Cambourne by the equivalent of one smaller new settlement (completions and commitments + 4,500 dwellings = 11,300 dwellings) Balance spread across three villages sited along the A428 public transport corridor (60%) and four further Minor Rural Centre/ Group villages within 5km of Cambourne (40%) 	<p>The medium growth scenario is likely to have greater impacts on the character of the Wooded Clayland landscapes than the minimum growth scenario as it includes additional sources of supply on greenfield land around villages within 5km of Cambourne.</p>

<p>Maximum Growth Scenario</p> <ul style="list-style-type: none"> • Expansion of Cambourne by the equivalent of one larger new settlement (completions and commitments + 9,000 dwellings = 15,800 dwellings) • Balance spread across three villages sited along the A428 public transport corridor (60%) and one Minor Rural Centre and three Group villages within 5km of Cambourne (40%) • Cambridge Airport • North East Cambridge 	<p>The maximum growth scenario is likely to have greater impacts on the character of the Wooded Clayland landscapes than the medium growth scenario as it includes additional sources of supply on greenfield land for a larger new settlement, plus additional sources of supply on brownfield land for Cambridge Airport (see Option 2) and North East Cambridge (see Option 1).</p>
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Preliminary Conclusions

Taking into account the interim draft findings of the emerging Landscape Character Assessment study where appropriate, the above table sets out a high level comparative analysis of the potential landscape and townscape character considerations of the strategic (non-site specific) spatial options and growth scenarios that are being tested as part of the Greater Cambridge Local Plan process. The preliminary conclusions from this analysis are outlined below.

Overall

Overall, all of the strategic spatial options and growth scenarios would result in changes, both negative and positive, in terms of conserving and enhancing the character of Greater Cambridge's landscapes and townscapes, maintaining local distinctiveness and strengthening sense of place.

Option 1: Focus on Densification of existing urban areas

In addition to the historic townscape characteristics of the Cambridge Urban Area, the Fen Edge Claylands and the Cam River Valley extending northwards to the Fens provide the setting and context for growth focussed around North East Cambridge.

The minimum growth scenario focussing on the regeneration of brownfield land in North East Cambridge and the Cambridge Urban Area would result in limited impacts on distinctive local townscape characteristics/features and key views that contribute to the distinctive historic character and landscape setting of Cambridge, and limited impacts on the wider Greater Cambridge landscape considered as a whole, compared to the other scenarios for this option.

The medium and maximum growth scenarios are likely to have greater impacts on the townscape and wider landscape setting of Cambridge as they include higher densities that could introduce taller buildings within the Cambridge Urban Area and additional sources of supply on greenfield land.

Option 2: Focus on Edge of Cambridge - outside Green Belt

Due to the open character of the Fen Edge Chalklands landscape context for Cambridge Airport, it is likely that the new urban edge would be a prominent feature in the landscape and require provision of appropriate strategic landscape mitigation and enhancement measures.

By focusing predominantly on the use of brownfield land to accommodate growth, this minimum growth scenario is likely to result in more limited changes that may harm distinctive local landscape characteristics/features of the Fen Edge Chalklands that are particularly vulnerable to changes from built development compared to the medium and maximum growth scenarios, which involve additional supply focussing on greenfield land.

Option 3: Focus on Edge of Cambridge - Green Belt

Use of greenfield land on the edge of the Cambridge Urban Area could result in landscape changes that would alter the setting of the city, particularly in relation to the historic core.

This option is non-site specific in terms of location of development. However, in general terms, the Fens (to the north-east and east), the Cam River Valley to the north-east and south-west), the eastern part of the Western Claylands and Lowland Claylands (to the west) and the Gog Magog Chalk Hills (to the south) have sensitive landscape characteristics that are likely to be particularly vulnerable/susceptible to changes from major urban extensions than other landscape types around the edge of Cambridge.

The minimum growth scenario for expansion of the Cambridge Urban Area would result in more limited impacts on distinctive local landscape characteristics/features and key views that contribute to the distinctive historic character and landscape setting of Cambridge, and also have more limited impacts on the wider Greater Cambridge landscape considered as a whole, compared to the other scenarios for this option.

As they include additional sources of supply on greenfield land, the medium and maximum growth scenarios are likely to have greater impacts on the wider landscape setting of Cambridge – including potentially on key views of the City (such as from the Gog Magog Hills and Wimpole Ridge) and from an increased sense of coalescence with the necklace of rural villages surrounding Cambridge.

Option 4: Focus on New settlements

This option is non-site specific in terms of location of development. However, in general terms, the Fens, River Valley and Chalk Hills have sensitive landscape characteristics that are likely to be more vulnerable/susceptible to changes from new settlements than other landscape types within Greater Cambridge.

By focussing on new settlements to accommodate growth, this spatial option provides opportunities for high quality and distinctive housing design that is responsive to local character and creates a strong sense of place through a comprehensive masterplanning process based on 21st century settlement planning principles (including sustainable building and urban design, landscaping and green infrastructure provision).

The minimum growth scenario focussing on new settlements would result in more limited impacts on distinctive local landscape characteristics/features that contribute to the character of the Greater Cambridge landscape, compared to the other scenarios for this option.

The medium and maximum growth scenarios are likely to have greater impacts on the Greater Cambridge landscape – including potentially on the landscape setting of rural historic villages – as they include additional sources of supply on greenfield land.

Option 5: Focus on Dispersal – villages

In general terms, the smaller villages dominated by historic cores with distinctive landscape settings have sensitive townscape/landscape characteristics that are likely to be more vulnerable/susceptible to changes from growth than, typically, the larger villages within Greater Cambridge where their character is dominated by 20th/21st Century peripheral estate development.

The minimum growth scenario focussing on dispersal of growth to the villages would result in more limited impacts on distinctive local characteristics/features that contribute to the distinctive historic character and landscape setting of Greater Cambridge's rural villages, compared to the other scenarios for this option.

Option 6: Focus on Public transport corridors

The minimum growth scenario focussing on new settlements on public transport corridors would result in more limited impacts on distinctive local landscape characteristics/features that contribute to the character of the Greater Cambridge landscape, compared to the other scenarios for this option. New development should minimise linear ribbon development along transport routes in order to reduce coalescence of settlements and maintain strategic countryside gaps.

The medium and maximum growth scenarios are likely to have greater impacts on the Greater Cambridge landscape – including potentially on the landscape setting of rural historic villages along the public transport corridors – as they include additional sources of supply on greenfield land.

Option 7: Supporting a High-tech corridor by integrating homes and jobs – southern cluster

In general terms, the River Valley and Chalk Hills have sensitive landscape characteristics that are likely to be more vulnerable/susceptible to changes from development focussed on the southern cluster than the Lowland Claylands landscape type within this part of Greater Cambridge.

Focussing growth in a single location would reduce landscape changes across the wider Greater Cambridge landscape. However, it could lead to adverse impacts upon distinctive, local landscape characteristics and features.

The minimum growth scenario focussing on the southern cluster would result in more limited impacts on distinctive local landscape characteristics/features that contribute to the character of the Greater Cambridge landscape, compared to the other scenarios for this option.

The medium and maximum growth scenarios focussing on the southern cluster are likely to have greater impacts on the Greater Cambridge landscape as they include additional sources of supply on greenfield land.

Option 8: Expanding a growth area around transport nodes

In general terms, the Wooded Claylands landscape type is considered to offer potential opportunities to accommodate growth focussing on the expansion of Cambourne along the A428 public transport corridor to the west of Cambridge.

The minimum growth scenario would result in more limited impacts on distinctive local landscape characteristics/features that contribute to the character of the Greater Cambridge landscape, compared to the other scenarios for this option.

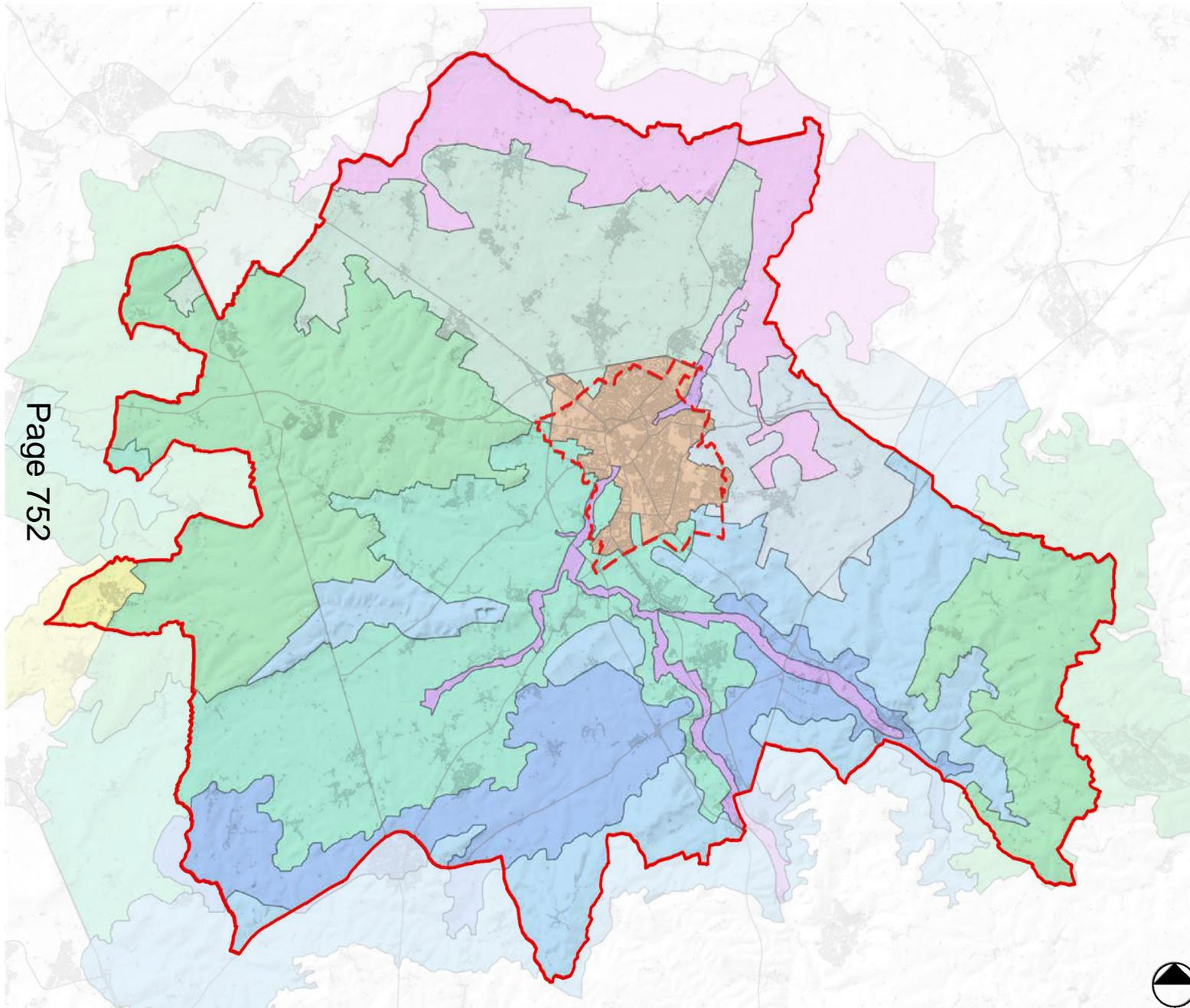
The medium and maximum growth scenarios are likely to have greater impacts on the Greater Cambridge landscape as they include additional sources of supply on greenfield land.

Recommendations

Policy Mitigation

For all options, it would be advisable to consider developing suitable landscape policies in the new Local Plan that require provision of strategic landscape mitigation and enhancement measures for integrating new development around the edges of Cambridge and rural villages in South Cambridgeshire into the surrounding countryside. The policy approach should be informed and supported by the relevant landscape management objectives and landscape planning guidelines identified by the new Greater Cambridge Landscape Character Assessment, taking into account the principles highlighted in the above table as appropriate and in line with the emerging Greater Cambridge Green Infrastructure Strategy.

DRAFT LANDSCAPE CHARACTER TYPES



KEY



Study Area



Cambridge City Boundary



Fens



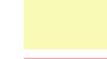
Fen Edge Claylands



Lowland Claylands



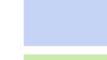
Wooded Claylands



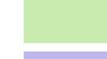
Wooded Greensand Ridge



Fen Edge Chalklands



Chalk Hills



Lowland Chalklands



River Valleys



Cambridge Urban Area

Page 752

Source:
CBA 2020



**South Cambridgeshire District
Council and Cambridge City Council**

**Greater Cambridge Local
Plan strategic spatial
options assessment
Sustainability Appraisal
(November 2020)**

Final report



**South Cambridgeshire District Council and
Cambridge City Council**

**Greater Cambridge Local Plan
strategic spatial options
assessment**

Sustainability Appraisal (November 2020)

Version	Status	Prepared	Checked	Approved	Date
1.	Interim draft for client	J. Buck O. Dunham S. Smith	S. Smith J. Owen	J. Owen	08.10.20
2.	Final draft	S. Smith	S. Smith J. Owen	J. Owen	06.11.20
3.	Final report	S. Smith	S. Smith J. Owen	J. Owen	13.11.20

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Chapter 1

Executive Summary

Introduction

1.1 This Sustainability Appraisal (SA) Report has been prepared by LUC on behalf of South Cambridgeshire District Council and Cambridge City Council (the Councils) as part of the Sustainability Appraisal (incorporating Strategic Environmental Assessment, Health Impact Assessment and Equalities Impact Assessment) of their Local Plan.

1.2 This report is part of a wider Sustainability Appraisal process, which began in 2019 with the production of a Scoping Report¹. The Scoping Report set out the existing baseline in the plan area for a range of sustainability topics, identified plans, policies and programmes relevant to the SA and the Local Plan, identified key sustainability issues in Greater Cambridge and described the appraisal methodology for the remaining stages of the SA.

1.3 The Issues and Options set out in the Greater Cambridge Local Plan 'First Conversation' Issues and Options 2020 document were subject to SA and the result of this were published in the SA of Issues and Options² (2019). This document uses the same methodology as previous assessments and draws on the findings of the SA of Issues and Options, where relevant.

1.4 This document presents the findings of the SA of strategic spatial options being considered by the Councils. It will help to inform the Councils' decision making regarding which of the strategic spatial options to take forward in the next stage of preparation of the Greater Cambridge Local Plan.

Summary of findings

1.5 The eight strategic spatial options have been subject to Sustainability Appraisal, including their effects at different levels of growth. With regards to levels of growth, the minimum growth scenario tends to have the least negative effects, as a lower level of growth is likely to put less pressure on local services and environmental resources. However, the maximum scenario tends to include larger developments, which are likely to have greater scope for providing new services and facilities and for being designed in a way that encourages healthy lifestyles and environmental enhancements.

1.6 Option 1 'Densification of existing urban areas' performs very well, as focusing growth in and around Cambridge, means development is likely to have good access to existing services and

¹ LUC (2019) Greater Cambridge Local Plan, Sustainability Appraisal Scoping Report. Available at: <https://www.greatercambridgeplanning.org/media/1306/greater-cambridge-local-plan-sustainability-appraisal-scoping-report-2019.pdf>

² LUC (2019) Greater Cambridge Local Plan, Sustainability Appraisal of Issues and Options. Available at: <https://www.greatercambridgeplanning.org/media/1164/sustainability-appraisal.pdf>

facilities, although these could become overwhelmed by increased demand. Development in and around Cambridge would likely have good access to jobs, as well as supporting the city's economy. In addition, larger developments, such as North East Cambridge and Cambridge Airport are likely to provide new services, facilities and green infrastructure.

1.7 Option 2 'Edge of Cambridge – outside Green Belt' performs quite well when fully built out, although not as well within the plan period. Growth around Cambridge would be well located for services and facilities. This option includes additional sources of supply, including new settlements. Whilst new settlements are likely to bring sustainability benefits in the long term, they may experience lower levels of accessibility and generate higher carbon emissions in the short term.

1.8 Option 3 'Edge of Cambridge – Green Belt' in some respects is expected to perform similarly to Option 2 as it would result in greater accessibility to existing services and facilities and therefore lower levels of car use. Effects will be dependent on the size of particular developments, as larger developments are more likely to include new services and facilities and integrate green infrastructure and active travel networks.

1.9 Option 4 'Dispersal – new settlements' performs very well when fully built out, although not as well within the plan period. It performs particularly well against the social SA objectives, as all new settlements are expected to be of a size that provides for the day to day needs of residents and can incorporate good design principles. However, these benefits may not be realised until new settlements are fully built out.

1.10 Option 5 'Dispersal – villages' performs least well as it is likely to lead to scattered development that is likely to have poorer access to services, facilities and jobs. It is unlikely to provide the critical mass of development at any particular location to provide new services and facilities or environmental enhancements.

1.11 Option 6 'Public transport corridors' performs well, particularly when fully built out. This option is expected to provide good access to existing services and facilities via public transport, therefore helping to minimise carbon emissions and air pollution. However, this option could result in development in areas with higher environmental sensitivity, depending on the exact location of development.

1.12 Option 7 'Supporting a high-tech corridor by integrating homes and jobs' performs very well, particularly when fully built out, as locating homes in this area will enable easy access to jobs, as well as fairly good access to existing services, facilities and employment opportunities in Cambridge itself. It is also expected to provide some new facilities at a new settlement. However, there are sensitive environmental features in this area that could be adversely affected by development. This option, like most, performs better when fully built out than within the plan period, as supporting infrastructure is more likely to be delivered in full at that point.

1.13 Option 8 'Expanding a growth area around transport nodes' performs very well when fully built out, but less well within the plan period. This option presents the opportunity to build on the existing settlement at Cambourne and expand its offer. However, the positive effects recorded are largely dependent on strategic sustainable transport infrastructure projects, which are unlikely to come forward in the short term.

1.14 Note that all options are expected to result in a mix of positive and negative effects. These will vary according to the growth scenario and their timing. The effects within the plan period can differ from the effects beyond the plan period when the developments are fully built out. Some of the differences between sustainability implications of different options are minimal and therefore the assessments in this report should be read in full, in order to fully understand the potential effects of each option. In addition, the options assessed are high-level, strategic options that are not site specific. Many impacts will be dependent on the exact location and design of development, which have not therefore been identified and addressed in this Report..

Chapter 2

Introduction

2.1 South Cambridgeshire District Council and Cambridge City Council (the Councils) have commissioned LUC to undertake a Sustainability Appraisal (SA) (incorporating Strategic Environmental Assessment (SEA), Health Impact Assessment (HIA) and Equalities Impact Assessment (EqIA)) of their Local Plan.

2.2 The Councils are required by law to carry out both SEA and SA of the Greater Cambridge Local Plan. The Councils have appointed LUC to do this on their behalf. SEA assesses the likely environmental effects of a plan, whereas SA builds on this to assess economic and social effects as well. The SA also includes a Health Impact Assessment to determine the impacts of the Local Plan on people's health and well-being, and an Equality Impact Assessment to identify if any groups of people with 'protected characteristics' within Greater Cambridge may be disproportionately affected.

2.3 The purpose of this document is to assess the likely impacts of the strategic spatial options on the SA objectives. It will help to inform the Councils' decision making regarding which of the strategic spatial options to take forward in the next stage of preparation of the Greater Cambridge Local Plan.

Initial findings

2.4 The SA process began in 2019 with the production of a Scoping Report³. The Scoping Report set out the existing baseline in the plan area for a range of sustainability topics, identified plans, policies and programmes relevant to the SA and the Local Plan, identified key sustainability issues in Greater Cambridge and set out the appraisal methodology for the remaining stages of the SA, including this report.

2.5 The Issues and Options set out in the Greater Cambridge Local Plan 'First Conversation' Issues and Options 2020 document were subject to SA and the result of this were published in the SA of Issues and Options⁴ (2019).

2.6 This document uses the same methodology as previous assessments and draws on the findings of the SA of Issues and Options, where relevant.

³ LUC (2019) Greater Cambridge Local Plan, Sustainability Appraisal Scoping Report. Available at: <https://www.greatercambridgeplanning.org/media/1306/greater-cambridge-local-plan-sustainability-appraisal-scoping-report-2019.pdf>

⁴ LUC (2019) Greater Cambridge Local Plan, Sustainability Appraisal of Issues and Options. Available at: <https://www.greatercambridgeplanning.org/media/1164/sustainability-appraisal.pdf>

Assessment of strategic (non-site specific) spatial options

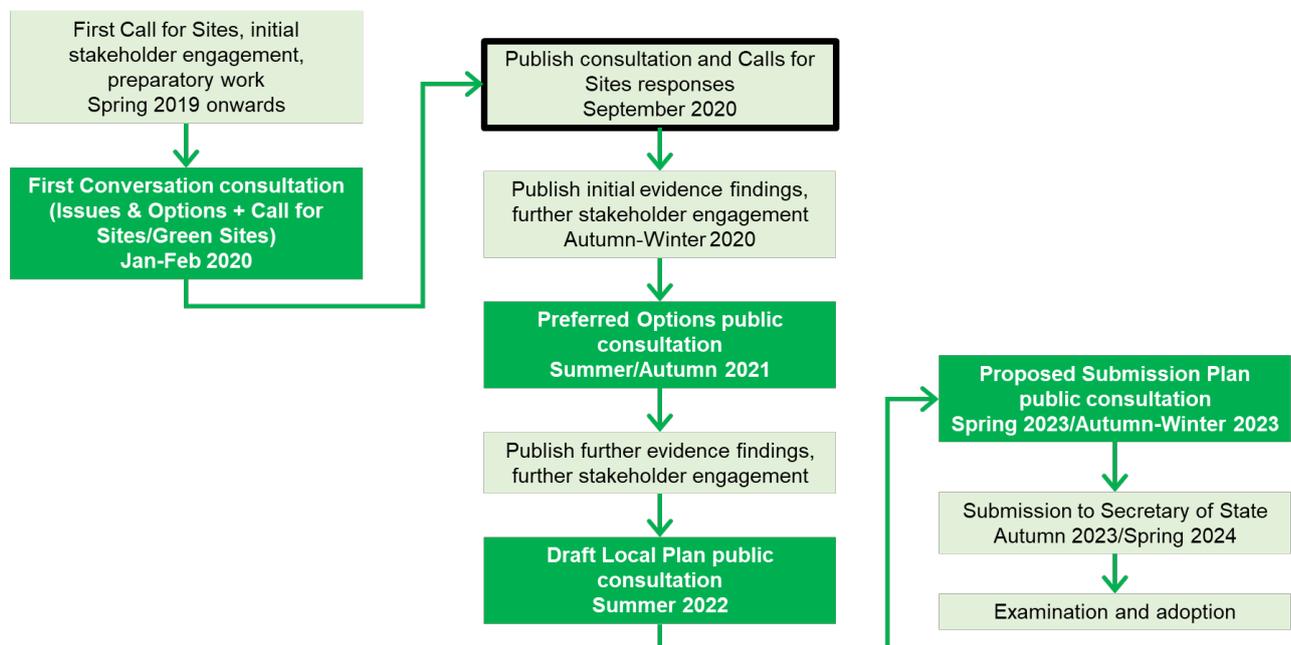
2.7 The Councils completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. A description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.

2.8 The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

2.9 The initial evidence findings will be reported to the Joint Local Plan Advisory Group in autumn 2020, and will help to inform further engagement with stakeholders.

2.10 Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below.

Process of Local Plan preparation



The strategic options

2.11 The three growth level options tested through this report are:

- Minimum – Standard Method homes-led
- Medium – central scenario employment-led

- Maximum – higher employment-led

2.12 The spatial scenarios tested through this report are:

1. Densification of existing urban areas
2. Edge of Cambridge – outside the Green Belt
3. Edge of Cambridge – Green Belt
4. Dispersal – new settlements
5. Dispersal – villages
6. Public transport corridors
7. Supporting a high-tech corridor by integrating homes and jobs
8. Expanding a growth area around transport nodes

Methodology

2.13 The assessment methodology used in this SA Report reflects that set out in the SA Scoping Report⁵ and used in the previous stage of SA, the SA of Issues and Options⁶. This is set out below.

SA, SEA, HIA and EqIA

Sustainability Appraisal

2.14 Sustainability Appraisal is a statutory requirement of the Planning and Compulsory Purchase Act 2004. It is designed to ensure that the plan preparation process maximises the contribution that a plan makes to sustainable development and minimises any potential adverse impacts. The SA process involves appraising the likely social, environmental and economic effects of the policies and proposals within a plan from the outset of its development.

Strategic Environmental Assessment

2.15 Strategic Environmental Assessment (SEA) is also a statutory assessment process, required under the SEA Directive⁷, transposed in the UK by the SEA Regulations (Statutory Instrument 2004, No 1633). The SEA Regulations require the formal assessment of plans and programmes which are likely to have significant effects on the environment and which set the framework for future consent of projects requiring Environmental Impact Assessment (EIA)⁸.

⁵ LUC (2019) Greater Cambridge Local Plan, Sustainability Appraisal Scoping Report. Available at: <https://www.greatercambridgeplanning.org/media/1306/greater-cambridge-local-plan-sustainability-appraisal-scoping-report-2019.pdf>

⁶ LUC (2019) Greater Cambridge Local Plan, Sustainability Appraisal of Issues and Options. Available at: <https://www.greatercambridgeplanning.org/media/1164/sustainability-appraisal.pdf>

⁷ SEA Directive 2001/42/EC

⁸ Under EU Directives 85/337/EEC and 97/11/EC concerning EIA.

The purpose of SEA, as defined in Article 1 of the SEA Directive is “to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans....with a view to promoting sustainable development”.

2.16 SEA and SA are separate processes but have similar aims and objectives. Simply put, SEA focuses on the likely environmental effects of a plan whilst SA includes a wider range of considerations, extending to social and economic impacts. National Planning Practice Guidance shows how it is possible to satisfy both requirements by undertaking a joint SA/SEA process, and to present an SA Report that incorporates the requirements of the SEA Regulations. The SA/SEA of the Greater Cambridge Local Plan is being undertaken using this integrated approach and throughout this report the abbreviation ‘SA’ should therefore be taken to refer to ‘SA incorporating the requirements of SEA’.

Health Impact Assessment

2.17 Health Impact Assessment (HIA) aims to ensure that health-related issues are integrated into the plan-making process. HIA of the Greater Cambridge Local Plan has been integrated into the SA. SA objective 4 considers impacts on health.

Equality Impact Assessment

2.18 The requirement to undertake formal Equalities Impact Assessment (EqIA) of plans was introduced in the Equality Act 2010, but was abolished in 2012. Despite this, authorities are still required to have regard to the provisions of the Equality Act, namely the Public Sector Duty which requires public authorities to have due regard for equalities considerations when exercising their functions. The SA considers whether the Local Plan is likely to disproportionately affect any groups with particular ‘protected characteristics’ under the Equality Act, as well as whether the Local Plan may disproportionately affect any other groups, such as different socio-economic groups. A separate EqIA has been undertaken of the strategic spatial options. SA objective 3 considers impacts on equalities.

SA Framework

2.19 An SA framework was developed as part of the SA Scoping report, setting out the SA objectives against which options and subsequently policies will be appraised. The SA framework provides a way in which the sustainability impacts of implementing a plan can be described, analysed and compared. It comprises a series of sustainability objectives and associated sub-questions that can be used to ‘interrogate’ options and draft policies during the plan-making process. During the SA, the performances of the plan options (and later, policies) are assessed against these SA objectives and sub-questions. A small number of updates have been made to the SA framework since the Scoping Report and Issues and Options SA, to reflect consultation responses received in relation to those documents. The SA objectives themselves have not changed, but some of the sub-questions have been refined. These changes are as follows:

- Question 12.4 has been amended from ‘Does the Plan support public transport?’ to ‘Does the Plan support the growth of public transport networks, modal shift away from private cars and onto public transport, and access to public transport options?’.
- Question 14.5 has been amended from ‘Does the Plan support stronger links to the wider economy of the Oxford-Cambridge Arc?’ to ‘Does the Plan support stronger links to the wider economy of, and contribute to meeting the enhanced level of growth envisaged across, the Oxford-Cambridge Arc?’.

2.20 The SA framework is presented below.

SA Objective 1: Housing

To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home.

Appraisal questions

- SA 1.1: Does the Plan provide for the local housing need of Greater Cambridge?
- SA 1.2: Does the Plan deliver the range of types, tenures that Greater Cambridge needs over the plan period?
- SA 1.3: Does the Plan increase the supply of affordable homes in both urban and rural areas?
- SA 1.4: Does the Plan provide for the housing needs of both an ageing and young population based on locational needs?
- SA 1.5: Does the Plan provide for specialist housing needs, including that of the student population and Gypsies and Travellers?

SA Objective 2: Access to services and facilities

To maintain and improve access to centres of services and facilities including health centres and education.

Appraisal questions

- SA 2.1: Does the Plan support the existing city, district, local, neighbourhood, rural and minor rural centres?
- SA 2.2: Does the Plan provide for sufficient local services and facilities to support new and growing communities (e.g. schools, employment training and lifetime learning facilities, health facilities, sport and recreation, accessible green space and services in local centres)?

- SA 2.3: Does the Plan provide for development within proximity to existing or new services and facilities that are accessible for all?

SA Objective 3: Social Inclusion and Equalities

To encourage social inclusion, strengthen community cohesion, and advance equality between those who share a protected characteristic (Equality Act 2010) and those who do not.

Appraisal Questions

- SA 3.1: Does the Plan facilitate the integration of new neighbourhoods with existing neighbourhoods?
- SA 3.2: Does the Plan promote developments that benefit and are used by existing and new residents in Greater Cambridge, particularly for Greater Cambridge's most deprived areas?
- SA 3.3: Does the Plan meet the needs of specific groups in Greater Cambridge, including those with protected characteristics and the needs of a growing and ageing population?
- SA 3.4: Does the Plan promote the vitality and viability of Greater Cambridge's city, district, local, neighbourhood, rural and minor rural centres through social and cultural initiatives?
- SA 3.5: Does the Plan help to support high levels of pedestrian activity/ outdoor interaction, where people mix?
- SA 3.6: Does the Plan remove or reduce disadvantages suffered by people due to their protected characteristics?

SA Objective 4: Health

To improve public health, safety and wellbeing and reduce health inequalities.

Appraisal questions

- SA 4.1: Does the Plan promote health and wellbeing and encourage healthy lifestyles by maintaining, connecting, creating and enhancing multifunctional open spaces, green infrastructure, and recreation and sports facilities and by providing access to recreational opportunities in the countryside?

- SA 4.2 Does the Plan promote healthy lifestyle choices by encouraging and facilitating walking and cycling, including provision of dedicated cycleways, as well as permeable and legible streets?
- SA 4.3: Does the Plan safeguard human health and well-being by promoting climate change resilience through sustainable siting, design, landscaping and infrastructure, particularly green infrastructure?
- SA 4.4: Does the Plan provide sufficient access to local health services and facilities (e.g. health centres and hospitals)?
- SA 4.5: Does the Plan encourage local food growing?
- SA 4.6: Does the Plan promote mental wellbeing through the design of attractive places and opportunities for social interaction?
- SA 4.7: Does the Plan promote principles of good urban design to limit the potential for crime in Greater Cambridge?
- SA 4.8: Does the Plan contribute to a reduction in the fear of crime?

SA Objective 5: Biodiversity and geodiversity

To conserve, enhance, restore and connect wildlife, habitats, species and/or sites of biodiversity or geological interest.

Appraisal questions

- SA 5.1: Does the Plan avoid adverse effects on internationally and nationally designated biodiversity and geodiversity assets within and outside Greater Cambridge?
- SA 5.2: Does the Plan avoid adverse effects on locally designated biodiversity and geodiversity assets within and outside Greater Cambridge, including ancient woodland?
- SA 5.3: Does the Plan seek to protect and enhance ecological networks, including opportunity areas (buffer and stepping stone opportunities) identified through biodiversity opportunity mapping, promoting the achievement of biodiversity net gain, whilst taking into account the impacts of climate change?
- SA 5.4: Does the Plan provide and manage opportunities for people to come into contact with wildlife whilst encouraging respect for and raising awareness of the sensitivity of biodiversity?

SA Objective 6: Landscape and townscape

To conserve and enhance the character and distinctiveness of Greater Cambridge's landscapes and townscapes, maintaining and strengthening local distinctiveness and sense of place.

Appraisal questions

- SA 6.1: Does the Plan protect and enhance Greater Cambridge's sensitive, special landscapes, such as fens, and historic settlements?
- SA 6.2: Does the Plan protect and enhance Greater Cambridge's natural environment assets (including parks and green spaces, common land, woodland and forest reserves) and public realm?
- SA 6.3: Does the Plan protect the setting of the city of Cambridge, including key views into and out of the city?

SA 7: Historic environment

To conserve and/or enhance the qualities, fabric, setting and accessibility of Greater Cambridge's historic environment.

Appraisal questions

- SA 7.1: Does the Plan conserve and enhance Greater Cambridge's designated heritage assets, including their setting and their contribution to wider local character and distinctiveness?
- SA 7.2: Does the Plan conserve and enhance Greater Cambridge's non-designated heritage assets, including their setting and their contribution to wider local character and distinctiveness?
- SA 7.3: Does the Plan safeguard, and where possible enhance, the historic fabric of the city of Cambridge?
- SA 7.4: Does the Plan provide opportunities for improvements to the conservation, management and enhancement of Greater Cambridge's heritage assets, particularly heritage at risk?
- SA 7.5: Does the Plan promote access to, as well as enjoyment and understanding of, the local historic environment for Greater Cambridge's residents and visitors?

SA 8: Efficient use of land

To make efficient use of Greater Cambridge’s land resources through the re-use of previously developed land and conserve its soils.

Appraisal questions

- SA 8.1: Does the Plan maximise the provision of housing and employment development on previously developed land?
- SA 8.2: Does the Plan ensure contaminated land is remediated where appropriate?
- SA 8.3: Does the Plan minimise the loss of best and most versatile agricultural land to development?

SA 9: Minerals

To conserve mineral resources in Greater Cambridge.

Appraisal questions

- SA 9.1 Does the Plan ensure that unnecessary or unjustified sterilisation of mineral resources is prevented?

SA 10: Water

To achieve sustainable water resource management and enhance the quality of Greater Cambridge’s waters.

Appraisal questions

- SA 10.1: Does the Plan ensure there is sufficient water to serve new growth for the lifetime of the development in a changing climate without negatively impacting on the environment?
- SA 10.2: Does the Plan seek to improve the water quality of Greater Cambridge’s rivers and water bodies?
- SA 10.3: Does the Plan minimise inappropriate development in Source Protection Zones?
- SA 10.4: Does the Plan ensure there is sufficient waste water treatment infrastructure and environmental capacity to accommodate the new development in a changing climate?

- SA 10.5: Does the Plan promote development which would avoid water pollution due to contaminated runoff from development?
- SA 10.6: Does the Plan support efficient use of water in new developments, including the recycling of water resources, promoting water stewardship and water sensitive design where appropriate?

SA 11: Adaptation to climate change

To adapt to climate change, including minimising flood risk.

Appraisal questions

- SA 11.1: Does the Plan minimise inappropriate development in areas prone to flood risk and areas prone to increasing flood risk elsewhere, taking into account the impacts of climate change?
- SA11.2: Does the Plan promote the use of Natural Flood Management schemes, SuDS and flood resilient design?
- SA11.3: Does the Plan promote design measures in new development and the public realm to respond to weather events arising from climate change, such as heatwaves and intense rainfall?
- SA 11.4: Does the Plan provide, enhance and retrofit green infrastructure?

SA 12: Climate change mitigation

To minimise Greater Cambridge's contribution to climate change

Appraisal questions

- SA 12.1: Does the Plan promote energy efficient design?
- SA 12.2: Does the Plan encourage the provision of energy from renewable sources?
- SA 12.3: Does the Plan promote the use of locally and sustainably sourced, and recycling of, materials in construction and renovation?
- SA 12.4: Does the Plan support the growth of public transport networks, modal shift away from private cars and onto public transport, and access to public transport options?
- SA 12.5: Does the Plan create, maintain and enhance attractive and well-connected networks of public transport and active travel, including walking and cycling?

- SA 12.6: Does the Plan support development which is in close proximity to city, district and rural centres, services and facilities, key employment areas and/or public transport nodes, thus reducing the need to travel by car?
- SA12.7: Does the Plan address congestion hotspots in the road network?

SA 13: Air quality

To limit air pollution in Greater Cambridge and ensure lasting improvements in air quality.

Appraisal questions

- SA 13.1: Does the Plan avoid, minimise and mitigate the effects of poor air quality?
- SA 13.2: Does the Plan promote more sustainable transport and reduce the need to travel?
- SA 13.3: Does the Plan contain measures which will help to reduce congestion?
- SA 13.4: Does the Plan minimise increases in traffic, particularly non-electric vehicles, in Air Quality Management Areas?
- SA 13.5: Does the Plan facilitate the take up of low / zero emission vehicles?

SA 14: Economy

To facilitate a sustainable and growing economy.

Appraisal questions

- SA 14.1: Does the Plan provide for an adequate supply of land and the delivery of infrastructure to meet Greater Cambridge's economic and employment needs?
- SA 14.2: Does the Plan support opportunities for the expansion and diversification of businesses?
- SA 14.3: Does the Plan provide for start-up businesses and flexible working practices?
- SA 14.4: Does the Plan support the prosperity and diversification of Greater Cambridge's rural economy?
- SA 14.5: Does the Plan support stronger links to the wider economy of, and contribute to meeting the enhanced level of growth envisaged across, the Oxford-Cambridge Arc?

- SA 14.6: Does the Plan support the growth of the knowledge, science, research and high tech sectors?

SA 15: Employment

To deliver, maintain and enhance access to diverse employment opportunities, to meet both current and future needs in Greater Cambridge.

Appraisal questions

- SA 15.1: Does the Plan provide for employment opportunities that are easily accessible, preferably via sustainable modes of transport?
- SA 15.2: Does the Plan support equality of opportunity for young people and job seekers?

Appraisal Methodology

2.21 The findings of the SA are presented as colour coded symbols showing a score for each option against each of the SA objectives along with a concise justification for the score given, where appropriate. The use of colour coding and symbols allows for likely significant effects (both positive and negative) to be easily identified, as shown in Figure 2.1 below.

Figure 2.1: Key to symbols and colour coding used in the SA of the Greater Cambridge Local Plan

++	Significant positive effect likely
++/-	Mixed significant positive and minor negative effects likely
+	Minor positive effect
+/- or ++/--	Mixed minor effects likely or mixed significant effects likely
-	Minor negative effect likely
--/+	Mixed significant negative and minor positive effects likely
--	Significant negative effect likely
0	Negligible effect likely
?	Likely effect uncertain

2.22 Due to the high level nature of options assessed at this stage, all potential effects identified are uncertain. Where this uncertainty is considered to be particularly significant, a question mark is added to the relevant score (e.g. +? or -?) and the score has been colour coded as per the potential positive, negligible or negative effect (e.g. green, blue, orange, etc.).

2.23 The likely effects of options need to be determined and their significance assessed, which inevitably requires a series of judgments to be made. The appraisal has attempted to differentiate between the most significant effects and other more minor effects through the use of the symbols shown above. The dividing line in making a decision about the significance of an effect is often quite small. Where either (++) or (--) has been used to distinguish significant effects from more minor effects (+ or -) this is because the effect of an option on the SA objective in question is considered to be of such magnitude that it will have a noticeable and measurable effect taking into account other factors that may influence the achievement of that objective. However, scores are relative to the scale of proposals under consideration.

2.24 Despite the broad nature of the strategic spatial options, the assessment has sought to bring out differences between them, where possible. However, as explained below in 'Difficulties Encountered', the options overlap in terms of sources of supply. The assessment has taken a fairly precautionary approach, in that if negative effects are identified in relation to a particular source of supply, this has been reflected in the overall score for the option. In addition, whilst many of the negative effects identified could potentially be partially or fully mitigated, mitigation measures have not been taken into account, due to the uncertainty at this stage of such measures coming forward and in order to highlight likely negative effects that the plan should address through policy. Nevertheless, the assessment has also sought to highlight the potential opportunities sources of supply could bring, e.g. it has been assumed that larger developments have more scope for incorporating green infrastructure. For each SA objective we have sought to identify a best performing option.

2.25 The SA has also drawn on LUC's work on sustainable settlement sizes to help distinguish between options. We have assumed that developments nearing the minimum size for a new settlement to be sustainable (around 4,500 homes) are likely to provide new services and facilities. We have also assumed that if those developments will not reach such a size within the plan period, only limited provision of new services and facilities may be made until the sources of supply are fully built out.

2.26 The SA has sought to distinguish between effects occurring within the plan period and when sites are fully built out. However, for Options 3 (Edge of Cambridge – Green Belt) and 5 (Dispersal – villages), there will be no further planned development beyond the plan period, i.e. sources of supply will be fully built out within the plan period. As such, no assessment of these was made or scores recorded for the 'all time' scenario. However, this does not mean that development will not take place beyond the plan period, but decisions about how much and where this development would be left to future reviews of the Local Plan.

2.27 The SA has been informed by a review of the options by those preparing other evidence base documents, where appropriate. This includes taking into account comments relating to the following:

- Greater Cambridge Local Plan strategic spatial options assessment: Water Management (November 2020).
- Greater Cambridge Local Plan strategic spatial options assessment: Habitats Regulations Assessment (HRA) (November 2020).
- Greater Cambridge Local Plan strategic spatial options assessment: Landscape (November 2020).
- Greater Cambridge Local Plan strategic spatial options assessment: Employment (November 2020).
- Greater Cambridge Local Plan strategic spatial options assessment: Housing Delivery (November 2020).
- Greater Cambridge Local Plan strategic spatial options assessment: Infrastructure (November 2020).
- Greater Cambridge Local Plan strategic spatial options assessment: Transport (November 2020).

- Greater Cambridge Local Plan strategic spatial options assessment: Green Infrastructure (November 2020).
- Greater Cambridge Local Plan strategic spatial options assessment: Equalities Impact Assessment (EqIA) (November 2020).
- Greater Cambridge Local Plan strategic spatial options assessment: Zero Carbon Study (November 2020).

2.28 From here on, these documents are referred to as the ‘Water Management Study’, ‘HRA Study’, ‘Landscape Study’ and so on

Difficulties Encountered

2.29 It is a requirement of the SEA Regulations that consideration is given to any data limitations or other difficulties that are encountered during the SA process. The strategic spatial options are fairly broad options regarding the spatial distribution of development and do not allocate particular sites for development. As such, this document has sought to flag where these options have potential to result in significant effects, but the actual effects will depend on the exact location, layout and design of developments. Once the Councils have identified more detailed site and policy options it will be possible to draw more certain conclusions about their likely sustainability effects. Note that the preferred option may take elements from a number of these strategic spatial options.

2.30 Because many effects of development are dependent on the exact location, layout and design of development, it may be possible to mitigate some of the effects highlighted in this SA. However, given the inherent uncertainties about these details at this strategic stage of planning and assessment, the SA focuses on identifying potential significant effects of the options considered, whilst making no assumptions about detailed design or mitigation matters.

2.31 Many of the strategic spatial options cannot meet the full housing need through the focus source of supply (identified by the name of the spatial option) and therefore require additional sources of supply. This has led to substantial overlap between some of the options. For example, many include at least one new settlement and this has therefore resulted in similar effects being identified in relation to this.

2.32 The SA of the options has been undertaken using available evidence. There may be gaps in this evidence base that, where possible, will be filled as information and data to inform the Local Plan preparation process continues. For example:

- The need for further investment in infrastructure (e.g. transport, water), services and facilities are likely to be identified in more detail once options for development are firmed up, which may address some of the issues identified in the SA at this early stage of the process.
- There could be undiscovered archaeological features at any location within Greater Cambridge. For the purposes of this SA, we have focused on assessing the likely effects of development on known heritage assets, but further archaeological work may be necessary prior to any development in order to avoid loss of archaeological resources.

- The rate at which emissions from private vehicles will change over the course of the plan period as a result of technological improvements cannot be predicted or realistically factored into judgements about air quality.

Chapter 3

Assessment of Strategic Spatial Options

Introduction

3.1 This chapter presents the SA findings of the strategic spatial options set out in the document 'Greater Cambridge Local Plan: strategic spatial options for testing – methodology' (the methodology document). The assessments focus on the description of options set out in section 3 of the methodology document. There are eight options in total:

1. Densification of existing urban areas
2. Edge of Cambridge - outside the Green Belt
3. Edge of Cambridge – Green Belt
4. Dispersal - new settlements
5. Dispersal - villages
6. Public transport corridors
7. Supporting a high-tech corridor by integrating homes and jobs
8. Expanding a growth area around transport nodes

3.2 Note that Options 1 to 6 were assessed at a high level in the SA of Issues and Options⁹ (2019). At the time of the Issues and Options assessment, options did not include as much detail regarding sources of supply and additional sources of supply had not been identified. As such, assessment was limited to the principles of distributing development according to each option.

3.3 For each option, there are three growth scenarios: minimum, medium, maximum.

A summary of each option is provided in the box below

⁹ LUC (2019) Greater Cambridge Local Plan, Sustainability Appraisal of Issues and Options. Available at:

<https://www.greatercambridgeplanning.org/media/1164/sustainability-appraisal.pdf>

Spatial option 1: Densification of existing urban areas

This option focuses new homes within Cambridge, the main sources of supply are the brownfield site at North East Cambridge and development within the urban area which would meet the minimum needs. To meet the medium growth figures density would increase in the urban area and additional sites including Cambridge Airport and a site/broad location in the Green Belt would be required. To meet the maximum growth figures development within the urban area and at North East Cambridge and Cambridge Airport would be developed at higher densities and delivery rates.

Spatial option 2: Edge of Cambridge - outside Green Belt

This option focuses new homes in extensions on the edge of Cambridge at Cambridge Airport. North East Cambridge and one village site are required to make up the balance to meet the minimum growth figure. To meet the medium growth figure there needs to be additional development of two smaller new settlements on public transport corridors and growth at a range of rural centres and minor rural centres outside the Green Belt. To meet the maximum growth figures, the Airport will come forward at higher delivery rates, together with North East Cambridge and two new settlements (one smaller, one large) on public transport corridors also at increased delivery rates.

Spatial option 3: Edge of Cambridge - Green Belt

This option focuses new homes in extensions on the edge of the city and will involve the release of Green Belt land. To meet the minimum need three sites/broad locations would be required. To meet the medium growth figures, five edge of Cambridge sites/broad locations would be required together with additional limited development within the Cambridge urban area. To meet the maximum growth figures, five edge of Cambridge sites/broad locations are required all to be delivered at high delivery rates.

Spatial option 4: Dispersal - new settlements

This option establishes new towns and villages providing homes, jobs and associated infrastructure. To meet the minimum need two smaller settlements on public transport corridors are required. To meet the medium growth figures two larger new settlements and one smaller new settlement are required on public transport corridors and a further smaller new settlement on the road network. To meet maximum growth figures the same as the medium scenario is required but delivered at higher delivery rates.

Spatial option 5: Dispersal - villages

This option spreads new homes to the villages. To meet the minimum, medium and maximum need, growth will be distributed as follows:

- 40% at Rural Centres
- 40% at Minor Rural Centres
- 17% at Group villages
- 3% at infill villages

Spatial option 6: Public transport corridors

This option focuses homes along public transport corridors around transport hubs. The supply to meet the minimum needs are North East Cambridge, a small new settlement on a public transport corridor, and the balance spread across 18 villages sited long existing or proposed public transport corridors. To meet the medium growth figures, North East Cambridge, and a large new settlement on a public transport corridor is required, with the balance again spread across the 18 villages. To meet the maximum growth figures the distribution is the same as medium except all delivered at higher delivery rates.

Spatial option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

This option focuses new homes close to existing and committed jobs around the south of Cambridge. The sources of supply to meet the minimum needs are one smaller new settlement on a public transport corridor within the southern cluster and the balance equally distributed between the five villages in the core southern cluster and also on a public transport corridor. To meet medium growth figures the distribution is as above with further villages included that are within the Southern Cluster but not in public transport corridors. To meet the maximum growth figures one large new settlement on a public transport corridor in the south is required with less growth spread equally across the five southern villages. This option then adds the Airport and North East Cambridge to make up the numbers all of which are provided at higher delivery rates.

Spatial option 8: Expanding a growth area around transport nodes

This option focuses homes at Cambourne and along the A428 public transport corridor as a response to a new East West Rail station and Cambridge Autonomous Metro. To meet the minimum needs Cambourne will be expanded by equivalent of a small new settlement (4,500 total, when fully built out), and the balance spread across three villages on the A428. To meet medium growth figures a further four minor rural centres/group villages within 5km of Cambourne are required. In addition, North East Cambridge will also be developed. To meet the maximum growth figures there will be greater expansion of Cambourne by the equivalent of a larger new settlement (9,000 total, when fully built out) together with growth spread across three villages on A428, one Minor Rural Centre and three Group villages within 5km of Cambourne all at higher delivery rates. In addition, Cambridge Airport and North East Cambridge are required at higher delivery rates.

3.4 Elements of a number of these options could be taken forward when developing a preferred option. However, as this is uncertain, each has been appraised on its own merits, against each SA objective.

3.5 For each SA objective, the likely effects of each option under minimum, medium and maximum scenarios has been assessed with regards to both the level of development likely to come forward within the plan period ('Housing provision between 2020-2041') and when development sites are fully built out ('Housing provision when fully built out ('all time'))).

3.6 The SA does not, at this stage, identify or evaluate the potential effects of relocating Cambridge Airport. It is possible that that the current airport activity could be transferred to another operational airport elsewhere, possibly outside the Greater Cambridge area. Similarly, the SA does not identify or evaluate the potential effects of relocating the wastewater treatment works at North East Cambridge. It is likely that this will be relocated within South Cambridgeshire, but the exact location is unknown. The provision of a new treatment works will be considered through the Development Consent Order process.

Appraisal Results

SA Objective 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal - new settlements	5. Dispersal - villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-?	++?	++?	+	++?	++?	++?	++?
Medium Growth	++?	++?	++	+	++?	++?	++?	++
Maximum Growth	++?	++?	++?	+	++?	++?	++?	++?

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Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal - new settlements	5. Dispersal - villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-?	++?		++?		++?	++?	++?
Medium Growth	++	++		++		++	++	++
Maximum Growth	++	++		++		++	++	++

3.7 It is noted that the options have been compiled to ensure that sufficient housing would be provided under each of the minimum, medium and maximum growth scenarios.

1. Densification of existing urban areas

3.8 Option 1 would result in an increase in the density of development, particularly within Cambridge, where demand is high – especially from young professionals, and North East Cambridge. This could involve the development of taller buildings, as well as the development of underused land or possibly open space. However, this may result in a high proportion of flats and therefore may not provide as large a range of housing types. The Housing Delivery Study – Interim Findings and Spatial Options Commentary also notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. This is particularly true for the minimum scenario. As the medium and maximum scenarios would provide housing from Cambridge Airport, and for the medium scenario one edge of Cambridge Green Belt site, they could include larger developments with a greater range of housing types. However, those additional sources of supply, such as edge of Cambridge sites and committed new settlements, could result in a lower level of affordable housing provision due to greater costs to deliver additional infrastructure. The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests the maximum growth scenario may not be deliverable within the plan period, resulting in uncertainty for this scenario.

3.9 Overall, mixed significant positive and minor negative effects are expected for the minimum growth scenario, whereas significant positive uncertain effects are expected for the medium and maximum growth scenarios.

3.10 When fully built out, scores are expected to remain the same, although any uncertainty is removed because the full housing requirement will be delivered. Uncertainty is recorded for the minimum growth scenario as it does not reflect the outcome of economic forecasting in the Employment Land Review. .

2. Edge of Cambridge – outside the Green Belt

3.11 The focus of this option is Cambridge Airport, which could provide a substantial number of homes (although additional sources of supply are needed to meet housing needs) but is unlikely to be delivered until after 2030. Nevertheless, the additional sources of supply, such as North East Cambridge, a village site for the minimum growth scenario and rural centres and minor rural centres for the medium growth scenario, could come forward earlier in the plan period. As such, significant positive effects are expected under the minimum growth scenario.

3.12 For the medium and maximum growth scenarios, additional sources of supply include new settlements (along with growth in North East Cambridge and in the rural centres and minor rural centres for medium growth). This could result in a lower level of affordable housing provision due to greater costs to deliver additional infrastructure and would likely have a substantial lead in time. The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests the maximum growth scenario may not be deliverable within the plan period, resulting in uncertainty for this scenario.

3.13 The Housing Delivery Study – Interim Findings and Spatial Options Commentary also notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment

works. As such, significant positive uncertain effects are recorded against these two scenarios. Uncertainty is recorded for the minimum growth scenario as it does not reflect the outcome of economic forecasting in the Employment Land Review. .

3.14 When fully built out, scores are expected to remain the same, although uncertainty is removed for the medium and maximum growth scenarios, because the full housing requirement will be delivered.

3. Edge of Cambridge – Green Belt

3.15 Option 3 would provide sufficient housing and may lead to a more diverse range of housing types than Option 1, due to the larger area available for development at edge of Cambridge sites in the Green Belt. However, this option could result in a lower level of affordable housing provision due to the costs required to deliver upfront infrastructure (although this would not apply to growth in the Cambridge urban area, which is included in the medium growth scenario). As such, significant positive effects are expected for all scenarios. Uncertainty is recorded for the minimum growth scenario as, if the Councils' plans for minimum growth but the economy grows faster than accounted for, there may be a shortfall in housing provision. Uncertainty is also recorded for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period.

3.16 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

3.17 Option 4 could result in a lower level of affordable housing provision due to the costs required to deliver upfront infrastructure. In addition, the development of new settlements is likely to have a long lead-in time, meaning the full housing requirement may not be delivered until later in the plan period. Relying solely on new settlements to provide housing could risk shortfalls in housing coming forward over the plan period. The minimum growth scenario has additional uncertainty as it does not reflect the outcome of economic forecasting in the Employment Land Review. . Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period.

3.18 As such, minor positive uncertain effects are expected for all options for 2020-2041.

3.19 When fully built out, all options are expected to have significant positive effects as it is expected housing needs would be met at this point.

5. Dispersal - villages

3.20 Option 5 may be less likely to deliver affordable housing or a range of housing types because of the smaller scale of the schemes involved affecting viability, although this depends on the size of any developments coming forward under this option, as mid-sized schemes are often more able to provide affordable housing. Development may come forward more quickly than other options, due to the shorter lead in times associated with smaller scale development.

Additional uncertainty is identified for the minimum growth scenario as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period. As such, significant positive uncertain effects are expected for all growth scenarios.

3.21 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.22 All growth scenarios include growth at North East Cambridge, a new settlement on a public transport corridor and growth at additional villages. New settlements may provide less affordable housing, due to upfront infrastructure costs, and will have a longer lead in time, leading to some uncertainty earlier in the plan period. However, as the options also include growth at North East Cambridge and villages, this is likely to be somewhat balanced out by the other sources of supply. The Housing Delivery Study – Interim Findings and Spatial Options Commentary also notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. Additional uncertainty is identified for the minimum growth scenario as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period.

3.23 As such, significant positive effects with uncertainty are expected for all options.

3.24 When fully built out, scores are expected to remain the same, although uncertainty is removed for the medium and maximum options because the full housing requirement will be delivered.

7. Supporting a high-tech corridor by integrating homes and jobs

3.25 All growth scenarios include a new settlement along with development at a number of villages. New settlements may provide less affordable housing, due to upfront infrastructure costs, and will have a longer lead in time, leading to some uncertainty earlier in the plan period. However, providing the balance of development at southern villages (and partly at North East Cambridge and Cambridge Airport, for the high growth scenario) may somewhat balance this. The Housing Delivery Study – Interim Findings and Spatial Options Commentary notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. The minimum growth scenario has additional uncertainty as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period.

3.26 All scenarios are expected to have significant positive effects, with uncertainty.

3.27 When fully built out, scores are expected to remain the same, although any uncertainty is removed for the medium and maximum scenarios because the full housing requirement will be delivered.

8. Expanding a growth area around transport nodes

3.28 This option is expected to result in large-scale growth at Cambourne, along with some smaller development. For the minimum growth scenario, development is expected to be focused primarily at a large-scale development, which may provide less affordable housing, due to upfront infrastructure costs, and will have a longer lead in time, leading to some uncertainty earlier in the plan period. All scenarios also include some growth at more rural settlements, which may help ensure some growth comes forward earlier in the plan period. The medium and maximum growth scenarios also include large-scale growth at Cambourne, but also include North East Cambridge, which adds another source of growth and may therefore be more likely to provide sufficient housing earlier in the plan period. The Housing Delivery Study – Interim Findings and Spatial Options Commentary also notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. However, the maximum scenario also includes Cambridge Airport, which is not likely to come forward until after 2030.

3.29 The minimum growth scenario has additional uncertainty as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period. Overall, significant positive effects are expected for all growth scenarios, with uncertainty related to the minimum and maximum growth scenarios.

3.30 When fully built out, scores are expected to remain the same, although uncertainty is removed for the maximum growth scenario, because the full housing requirement will be delivered.

Best performing option

3.31 As all growth scenarios are expected to deliver the full housing need within the plan period, it is not possible to distinguish a best performing option. Options that include a more diverse range of housing supply are associated with more certainty, as it is less likely that housing delivery will be skewed towards the end of the plan period. The minimum growth scenario for Option 1 'Densification of existing urban areas' and all growth scenarios for Option 4 'Dispersal – new settlements' perform least well, as they may not result in the necessary range of housing types or sufficient housing coming forward until later in the plan period. This is particularly the case for Option 4, given its reliance solely on new settlements to deliver housing supply.

3.32 The Housing Delivery Study – Interim Findings and Spatial Options Commentary raises particular uncertainty around the maximum growth scenario, as it suggests this scenario may not be deliverable within the plan period. The minimum growth scenario has additional uncertainty as, it does not reflect the outcome of economic forecasting in the Employment Land Review.

SA objective 2: To maintain and improve access to centres of services and facilities including health centres and education

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+	+	+?	+/-?	--/+	+/-	+/-?	+?
Medium Growth	+/-	+/-?	+/-?	+/-?	--/+	+/-	+/-?	+/-?
Maximum Growth	++/-	+/-?	++/-?	++/-?	--/+?	++/-	++/-?	++/-?

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	++		++		++/-	++/-?	++?
Medium Growth	++/-	++/-?		++		++/-	++/-?	++/-?
Maximum Growth	++/-	++/-?		++		++/-	++/-	++/-?

1: Densification of existing urban areas

3.33 Option 1 would result in an increase in the density of development, particularly within Cambridge. There are already a number of services and facilities in Cambridge; therefore new development is more likely to be in close proximity to these. However, an increase in the density of the city could place increased strain and pressure on these services and facilities, as they may not have capacity to accommodate the additional growth, reducing people's overall accessibility to them. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity.

3.34 The minimum growth scenario includes North East Cambridge, which will provide new services and facilities, as well as low growth in the urban area. As such, this scenario will put less pressure on existing services and facilities. The medium and maximum growth scenarios also include North East Cambridge but may put more pressure on local services and facilities, due to the increased density of development in the Cambridge urban area. In addition, growth on the edge of Cambridge (including Cambridge Airport for both the medium and maximum scenarios and an edge of Cambridge Green Belt site for the medium scenario) would be well-located for (although potentially put pressure on) accessing services and facilities within the city. Whilst both are also likely to include larger developments that may provide new services and facilities, these would be located outside of Cambridge and therefore would not be able to fully mitigate the effects of higher densities in the urban area.

3.35 The Infrastructure Study suggests that large sites such as North East Cambridge and Cambridge Airport will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

3.36 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport.

3.37 For 2020-2041, the minimum growth scenario is expected to result in minor positive effects and the medium growth scenario is expected to result in mixed minor positive and minor negative effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

3.38 The maximum growth scenario is expected to have mixed significant positive and minor negative effects for both the plan period and when fully built out.

2: Edge of Cambridge – outside the Green Belt

3.39 Option 2 focuses on development of Cambridge Airport, which is expected to be of sufficient scale to provide a mixed development incorporating a good range of services and

facilities. It also has good accessibility to the city and nearby suburbs (e.g. Cherry Hinton), where additional services and facilities are located, although the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. All growth scenarios also include North East Cambridge, which is also expected to provide new services and facilities.

3.40 The medium and maximum growth scenarios include development of new settlements, which are expected to provide new services and facilities, particularly larger settlements. However, all new settlements are expected to be of a size where they are largely self-sufficient for meeting people's day to day needs. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability. The minimum growth scenario includes a village site and the medium growth scenario includes development at rural centres and minor rural centres, which may help ensure the continued vitality and viability of these centres, although there is a risk that a larger amount of development at any one rural settlement could lead to increased pressure on services and facilities.

3.41 The Infrastructure Study suggests that large sites such as new settlements, North East Cambridge and Cambridge Airport will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

3.42 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at new settlements North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport or the new settlements.

3.43 For 2020-2041, the minimum growth scenario is expected to result in minor positive effects and the medium and maximum growth scenarios are expected to result in mixed minor positive and minor negative uncertain effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

3. Edge of Cambridge – Green Belt

3.44 Option 3 would see the creation of new homes and jobs in extensions on the edge of Cambridge, which is likely to result in provision of new services and facilities, although the range of services and facilities provided at particular development locations will likely depend on the size of the extension. Smaller extensions, which are more likely to come forward under the minimum and medium growth options, due to the lower level of overall growth, may provide a more limited range of services and would place greater reliance on existing services and facilities in the city, but, as with Option 1, could lead to existing facilities becoming over-capacity, or may not be well located to existing services and facilities. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. This is likely to be a lower risk in the minimum growth scenario (depending on the services and facilities provided at urban extensions), due to the lower level of growth on the edge of Cambridge. The medium scenario includes a small level of growth in the Cambridge urban area,

which would be well located for accessing services and facilities and, due to the low level of growth may not put much additional pressure on these. However, both medium and maximum growth scenarios are more likely to put pressure on existing facilities due to utilising all estimated capacity on the edge of Cambridge. In addition, phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability.

3.45 For 2020-2041, the minimum growth scenario is expected to have minor positive uncertain effects, the medium growth scenario is expected to have mixed minor positive and minor negative uncertain effects and the maximum growth scenario is expected to have a mixed significant positive and minor negative effect with uncertainty.

3.46 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

3.47 The creation of new settlements as set out in Option 4 provides an opportunity for significant new infrastructure to be delivered, such as schools, health facilities, local centres and green spaces, but it would be starting from scratch. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability.

3.48 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

3.49 The Infrastructure Study suggests that large sites such as new settlements will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

3.50 For 2020-2041, the minimum and medium growth scenarios are expected to result in mixed minor positive and minor negative uncertain effects and the maximum growth scenario is expected to result in mixed significant positive and minor negative uncertain effects. Significant positive effects are expected for all scenarios when fully built out, as they are expected to provide services and facilities to meet day-to-day needs of residents.

5. Dispersal – villages

3.51 Option 5 would result in an increase in development at villages across Greater Cambridge. This increase would support existing services and facilities at these villages, but could also place increased pressure on them, as they may not have capacity to accommodate the additional growth, reducing people's overall accessibility to them in the long-run. Indeed, villages are likely to have a more limited range of facilities than the city centre or new settlements.

3.52 Therefore, Option 5 is expected to have a mixed minor positive and significant negative effect against this objective for all growth scenarios. There is uncertainty associated with the maximum scenario, as development, particularly in the rural centres, may reach a critical mass at which it will result in provision of some new services and facilities.

3.53 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.54 Option 6 would result in development along key public transport corridors. This development could have good access to services and facilities elsewhere, due to their proximity to public transport hubs.

3.55 All growth scenarios include development at North East Cambridge, which will provide new services and facilities, as well as being in close proximity to existing facilities within Cambridge city. In addition, provision of a small amount of additional housing at 18 villages may help ensure the viability of existing services and facilities in those villages. However, development at villages could also place increased pressure on them, as they may not have capacity to accommodate the additional growth, reducing people's overall accessibility to them in the long-run. The creation of new settlements would also likely require supporting transport infrastructure that connected it to Cambridge, which would require large-scale investment and time to implement. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability.

3.56 The Infrastructure Study suggests that large sites such as new settlements and North East Cambridge will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

3.57 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at these locations is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

3.58 For 2020-2041, the minimum and medium growth scenarios are expected to result in mixed minor positive and minor negative effects and the maximum growth scenario is expected to result in mixed significant positive and minor negative effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities..

7. Supporting a high-tech corridor by integrating homes and jobs

3.59 This option will help to ensure housing is well-located with regard to existing centres of employment. In addition, all scenarios include some growth at the Southern Cluster villages, which have some services and facilities, including schools and doctors surgeries, particularly in

Great Shelford, Sawston and Linton, although it is uncertain what capacity these have to accommodate growth.

3.60 All growth options include a new settlement (the minimum and medium growth scenarios in particular would deliver a high proportion of growth through a new settlement). New settlements provide an opportunity for significant new infrastructure to be delivered. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability or services and facilities not coming forward until later in the plan period. It is noted that these new settlements and growth at villages is to be focused along public transport corridors, which is likely to help residents access a greater range of services and facilities within Cambridge. The medium and maximum growth scenarios also include North East Cambridge and the maximum growth scenario includes Cambridge Airport, which are also expected to provide new facilities.

3.61 The Infrastructure Study suggests that large sites such as new settlements, North East Cambridge and Cambridge Airport will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

3.62 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at new settlements is likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs, although there is a less certainty on this with regards to Cambridge Airport.

3.63 For 2020-2041, the minimum and medium growth scenarios are expected to result in mixed minor positive and minor negative effects and the maximum growth scenario is expected to result in mixed significant positive and minor negative uncertain effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

8. Expanding a growth area around transport nodes

3.64 This option focuses on expanding Cambourne in anticipation of a new railway station and the Cambridgeshire Autonomous Metro. However, it is uncertain whether these will come forward within the plan period, particularly the railway link. Cambourne already includes a number of services and facilities to meet day to day needs, and further large-scale development is likely to support provision of additional services and facilities. Delivery of a new rail station and Cambridge Autonomous Metro at Cambourne would provide good access to Cambridge and also likely other large settlements outside Greater Cambridge, therefore giving access to a wider range of services and facilities. However, there is some uncertainty regarding when these will come forward, which could leave residents with less access to services and facilities further afield, at least early in the plan period.

3.65 The medium and maximum growth scenarios both North East Cambridge and the maximum scenario includes growth at Cambridge Airport, which will themselves provide new

services and facilities and are in relatively close proximity of existing facilities within Cambridge. However, all options also include some development distributed between villages along the A428 and, for the medium and maximum scenarios, minor rural centres/group villages, which are likely to have a lower level of access to services and facilities.

3.66 The Infrastructure Study suggests that large sites such including large-scale growth at Cambourne, North East Cambridge and Cambridge Airport will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

3.67 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of the large expansion of Cambourne (and, for the medium scenario, at North East Cambridge) between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, large-scale growth at Cambourne and North East Cambridge is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport.

3.68 For 2020-2041, the minimum growth scenario is expected to have minor positive uncertain effects. The medium growth scenario is expected to result in mixed minor positive and minor negative uncertain effects and the maximum growth scenario is expected to result in mixed significant positive and minor negative uncertain effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

Best performing option

3.69 Those options that are expected to result in larger developments, such as new settlements (included in Options 2 'Edge of Cambridge – Green Belt', 4 'Dispersal – new settlements', 6 'Public transport corridors' and 7 'Supporting a high-tech corridor by integrating homes and jobs') perform well, particularly when fully built out, as they are expected to provide new services and facilities to meet development needs. Option 8 'Expanding a growth area around transport nodes' also performs well when fully built out, as it includes extensions to Cambourne of an equivalent size to a new settlement, which will likely provide new services and facilities as well as having access to existing infrastructure in Cambourne. Options including development in and around Cambridge, including Options 1 'Densification of existing urban areas', 2 'Edge of Cambridge – Green Belt' and 3 'Edge of Cambridge – Green Belt') are expected to have good accessibility to existing services and facilities within Cambridge, although they could also put pressure on these beyond their capacity. The minimum growth scenario and maximum growth scenario generally perform better than the medium scenario, as the minimum scenario will put less pressure on existing facilities whereas the maximum scenario is more likely to result in the critical mass of development required to provide new services and facilities.

3.70 Option 5 'Dispersal – villages' performs least well as this option is most likely to put pressure on existing services and facilities and result in development that is less likely to provide new services and facilities, whilst being more distant from larger centres.

SA Objective 3: To encourage social inclusion, strengthen community cohesion, and advance equality between those who share a protected characteristic (Equality Act 2010) and those who do not.

Housing provision between 2020-2041

Strategic spatial options / Growth scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-	+/-	+/-	+/-	+/-?	+?	+	+?
Medium Growth	+/-	+/-	+/-	+/-	+/-?	+?	+	+?
Maximum Growth	+/-	++/-	++/-	++/-?	+/-?	++?	++?	+?

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Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-	++		++/-		++?	++	++?
Medium Growth	++/-	++		++/-		++?	++	++?
Maximum Growth	++/-	++/-		++/-		++?	++	++?

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1. **Densification of existing urban areas**

3.71 Option 1 would result in an increase in the density of development in Cambridge, and therefore an increase in population. Residents would have good access to services and facilities, which would improve equalities by benefitting those with protected characteristics (Equality Act 2010), particularly those who are less mobile, such as the elderly or disabled, and could strengthen inclusivity and community cohesion. However, the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. Development in the urban area is also likely to mean housing is closer to facilities such as nurseries, schools and places of worship. However, concentrating development in urban areas could benefit younger people, who tend to live in the urban area, rather than older people, who tend to live in more rural parts of the plan area, as there would be limited investment in services and facilities in more rural areas. The EqIA states that growth in and around urban areas may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes.

3.72 All growth scenarios include North East Cambridge, which includes one of the most deprived areas in Greater Cambridge. Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there. Large scale development at North East Cambridge also provides an opportunity to design buildings and streetscapes suitable for all.

3.73 The minimum growth scenario includes development at a lower density within Cambridge and the development of North East Cambridge, which is expected to provide some new services and facilities. As such, the minimum growth scenario is expected to maximise access to services and facilities, resulting in mixed significant positive and minor negative effects both within the plan period and beyond.

3.74 The medium and maximum growth scenarios may put more pressure on local services and facilities, due to the increased density of development in the Cambridge urban area, therefore limiting their accessibility to local people. Both the medium and maximum scenarios also include larger developments (namely Cambridge Airport and, for the medium scenario, an edge of Cambridge Green Belt site) that may provide new services and facilities, which could help to ensure easy access to services and facilities for the less mobile, without having to travel into the city centre. In addition, facilities provided may include community meeting space and/or places of worship, which could help ensure the needs of specific groups are met, through providing space for faith groups, pre-/ante-natal groups etc. and helping to foster a sense of community.

3.75 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period, therefore the needs of some groups may not be met within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport.

3.76 As such, mixed minor positive and minor negative effects are expected for the medium and maximum growth scenarios within the plan period, whilst mixed significant positive and minor negative effects are expected when fully built out.

2. Edge of Cambridge – outside the Green Belt

3.77 Development at Cambridge Airport, the focus source of supply for this option, is likely to be of sufficient scale to create a new cohesive community with its own identity, as well as deliver a range of homes, jobs, services and facilities to meet different needs. It is also well located to the existing urban area, and therefore creates opportunities to be integrated with, and also serve, existing communities, although there could be disruption whilst it is developed. All options will contribute positively to equalities by taking this land out of use as an airport, which is likely to be used by a limited number of people, and release it to provide housing and benefit a wider number and range of people. The EqIA states that growth in and around urban areas may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes.

3.78 All growth scenarios also include North East Cambridge, which is also expected to provide new services and facilities, and therefore contribute positively to addressing equalities. North East Cambridge includes one of the most deprived areas in Greater Cambridge, Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there.

3.79 The medium and maximum growth scenarios include development of new settlements, which are expected to provide new services and facilities, particularly larger settlements. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, or there may be a delay to provision of these services. As such, this may limit the ability of some, particularly those less mobile, to access services and facilities as they would have to travel to other centres, such as Cambridge city and therefore these groups may be disadvantaged in the earlier years of the plan.

3.80 Large scale development at new settlements, North East Cambridge and Cambridge Airport also provides an opportunity to design buildings and streetscapes suitable for all.

3.81 The minimum growth scenario includes development of a village site and the medium growth scenario includes development at rural centres and minor rural centres, which may help ensure the continued vitality and viability of these centres, therefore helping to continue service provision for the older generation more likely to be living at these locations.

3.82 Whilst the minimum and medium growth scenarios are more likely to help support more rural communities, they are unlikely to provide the full range of services and facilities at new, settlements North East Cambridge and Cambridge Airport between 2020 and 2041, which may disadvantage the less mobile in terms of their access to services, facilities and jobs. As such, mixed minor positive and minor negative effects are expected for these scenarios within the plan period. The minor positive effects are expected to become significant when fully built out, as a wider range of services and facilities will be accessible to the whole community in the longer term. This also reflects that a sense of community is more likely to develop in the longer term.

3.83 Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport or the new settlements.

3.84 As such, the minimum and medium growth scenarios are expected to have mixed minor positive and minor negative uncertain effects from 2020-2041, whilst the maximum growth scenario is expected to have mixed significant positive and minor negative effects. When fully built out, all growth scenarios are expected to have significant positive effects, but for the maximum scenario this is still mixed with minor negative effects, due to giving less support to those in more rural areas.

3. Edge of Cambridge – Green Belt

3.85 This option could see the creation of new infrastructure, such as schools, local centres and green spaces, which could act as a focal point of community life. The range of services and facilities provided at particular development locations will likely depend on the size of the extension and may be more limited in the minimum and medium scenarios, although development at the edge of Cambridge is also likely to have good access to existing services and facilities in the city, and public transport links into the city centre, therefore benefitting the less mobile, such as the elderly and disabled. However, the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity.

3.86 The EqIA states that growth in and around urban areas may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes. Large scale development at urban extensions also provides an opportunity to design buildings and streetscapes suitable for all.

3.87 Whilst an urban extension can achieve its own sense of place, integration with the existing urban areas and communities will be important if negative effects on existing communities are to be avoided. None of the examples include development to support existing rural communities, which generally have an older population, and therefore could disadvantage older people (and possibly also the less mobile) due to a lack of investment in rural services and facilities. The medium growth scenario also includes development in the Cambridge urban area, which may help promote equalities, as services, facilities and public transport are more likely to be readily accessible in the urban area, which could be beneficial for less mobile groups, such as older and disabled people. The minimum and medium growth scenarios are expected to have mixed minor positive and minor negative effects, whereas the maximum scenario is expected to have mixed significant positive and minor negative effects.

3.88 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

3.89 This option would see the creation of new infrastructure, such as schools, local centres and green spaces, which could act as a focal point of community life at new settlements. It can take many years for the delivery of new settlements and to achieve a scale and critical mass that generate a strong sense of community. They involve building new communities from scratch which can prove challenging and cohesiveness can depend upon both the quality and design of

development, and its delivery to schedule. In addition, it may be more difficult, or take time, to establish a good level of local services and facilities, which could make it challenging for less mobile people, such as the elderly and disabled, to access services and facilities as they would have to travel to larger centres, particularly in the early years of the plan. It is noted that these new settlements and growth at villages is to be focused along public transport corridors, which is likely to help residents access a greater range of services and facilities within Cambridge. The EqlA states that growth at new settlements and along transport corridors may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes, at least in the long term. However, reliance on public transport may not be an affordable choice for those on low incomes or those not of working age. Large scale development at new settlements also provides an opportunity to design buildings and streetscapes suitable for all.

3.90 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely be of a scale to ensure more extensive provision of sufficient new services and facilities, and possible a greater sense of community, due to the higher build out rates under this option.

3.91 In addition, this option does not include growth at rural centres. The lack of investment in existing rural centres could make it difficult for older people, who generally live in the more rural parts of Greater Cambridge, to access services and facilities.

3.92 As such, the minimum and medium growth scenarios are likely to have mixed minor positive and minor negative effects for between 2020 and 2041, but mixed significant positive and minor negative effects when fully built out. The maximum growth scenario is expected to have mixed significant positive effects for both the 2020-2041 period and when fully built out, although the positive effects will be more certain when fully built out. The minor negative effects relate to a lack of growth at existing settlements.

5. Dispersal – villages

3.93 Option 5 would result in an increase in development at villages across Greater Cambridge, which could help support the vitality and viability of these villages and help to support community cohesion. However, more dispersed development could place increasing pressure on existing services and facilities within these villages if sufficient investment to maintain and improve them is not forthcoming. In addition, the EqlA recognises that it may be difficult for residents to access employment, services and facilities elsewhere, particularly if good public transport links do not exist, which could disadvantage the less mobile or those who cannot drive, such as young people, or those who cannot afford a car. Car-dependent development could also disadvantage pregnant women and others who need to regularly access healthcare services. As such, mixed minor positive and minor negative uncertain effects are expected for all growth scenarios.

3.94 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.95 An increase in development along key public transport corridors with good access to Cambridge may benefit those who are less mobile, with a positive effect on inclusivity. This option is also likely to lead to growth at rural communities, and may therefore help ensure the vitality and viability of local services and facilities at those locations, which will benefit the less mobile and older population who are likely to live there. However, it may be more challenging for development along public transport corridors to achieve a coherent sense of community and place, depending upon where particular developments come forward under this option and their relationship to existing communities.

3.96 Development at North East Cambridge (all growth scenarios) is expected to provide new services and facilities, as well as having good access to facilities within Cambridge itself, although integration with the existing urban areas and communities will be important if negative effects on existing communities are to be avoided. North East Cambridge includes one of the most deprived areas in Greater Cambridge, Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there.

3.97 Whilst new settlements (all growth scenarios) would provide new services and facilities and can form new communities, this will require large-scale investment. It is noted that these new settlements and growth at villages (all growth scenarios) are to be focused along public transport corridors, which is likely to help residents access a greater range of services and facilities within Cambridge.

3.98 The EqIA states that growth at new settlements and along transport corridors may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes, at least in the long term. However, reliance on public transport may not be an affordable choice for those on low incomes or those not of working age and may not be an option for some people with disabilities. Furthermore, large scale development at new settlements and North East Cambridge also provides an opportunity to design buildings and streetscapes suitable for all.

3.99 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at these locations is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

3.100 For 2020-2041, the minimum and medium growth scenarios are expected to result in minor positive effects with uncertainty, whereas the maximum scenario is expected to have significant positive effects with uncertainty. When fully built out, all scenarios are expected to have significant positive effects with uncertainty, as at this point a wider range of services and facilities are likely to be accessible at North East Cambridge and new settlements, and propose transport schemes are more likely to have come forward (although some uncertainty remains regarding this).

7. Supporting a high-tech corridor by integrating homes and jobs

3.101 This option will help to ensure housing is well-located with regard to existing centres of employment. In addition, the Southern Cluster villages (all growth scenarios) have some services and facilities, including schools and doctors surgeries, particularly in Great Shelford, Sawston and Linton. Development at these villages may help to boost the vitality and viability of village services and facilities, which is particularly likely to benefit older people and the less mobile, although growth may also put pressure on the capacity of existing services. This option would concentrate development to the south of Cambridge. It is not known if the demographics of this area differ substantially from other areas, but this should be considered further if this option is pursued.

3.102 All growth options include a new settlement. It is noted that these new settlements and growth at villages are to be focused along public transport corridors, which is likely to help residents access a greater range of services and facilities within Cambridge. New settlements may not be able to provide a full range of services and facilities, particularly in the earlier years of the plan period, which could disadvantage the less mobile, such as the elderly or disabled. The EqIA states that growth at new settlements may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes, at least in the long term. However, reliance on public transport may not be an affordable choice for those on low incomes or those not of working age.

3.103 The maximum growth scenario also includes Cambridge Airport and North East Cambridge, which are also expected to provide new facilities and would be well located to access existing services and facilities and/or public transport within Cambridge. North East Cambridge includes one of the most deprived areas in Greater Cambridge. Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there. Development at Cambridge Airport will contribute positively to equalities by taking this land out of use as an airport, which is likely to be used by a limited number of people, and release it to provide housing and benefit a wider number and range of people.

3.104 Large scale development at new settlements, North East Cambridge and Cambridge Airport also provides an opportunity to design buildings and streetscapes suitable for all.

3.105 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at new settlements is likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs, although there is a less certainty on this with regards to Cambridge Airport.

3.106 For 2020-2041, the minimum and medium growth scenarios are expected to result in minor positive effects, whereas the maximum growth scenario is expected to have significant positive uncertain effects. When fully built out, all scenarios are expected to have significant

positive effects, as at this point a wider range of services and facilities are likely to be accessible at North East Cambridge and new settlements.

8. Expanding a growth area around transport nodes

3.107 This option focuses on expanding Cambourne in anticipation of a new railway station and the Cambridgeshire Autonomous Metro. However, it is uncertain whether these will come forward within the plan period, particularly the railway link. Cambourne already includes a number of services and facilities to meet day to day needs, and further large-scale development is likely to support provision of additional services and facilities, which may help benefit the less mobile, such as elderly and disabled people.

3.108 Delivery of a new rail station and Cambridge Autonomous Metro at Cambourne would provide good access to Cambridge and also likely other large settlements outside Greater Cambridge, therefore giving access to a wider range of services and facilities. However, there is some uncertainty regarding when these will come forward, which could leave residents with less access to services and facilities further afield, particularly those unable or unwilling to drive, at least early in the plan period. In addition, reliance on public transport may not be an affordable choice for those on low incomes or those not of working age.

3.109 All options also include some growth situated across more rural settlements, which may help to ensure the vitality and viability of services at those settlements, thus benefitting the, likely older, people who live in rural areas who rely more heavily on local services.

3.110 The medium and maximum growth scenarios both include growth at North East Cambridge and the maximum growth scenario includes growth at Cambridge Airport, which will themselves provide new services and facilities and are in relatively close proximity of existing facilities within Cambridge. North East Cambridge includes one of the most deprived areas in Greater Cambridge, Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there. Development at Cambridge Airport will contribute positively to equalities by taking this land out of use as an airport, which is likely to be used by a limited number of people, and release it to provide housing and benefit a wider number and range of people.

3.111 Large scale development around Cambourne and at North East Cambridge and Cambridge Airport also provides an opportunity to design buildings and streetscapes suitable for all.

3.112 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of the large expansion of Cambourne (and, for the medium scenario, at North East Cambridge) between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, large-scale growth at Cambourne and North East Cambridge is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport..

3.113 For 2020-2041, all scenarios are expected to have minor positive uncertain effects. The minor positive effects are expected to become significant positive effects when fully built out,

due to additional provision of services and facilities and greater likelihood that strategic new transport links will have been delivered, although there is still some uncertainty in that regard.

Best performing option

3.114 Overall, Options 6 'Public transport corridors', 7 'Supporting a high-tech corridor by integrating homes and jobs' and 8 'Expanding a growth area around transport nodes' arguably perform best, as development at new settlements, Cambourne extensions and North East Cambridge will provide new services to meet the day to day needs of residents, whilst also being within easy access to Cambridge (and Cambourne) and supporting villages and rural centres, therefore likely benefitting less mobile residents, such as the elderly and disabled. Options 1 'Densification of existing urban areas', 2 'Edge of Cambridge – outside Green Belt' and 4 'Dispersal – new settlements' also perform well when fully built out.

3.115 All options include a mix of development in and around Cambridge, which provides good access to services, facilities and employment opportunities, and many also include some growth in more rural locations, which is likely to help support services and facilities in those locations, and may even help provide new facilities or build a business case for improved public transport.

SA Objective 4: To improve public health, safety and wellbeing and reduce health inequalities

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-	+/-?	+/-	+	-	+/-	+/-	+/-
Medium Growth	--/+?	+/-?	+/-	+	+/-?	+/-	+/-	+/-
Maximum Growth	--/+?	+/-?	++/-?	+	--/+?	+/-?	+/-?	+/-?

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-	++/-?		++?		++/-	++/-	++/-
Medium Growth	++/--	++/-?		++?		++/-	++/-	++/-
Maximum Growth	++/--?	++/-?		++?		++/-?	++/-?	++/-?

1. Densification of existing urban areas

3.116 Option 1 would result in an increase in the density of development in Cambridge, and therefore an increase in population, particularly in North East Cambridge, where there is the last major brownfield site that is going to be brought forward via the AAP.

3.117 A large number of people would be living within close proximity to their workplace, as well as a range of local amenities. This would encourage active travel such as walking and cycling. Under the minimum growth scenario, the demand for walking and cycling could be met. However, under the medium or maximum growth scenarios there may not be sufficient end of journey facilities for cyclists (e.g. bike storage). Furthermore, large parts of Cambridge City Centre are an AQMA and therefore poor air quality could have an adverse effect on people's health.

3.118 Greater density of development within the city, under the medium and maximum growth scenarios, may result in a loss of open space which may have a negative effect on residents' physical and mental health. The Green Infrastructure Study recognised that development in the urban area could result in piecemeal development of GI and difficulties in delivering GI due to space constraints. Alternatively, this option may present an opportunity to deliver GI where there are existing deficiencies, resulting in positive effects of physical and mental health.

3.119 It is also likely that a greater number of people would be located within close proximity of primary health care facilities. These facilities may be able to meet the demand of a minimum growth scenario. However, with a medium or maximum growth scenario it is possible that these services could be over-capacity and would therefore require further investment. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity.

3.120 Development coming forward at Cambridge Airport in the medium and maximum growth scenarios and, for the medium scenario, an edge of Cambridge Green Belt site, are likely to be of such a scale as to provide new services and facilities to serve new development, although these are unlikely to relieve the additional pressure on services within the city itself. Healthcare facilities are also only likely to be provided if developments reach a certain size. This large-scale development on the edge of the city could be built to accommodate more walking and cycling.

3.121 The medium and maximum growth scenarios include larger scale development at Cambridge Airport, which is likely to include open space, recreational and sporting facilities. These spaces and facilities are important for people's physical and mental wellbeing.

3.122 However, the minimum and medium growth scenarios are unlikely to provide the full range of health and recreation services and facilities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new health and recreation services and facilities, although this is not the case for Cambridge Airport.

3.123 The Green Infrastructure Study recognised that development at North East Cambridge and Cambridge Airport provides greater opportunities for integrating GI, although they may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites. Overall, there is increased risk of pressure on existing GI assets under the medium and maximum scenarios.

3.124 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

3.125 Therefore, for 2020-2041 the minimum growth scenario is expected to have a mixed minor positive and minor negative effect against this objective, whereas the medium and maximum scenarios are expected to have a mixed minor positive and significant negative uncertain effect. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

2. Edge of Cambridge – outside the Green Belt

3.126 Option 2 includes urban development at Cambridge Airport for all growth scenarios, which may be of sufficient scale to incorporate a GP surgery, plus a range of open space, recreational and sporting facilities. Furthermore, walking and cycling can be designed in from the outset.

3.127 The additional sources of supply for all growth scenarios includes development at North East Cambridge, a brownfield site, which is already within close proximity to amenities, services and facilities and may also provide new open space, recreation and health facilities. The maximum growth scenario includes a higher delivery rate which will lead to a more densely populated area. Although the site is close to existing healthcare facilities, a significant increase in population could mean these services are unable to meet the demand. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity.

3.128 The Green Infrastructure Study recognised that development at North East Cambridge and Cambridge Airport provides greater opportunities for integrating GI, although they may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites. Overall, there is increased risk of pressure on existing GI assets under the medium and maximum scenarios.

3.129 Both the medium and maximum growth scenarios include development of new settlements on public transport corridors. New settlements offer the opportunity to incorporate healthcare facilities, amenities, open space, green infrastructure and active travel from the outset. The minimum growth scenario includes a village site and the medium growth scenario includes development at larger villages. Residents at these locations may have more limited access to healthcare services, amenities and recreational and sporting facilities.

3.130 The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors.

3.131 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

3.132 The minimum and medium growth scenarios are unlikely to provide the full range of health and recreation services and facilities at new settlements North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new health and recreation services and facilities, although this is not the case for Cambridge Airport or the new settlements.

3.133 3.134 For 2020-2041, all growth scenarios are expected to have a mixed minor positive and minor negative effect on this objective with uncertainty, with the minor positive effects becoming significant when fully built out. This is because large urban extensions and new settlements are likely to provide new health and recreation facilities, particularly in the long-term, but more rural developments are likely to place pressure on existing healthcare and recreation facilities. The effects are uncertain as the exact location of the village site and new settlements are unknown.

3. Edge of Cambridge – Green Belt

3.134 Option 3 includes the development of new sites in the Green Belt, on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a broad range of locations. New urban extensions have more scope to be designed in a way that encourages walking and cycling which is likely to have a positive impact on people's health. However, under the medium or maximum growth scenarios there may not be sufficient end of journey facilities for cyclists (e.g. bike storage). Development would also be well located for residents to access existing services and facilities within Cambridge, although the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity

3.135 This option could see the creation of new on-site infrastructure, such as open space and a GP surgery, with positive effects on public health, although, the range of services and facilities provided will likely depend on the size of developments. This option provides an opportunity for urban extensions to cater for GI deficits in neighbouring urban areas, as well as connecting to and/or expanding key GI assets, such as the parkland and country park network. However, provision of new social and green infrastructure is likely to be more limited in the minimum and medium scenarios, due to the lower level of growth and likely smaller size of urban extensions.

3.136 For all scenarios, there is a possibility that development will take place in proximity to the A14 corridor AQMA, where poor air quality could have a negative impact on the health of residents.

3.137 Development will also come forward in the Cambridge urban area for the medium growth scenario. It is likely that residents at these dwellings will have access to healthcare facilities and amenities. Development is to be kept at a minimal balance so facilities should not be over-capacity. However, a large part of the city centre is an AQMA, therefore residents could be affected by poor air quality in the centre. The Green Infrastructure Study recognised that

development in the urban area could result in piecemeal development of GI and difficulties in delivering GI due to space constraints. Alternatively, this option may present an opportunity to deliver GI where there are existing deficiencies, resulting in positive effects of physical and mental health.

3.138 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

3.139 The 2020-2041 growth scenarios are expected to have a mixed minor positive and minor negative effect in relation to this objective, whereas the maximum growth scenario is expected to have mixed significant positive and minor negative effects. For the minimum growth scenario this is uncertain, as there will likely be more scope to avoid development at areas of poorer air quality.

3.140 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

3.141 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure.

3.142 New settlements have more scope to be designed in a way that encourages walking and cycling, which will likely have a positive impact on people's health. Furthermore, the new developments in the medium and maximum growth scenarios are more likely to be of scale to provide more extensive healthcare services, open space, GI, recreational and sporting facilities which will benefit public health. Large-scale development has potential to increase pressure on existing GI assets, although the Green Infrastructure Study suggests this is more of a risk to biodiversity than health.

3.143 The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors.

3.144 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

3.145 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

3.146 Option 4, for all growth scenarios, is expected to have a minor positive effect with uncertainty from 2020-2041 and a significant positive effect with uncertainty when fully built out, as all scenarios will include new open space, healthcare and recreation facilities but this provision may be more limited in the shorter term.

5. Dispersal – villages

3.147 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge, which could place increasing pressure on existing services, such as primary healthcare, recreational and sporting facilities and amenities. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. There are fewer Rural Centres so the absolute growth in each village is significantly greater for each Rural Centre than Minor Rural Centre. Rural Centres are likely to have more amenities, services and facilities than Minor Rural Centres however, they could become overwhelmed and reach capacity.

3.148 Furthermore, it is likely that residents would need to drive to access jobs, facilities and amenities, resulting in less active travel and an increase in poor air quality across Greater Cambridge which could have an adverse effect on people's health.

3.149 The Green Infrastructure Study identified that this option would likely result in piecemeal GI interventions, therefore reducing the likelihood of a connected GI network or strategic interventions. However, higher concentrations of development within individual villages, under the medium and maximum scenarios, may present opportunities to deliver GI that can address existing deficiencies in access to open space, and offer opportunities to add to the active travel network connecting villages and connecting to urban areas.

3.150 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

3.151 Option 5, minimum scenario is expected to have a minor negative effect and the medium growth scenario is expected to have a mixed minor positive and minor negative uncertain effect in relation to this objective. The maximum growth scenario is expected to have a mixed minor positive and significant negative uncertain effect against this objective, due to the additional pressure on existing services and facilities likely as a result of higher levels of growth.

3.152 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.153 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, across eighteen villages with existing or proposed public transport corridors and a new settlement on a public transport corridor. It is therefore likely that people would have good access to primary health care facilities, at least via public transport. In addition, larger developments, such as North East Cambridge and the new settlements are likely to be of a scale that would require new healthcare services, open space, GI, recreational and sporting facilities and amenities. As such, these facilities are likely to have a positive impact on public health.

3.154 However, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these

locations within the plan period. Under the maximum growth scenario however, growth at these locations is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

3.155 The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors.

3.156 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

3.157 Depending on the scale of development, it may be more challenging to design in healthy behaviours, for example through provision of integrated open space and green infrastructure may come forward on a more piecemeal basis, such as the smaller developments across the eighteen villages. Existing rural healthcare facilities in these locations may be overwhelmed and reach capacity. Growth at North East Cambridge may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites, particularly when fully built out. All growth scenarios for option 6, are likely to have a mixed minor positive and minor negative effects for 2020-2041 and mixed significant positive and minor negative effect in relation to this objective when fully built out.

7. Supporting a high-tech corridor by integrating homes and jobs

3.158 Option 7 includes development to the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement. These settlements are expected to require new healthcare services, open space, recreational and sporting facilities and amenities. Furthermore, new settlements have the opportunity to encourage and accommodate walking and cycling from the outset through design, along with green infrastructure. This could have a positive impact on people's health.

3.159 The Green Infrastructure Study states that this option could enable expansion of the parkland and country park network.

3.160 The maximum growth scenario includes development at Cambridge Airport and North East Cambridge which will both likely provide new healthcare services, recreational and sporting facilities and amenities. These sites could be built to encourage more walking and cycling which would have a positive effect on public health. The Green Infrastructure Study recognised that development at North East Cambridge and Cambridge Airport provides greater opportunities for integrating GI, although they may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites. Overall, there is increased risk of pressure on existing GI assets under the medium and maximum scenarios.

3.161 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

3.162 However, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at new settlements is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs, although there is a less certainty on this with regards to Cambridge Airport.

3.163 All growth scenarios also include development across five villages all with existing or proposed public transport nodes. However, development spread of across villages is likely to place a strain on existing healthcare services, recreational and sporting facilities and amenities. As such, these services and facilities could become overwhelmed and reach capacity. Development distributed among the villages could lead to piecemeal delivery of GI.

3.164 For both 2020-2041, all growth scenarios are expected to have mixed minor positive and negative effects in relation to this objective. When fully built out, all growth scenarios are expected to have a mixed significant positive and minor negative effect in relation to this objective.

8. Expanding a growth area around transport nodes

3.165 Option 8 would focus development at Cambourne and along the A428 public transport corridor, which are due to be served by a new railway station and Cambridge Autonomous Metro. However, it is uncertain whether these will come forward within the plan period, particularly the railway link. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes development equivalent to a larger new settlement. These developments are likely to be of a scale to require new healthcare services, recreational and sporting facilities and amenities. Furthermore, large new developments have the opportunity to encourage and accommodate walking and cycling, along with open space and green infrastructure from the outset through design. This could have a positive impact on people's health.

3.166 The Green Infrastructure Study identifies that this option has potential to extend or exacerbate north-south severance of GI, but also to introduce GI connectivity across the A428 corridor and develop active transport connections. However, development distributed among villages may result in piecemeal delivery of GI.

3.167 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

3.168 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of the large expansion of Cambourne (and, for the medium scenario, at North East Cambridge) between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, large-scale growth at Cambourne and North East Cambridge is likely be of a scale to ensure more extensive provision of sufficient new services and facilities,

due to the higher build out rates under this option, although this is less certain for Cambridge Airport.

3.169 All growth scenarios include development distributed across three village sites along the A428 public transport corridor. The medium and maximum growth scenario would see 40% of this development at Minor Rural Centres/ Group Village within 5km of Cambourne. Healthcare service, amenities, recreational and sporting facilities are less likely to be within close proximity of these villages and development may not be of scale to require new facilities and services to be built. Additional sources of supply for the medium and maximum scenarios include development at North East Cambridge and, for the maximum growth scenario, Cambridge Airport. These sites will require the development of healthcare services, amenities, recreational and sporting facilities. Furthermore, these developments could be built to encourage more walking and cycling which would have a positive effect on public health. Development at these sites presents more opportunities for integrating GI, but may also put pressure on the existing GI network.

3.170 For Option 8, all growth scenarios are expected to have a mixed minor positive and minor negative effect from 2020-2041, but a mixed significant positive and minor negative effect when fully built out.

Best performing option

3.171 Option 4 'Dispersal – new settlements' performs well, as new settlements are likely to be of scale that requires the development of new healthcare services and amenities, along with being large enough to design space for active travel, green infrastructure and open space. All options except Option 5 'Dispersal – villages' perform relatively well when fully built out, although those that include locations within or near the urban area of Cambridge have potential to be affected by poor air quality. For all options, effects depend on the location, design and size of development.

3.172 Option 5 'Dispersal – villages' performs least well, as development under this scenario, as it is likely to result in development that would not be of scale that requires new facilities, amenities and open space, and may increase demand on existing services and facilities that cannot be met. It is also more likely to result in piecemeal delivery of GI, failing to support strategic interventions or the wider GI network.

SA Objective 5: To conserve, enhance, restore and connect wildlife habitats, species and/or sites of biodiversity or geological interest

Housing provision between 2020-2041

Strategic Spatial Options / Growth scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-?	+/-?	+/-?	+/-?	-?	-/+?	+/-?	+/-?
Medium Growth	--/+?	--/+?	--/+?	--/+?	--?	--/+?	--/+?	--/+?
Maximum Growth	--/+?	--/+?	--/+?	--/+?	--?	--/+?	--/+?	--/+?

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-?	+/-?		+/-?		--/+?	+/-?	+/-?
Medium Growth	--/+?	--/+?		--/+?		--/+?	--/+?	--/+?
Maximum Growth	--/+?	--/+?		--/+?		--/+?	--/+?	--/+?

3.173 Note that the HRA Study identified a range of potential impacts on European sites for each option, but notes that the level of risk and severity of each impact will be assessed in more detail as part of the full HRA. In order to reflect that further work is required to enable firm conclusions on potential risks to European sites, all effects for this SA objective are recorded as uncertain.

1. Densification of existing urban areas

3.174 Option 1 would result in an increase in the density of development in Cambridge, a large proportion of which would be located within the urban area and at North East Cambridge on brownfield land or redevelopment of existing built-up sites. As such, development less likely to take place at greenfield sites where there is increased biodiversity and wildlife habitats.

3.175 Cambridge contains a number of designated biodiversity sites, and whilst it is unlikely that development would be permitted on these sites, focusing development in the city could affect the network of green spaces important for wildlife, habitats and species, particularly if multiple sites come forward in proximity to areas of biodiversity value. In addition, brownfield land can sometimes contain ecological interest. In addition, the Review of Strategic Spatial Option in Relation to Green Infrastructure (GI) noted that, whilst this option could increase pressure on existing nature conservation sites, there may be opportunities to use GI to support delivery of nearby Natural England's Habitat Network opportunity zones and support pollinator corridors – particularly in the south of Cambridge.

3.176 Both the medium and maximum growth scenarios include development at Cambridge Airport, another brownfield site. Much of this site is in the form of open grass areas, which is mown regularly, but habitats along the boundary, such as wooded areas and drainage ditches, can act as foraging habitat for protected species. The site itself does not contain any designated biodiversity habitats, but the western boundary of the airport abuts Barnwell East Local Nature Reserve, and the airport could be considered to form part of the wider ecological network. The Review of Strategic Spatial Option in Relation to Green Infrastructure highlighted that development at North East Cambridge and Cambridge Airport could increase pressure on wetland assets to the east and north east. There are Biodiversity Opportunity Areas present around the edge of the site, which could be used as a way to enhance the ecological networks present in the area, whilst also providing an opportunity to design in green infrastructure.

3.177 The medium growth scenario includes development at the edge of Cambridge on Green Belt land. Losing this land could have a negative effect on biodiversity including the loss of local species, wildlife and their habitats. Higher densities in the medium and maximum growth scenarios are likely to lead to the loss of more urban green space, which could be valuable wildlife refuges.

3.178 The Review of Strategic Spatial Option in Relation to Green Infrastructure noted that the minimum and maximum scenarios present an increased risk of pressure on existing GI assets, including designated biodiversity sites, and, when fully built out, potential for loss of land within Natural England's Habitat Network opportunity zones.

3.179 Option 1, minimum growth scenario is expected to have a minor positive and negative but uncertain effect against this objective. Both the medium and maximum growth scenarios are likely to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The proposed effects are uncertain as specific details of the developments and exact locations are unknown. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

2. Edge of Cambridge – outside the Green Belt

3.180 Option 2 would result in development at Cambridge Airport site for all growth scenarios, which comprises largely brownfield land, although much of this is in the form of open grass areas, which is mown regularly, but habitats along the boundary, such as wooded areas and drainage ditches, can act as foraging habitat for protected species. The site itself does not contain any designated biodiversity habitats, but the western boundary of the airport abuts Barnwell East Local Nature Reserve, and the airport could be considered to form part of the wider ecological network. There are Biodiversity Opportunity Areas present around the edge of the site, which could be used as a way to enhance the ecological networks present in the area, whilst also providing an opportunity to design in green infrastructure.

3.181 Additional sources of supply for all growth scenarios includes development in North East Cambridge, which is a brownfield site. Although this site is developed and does not contain any designated or protected ecological areas, development could result in the loss of brownfield mosaic habitats. Furthermore, both the medium and maximum growth scenarios include development at new settlements on a public transport corridor which is likely to be situated out of the centre. The minimum growth scenario includes growth at one village and the medium growth scenario includes development across a range of villages. It is therefore likely development will take place on greenfield land where there may be protected species, wildlife and habitats. Despite potentially losing green space, networks and corridors, developing new settlements or sites offers the opportunity to integrate green open spaces and networks into their design from the outset.

3.182 The Green Infrastructure Study recognised that development at North East Cambridge and Cambridge Airport provides greater opportunities for integrating GI, including supporting Natural England's Habitat Network opportunity zones. However, development at these locations may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites, including wetland assets to the east and north east. Overall, there is increased risk of pressure on existing GI assets under the medium and maximum scenarios.

3.183 The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors. Depending on the location of new settlements and supporting infrastructure, there is the potential risk of impacts on international designations and/or functionally linked habitat.

3.184 Option 2 is expected to have a mixed minor positive and minor negative uncertain effect for the minimum growth scenario in relation to this objective. A mixed minor positive and significant negative uncertain effect is expected for the medium and maximum growth scenarios, due to the greater land take and therefore greater likely habitat loss under these scenarios. The effects are all uncertain as it will depend on the location of the sites and design details, such as whether developments include green infrastructure and open green spaces. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

3. Edge of Cambridge – Green Belt

3.185 Option 3 would result in development around the edge of Cambridge. The minimum growth scenario includes development at three sites and the medium and maximum growth scenarios include development at five sites all across broad locations. Cambridge city and the surrounding area contains a number of Sites of Special Scientific Interest, Wildlife Sites and Local Nature Reserves, as well as many Priority Habitats. The Green Belt fringe supports significant habitat opportunity zones (as identified by Natural England Habitat Network mapping) in the south east and south west in particular, and to a lesser extent to the west around Coton. There is some sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance. Green Belt Fringe areas of particular sensitivity include the Cam corridor through Trumpington, Fen Ditton and Grantchester which are vulnerable to hydrological change and recreational pressure. It is therefore possible that individual developments would take place at or within close proximity to these biodiversity assets. However, there may be opportunities to design in green infrastructure, incorporating ecological networks, particularly at larger extensions.

3.186 There is also a potential risk of impacts on international designations – those in closest proximity include the south east fenland complex and north east fen complex and peatlands.

3.187 The medium growth scenario includes some development within the Cambridge urban area. Cambridge contains a large number of designated biodiversity sites, and whilst it is unlikely that development would be permitted on these sites, focusing development in the city could affect the network of green spaces important for wildlife, habitats and species, particularly if multiple sites come forward in proximity to areas of biodiversity value. In addition, brownfield land can sometimes contain ecological interest.

3.188 The minimum growth scenario is expected to have a mixed minor positive and minor negative effect for this objective, as having fewer urban extensions gives more scope to avoid the most sensitive areas. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative but uncertain effects against this objective, as the higher deliver numbers incur greater potential for loss of habitat (e.g. within Natural England Habitat Network mapping opportunity areas), and greater pressure on existing resources. The proposed effects are uncertain as exact locations and specific details of the developments are unknown.

3.189 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

3.190 Option 4 includes the development of new settlements that are large enough to provide an opportunity for their own infrastructure. The minimum growth scenario includes two new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios also include a new settlement on a road network. The location of any new settlements that could come through Option 4 is uncertain. However, it is very likely that this option will lead to development on large areas of greenfield land, which could have biodiversity value (depending on the habitats

present) and form part of the rural ecological network of habitats. The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors

3.191 Greater Cambridge contains a large number of designated and non-designated habitats and it is therefore possible that a new settlement could take place at or within close proximity to these biodiversity assets. Depending on the location of new settlements and supporting infrastructure, there is an increased risk of impact on international designation and/or (particularly when fully built out) functionally linked habitat. However, greenfield sites are not always of particular ecological value, and the more sensitive ecological locations could be avoided. Nevertheless, designing a new settlement from scratch means that the most sensitive sites could be avoided, and green infrastructure and ecological networks can be designed into the development from the outset.

3.192 Option 4, minimum growth scenario, is expected to have a mixed minor positive and negative uncertain effect. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective, due to the greater land take and therefore greater likely habitat loss under these scenarios. The effects are all uncertain as it will depend on the location of sites and design details, such as whether developments include green infrastructure and open green spaces. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

5. Dispersal – villages

3.193 Option 5 would result in an increase in development at villages across Greater Cambridge. As many of the villages across Greater Cambridge contain or are located within close proximity to designated and non-designated biodiversity assets, and development is likely to come forward on greenfield land, particular developments coming forward under this option could lead to loss of biodiversity, depending on their location. Depending on the detailed distribution of development, potential impacts on international sites may occur via hydrological connectivity or quality, recreational impact, air quality impact, or through habitat loss or damage (of designated or functionally linked land). It may also be more challenging to deliver integrated ecological networks as part of individual development proposals, due to their likely smaller scale.

3.194 The minimum growth scenario is expected to have a minor negative uncertain effect in relation to this objective, whereas the medium and maximum scenarios are expected to have significant negative uncertain effects, due to the greater scale of development. The exact locations of development across the villages and the new settlement are unknown, along with specific design details, so the effects are uncertain.

3.195 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.196 Option 6 focuses development at North East Cambridge, a new settlement and 18 villages along key public transport corridors and hubs. Under this option, development may take place on greenfield land, which may support protected species and habitats. Greater Cambridge contains a large number of designated and non-designated habitats and it is therefore possible that a new settlement could take place at or within close proximity to these biodiversity assets. However, the exact locations of these developments are unknown, so the effects are uncertain.

3.197 All growth scenarios include development at North East Cambridge, which includes areas of green space and brownfield mosaic habitat that may act as habitats for a variety of species. The Green Infrastructure Study states that growth at North East Cambridge may present risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites, particularly when fully built out. Whilst it does not intersect with any ecological designations, the Green Infrastructure Study highlights potential for effects on the wetland assets to the east and north. There is a risk of potential impacts on international fenland and washes sites via hydrological connectivity or through habitat loss or damage (of designated or functionally linked land). Depending on the location of the new settlement and supporting infrastructure, there is increased risk of impact on international designation and/or (particularly at 'all time' rates) functionally linked habitat.

3.198 Larger developments, such growth at North East Cambridge and new settlements, may offer the opportunity to design in strategic green infrastructure and spaces from the outset.

3.199 The effects of development at villages depends on the locations of these. Where villages are located in close proximity to designated or non-designated sites, there is potential for impacts on these and the wider ecological network.

3.200 For 2020-2041, the minimum growth scenario is expected to have mixed minor positive and minor negative effects on this objective. The medium and maximum scenarios are likely to result in an increased magnitude of change, therefore these growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The effects are all uncertain as it will depend on the location of sites and design details, such as whether developments include green infrastructure and open green spaces. When fully built out all options are expected to have mixed minor positive and significant negative effects.

7. Supporting a high-tech corridor by integrating homes and jobs

3.201 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios would have a smaller new settlement and maximum growth scenario would have a settlement twice the size. All options also include growth at five villages, which is also likely to take place on greenfield land. The area south of Cambridge contains Sites of Special Scientific Importance, Local Wildlife Sites and Local Nature Reserves, so it is therefore possible that development could be built at or within close proximity to these biodiversity assets. However, greenfield sites are not always of particular ecological value, and it may be possible to avoid the more sensitive

ecological locations. In addition, designing a new settlement from scratch means that green infrastructure and ecological networks can be designed into the development from the outset.

3.202 The Green Infrastructure Study states that focusing housing delivery in this area provides opportunities for habitat enhancement relating to woodland (optimising connectivity to both existing and proposed as part of forthcoming development) and the wetland-grassland mosaic.

3.203 The maximum growth scenario also includes development at Cambridge Airport and North East Cambridge. Although both sites are brownfield land, the sites do have areas of open green grassland which can act as foraging habitat for protected species or wildlife, as well as habitat mosaics on brownfield land at North East Cambridge. Both sites do not contain any designated biodiversity habitats, but the western boundary of the airport abuts Barnwell East Local Nature Reserve, so the site could form part of the wider ecological network. There are Biodiversity Opportunity Areas present around the edge of the airport, which could be used as a way to enhance the ecological networks present in the area and provide an opportunity to design in green infrastructure. Furthermore, when developing a new settlement there will be the opportunity to design in green infrastructure from the outset.

3.204 Option 7, for the minimum growth scenario is expected to have a mixed minor positive and minor negative uncertain effect in relation to this objective. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective due to greater loss of land, and therefore greater likely habitat loss under this scenario. As the exact locations of the developments are unknown, an uncertain effect is expected. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

8. Expanding a growth area around transport nodes

3.205 Option 8 focuses homes at Cambourne and surrounding villages along the A428 public transport corridor. These areas are to be served by a new railway station and Cambridgeshire Autonomous Metro.

3.206 The minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one smaller new settlement and development across three new villages. The maximum scenario includes a greater level of growth at Cambourne and development across three villages. Both the medium and maximum also include development at minor rural centres/group villages within 5km of Cambourne. As such, the majority of development will be in rural locations. Development in the villages could affect designated or non-designated assets, and the wider ecological network, depending on their design and location.

3.207 The area contains a number of designated and non-designated habitats. For example, north west of Cambourne is Elsworth Wood, which is designated as ancient woodland and a Site of Special Scientific Interest (SSSI). North east of Cambourne is Knapwell Woods and east is Bucket Hill Plantation Grassland both of which are Local Wildlife Sites. It is therefore possible that development could take place within close proximity to these biodiversity assets, even if the sites themselves remain protected from development. It is noted that greenfield sites themselves are not always of particular ecological value, but they can provide supporting habitat

or nearby more sensitive locations. All growth scenarios include designing a large new development from scratch, which means green infrastructure and ecological networks could be incorporated into designs. The exact locations of the developments are unknown, leading to uncertainty

3.208 The Green Infrastructure Study states that this option has potential to affect the Eversden and Wimpole SAC and woodland SSSIs, as the SAC supports barbastelle bats, who rely on habitats in the wider area for foraging.

3.209 The maximum growth scenario includes development at Cambridge Airport which contains open grassland, which is mown regularly, but habitats along the boundary, such as wooded areas and drainage ditches, can act as foraging habitat for protected species. Both the medium and maximum growth scenarios include development at North East Cambridge where there are also areas of green space and brownfield mosaic habitat that could be of biodiversity importance. Both sites do not contain any designated biodiversity habitats, but the western boundary of the airport abuts Barnwell East Local Nature Reserve, so the site could form part of the wider ecological network. There are Biodiversity Opportunity Areas present around the edge of the airport, which could be used as a way to enhance the ecological networks present in the area and provide an opportunity to design in green infrastructure. Development at these sites presents more opportunities for integrating GI, but may also put pressure on the existing GI network.

3.210 The Green Infrastructure Study identifies that this option has potential to extend or exacerbate north-south severance of GI, but also to introduce GI connectivity across the A428 corridor.

3.211 The minimum growth scenario is expected to have a mixed minor positive and minor negative uncertain effect against this objective. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective, due to the greater land take and therefore greater likely habitat loss under these scenarios. The effects are uncertain as the exact location of much of the development proposed is not yet known, along with the layouts of developments which could avoid designations and designs could include green infrastructure. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

Best performing option

3.212 There is no one option which outperforms the other options. However, development that is focused in urban areas or on brownfield land is less likely to have a negative effect on Objective 5. Furthermore, development at new settlements or larger sites offers the opportunity to design in green infrastructure, networks and corridors from the outset (which could include protecting existing features, such as hedgerows and waterbodies), which will have a positive effect on SA objective 5. Option 5 'Dispersal – villages' performs least well as this option includes development at a broad range of locations, so it is likely that development would take place on greenfield land and may intersect with or be adjacent to an ecological designation and mitigation and enhancement measures will be more difficult to achieve.

SA Objective 6: To conserve and enhance the character and distinctiveness of Greater Cambridge's landscapes and townscapes, maintaining and strengthening local distinctiveness and sense of place

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-	+/-	-	+/-?	-?	+/-?	--/+?	--/+?
Medium Growth	--/+	--/+	--/+?	--/+?	-?	--/+?	--/+?	--/+?
Maximum Growth	--/+	--/+	--?	--/+?	--?	--/+?	--/+?	--/+?

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-	+/-		+/-?		--/+?	--/+?	--/+
Medium Growth	--/+	--/+		--/+?		--/+?	--/+?	--/+
Maximum Growth	--/+	--/+		--/+?		--/+?	--/+?	--/+

1. Densification of existing urban areas

3.213 Option 1 would result in an increase in the density of development in Cambridge, which could have an adverse effect on the townscape.

3.214 It is unlikely that development would take place on landscape features present within the city (e.g. valued parks and green spaces), at least for the minimum growth scenario. Option 1 could involve the development of taller buildings within Cambridge, which could be out of character with the historic core of the city and affect views and vistas within the urban area, although it is recognised that not all individual developments within Cambridge would necessarily have a negative impact.

3.215 The medium and maximum growth scenarios are more likely to result in development out of keeping with the townscape in the city due to the higher density of development they require. The renewal of some locations, away from the city centre itself, may lead to townscape improvements. For example, all growth scenarios include development at a brownfield site, North East Cambridge, which could improve the townscape and landscape if development is considerate to existing surroundings.

3.216 Focusing development within Cambridge could protect sensitive landscapes located on its outskirts. The medium growth scenario includes development at the edge of Cambridge on Green Belt land which could potentially have an adverse effect on the landscape, by increasing urbanisation of this area and disrupting views towards the city and reducing the countryside gaps separating Cambridge from surrounding villages.

3.217 The medium and maximum scenarios include growth at Cambridge Airport, a site that is predominantly grassland. It includes airport buildings and structures, some of which are quite prominent. Although the airport and its associated buildings have formed part of the character and distinctiveness of this location for many years, they do not reflect the wider character of Cambridge. It also currently has aircraft movements. Between 2020 and 2041, these effects are likely to be more pronounced for the maximum growth scenario due to the greater level of growth. The medium growth scenario also includes growth at one site on the edge of Cambridge in the Green Belt, which could affect the setting of Cambridge to some extent, but this will be somewhat limited by the smaller amount of growth coming through this additional source of supply.

3.218 Option 1, minimum growth scenario is expected to have a mixed minor positive and minor negative effect against this objective. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative effect in relation to this objective due to the higher density of development and development on the edge of Cambridge. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

2. Edge of Cambridge – outside the Green Belt

3.219 Option 2 would result in a significant amount of development on the edge of the city, at Cambridge Airport, a site that is predominantly open grassland. It includes airport buildings and structures, some of which are quite prominent. Although the airport and its associated buildings have formed part of the character and distinctiveness of this location for many years, they do not reflect the wider character of Cambridge. It also currently has aircraft movements. The Landscape Study suggests the 'new urban edge' of development at the airport would be a prominent feature in the landscape.

3.220 The additional source of supply for all growth options includes development at a brownfield site in North East Cambridge. If the development is designed well it could enhance the character and distinctiveness of the area. It is on the edge of the city, so development could affect the views in and out of the city.

3.221 Both the medium and maximum growth scenarios include the development of new settlements on public transport corridors. Designing and developing a whole new settlement offers the opportunity to build homes and a public realm that are well-designed and sensitive to the surrounding character and distinctiveness. However, larger settlements are likely to have a greater impact on the landscape, due to the scale of new development.

3.222 The minimum growth scenario includes development at a village site and the medium scenario includes growth at rural centres and minor rural centres. The Landscape Study suggests that this growth may cause some harm to distinctive local landscape and townscape features. Nevertheless, this development is likely to be distributed so that any one settlement receives a relatively small level of growth, therefore the effect on the landscape/townscape is likely to be fairly minor.

3.223 The minimum growth scenario is expected to have a mixed minor positive and minor negative effect in relation to this objective. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative effect against this objective, as these scenarios include greater land-take and the development of new settlements, which will inevitably result in large-scale landscape change. The effects are uncertain as the exact location, design and scale of the proposed developments are unknown. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

3. Edge of Cambridge – Green Belt

3.224 Option 3 would result in development around the edge of Cambridge in Green Belt land for all growth options, which could have an adverse effect on views into and out of the city. Whilst such development would extend an already established urban area rather than introducing new urban development into a predominantly rural location, urban extensions could have significant impacts on the setting of Cambridge. The Landscape Study identifies that all landscape character types surrounding Cambridge have features that are vulnerable to change. However, may help to minimise changes to distinctive townscape features by avoiding growth within urban areas.

3.225 Both the medium and maximum growth scenarios estimate that five locations would be used compared with three in the minimum growth scenario. Furthermore, the maximum growth scenario would use higher delivery rates. As such, the higher the growth scenario the greater the likely impact (although this depends on whether any particularly sensitive features are present at or near specific development sites).

3.226 The medium growth scenario includes development within the Cambridge urban area. This could involve the development of taller buildings within Cambridge, which could be out of character with the historic core of the city and affect views and vistas within the urban area, although such impacts may be limited as the amount of development coming forward in the urban area is expected to be minimal. Alternatively, it could help regenerate degraded or underused land in the city.

3.227 The minimum scenario is expected to have a minor negative effect as it would expand Cambridge in fewer locations around the city, and therefore may be able to avoid the most sensitive areas. The medium and maximum growth scenarios are expected to have a significant negative uncertain effect in relation to this objective, except for the medium scenario which is expected to have a minor positive and significant negative uncertain effect. The effect is recorded as uncertain because the actual effect will depend on the final location, design, scale and layout of the proposed developments.

3.228 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

3.229 Option 4 includes the development of new settlements that are large enough to provide an opportunity for their own infrastructure. The minimum growth scenario includes two smaller new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios include a new settlement on a road network.

3.230 A new settlement has the potential to have a major impact on Greater Cambridge's landscape, as it would be introducing a large urban development into a predominantly rural location. However, the effect on the surroundings will depend upon where it is located and how sensitively the new settlement is designed. Developing a whole new settlement offers the opportunity to design it sensitively from the outset. Furthermore, development is not within the centre of Cambridge so will not affect the townscape and setting of the city.

3.231 The minimum growth scenario is expected to have a mixed minor positive and minor negative uncertain effect for this objective and the medium and maximum growth scenario is expected to have a mixed significant negative and minor positive uncertain effect. The effects are uncertain as the final location, design, scale and layout of the proposed developments are unknown. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

5. Dispersal – villages

3.232 Option 5 would result in an increase in development at villages across Greater Cambridge. The expansion of these villages could have an adverse effect on the open countryside and landscape surrounding these villages, as well as village character, particularly if a large amount of dispersed development is required. As such, dispersed development is likely to affect more areas, although perhaps to a lesser degree. The Landscape Study states that effects will vary from village to village, depending on their existing character, therefore all effects are uncertain.

3.233 Option 5 is expected to a minor negative uncertain effect for the minimum and medium growth scenario and a significant negative uncertain effect for the maximum scenario in relation to this objective. The actual effect will depend on exact locations of developments across the villages, along with the final design, scale and layout of the proposed development but these are unknown.

3.234 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.235 Option 6 focuses development along key public transport corridors and hubs through redevelopment of North East Cambridge, the expansion or intensification of existing villages and a new settlement. A new settlement has the potential to have a major impact on Greater Cambridge's landscape, as it would introduce a relatively large urban development into a predominantly rural location. However, the effect on the surroundings will depend upon where it is located and how sensitively the new settlement is designed. If this option led to a string of development along key public transport corridors, which was not done in a sensitive way, it could significantly extend a sense of urbanisation into the more rural parts of Greater Cambridge and coalescence between settlements, as these routes are the ones that people would travel through most often.

3.236 All growth scenarios include development at North East Cambridge, which is on the edge of city. Development at North East Cambridge could potentially affect the character and distinctiveness of the city. It is on the edge of Cambridge, so it could affect views in and out of the city. However, if development of this brownfield site is sensitive to its surroundings, it could have a positive impact on the townscape and landscape.

3.237 For 2020-2041, the minimum growth scenario is expected to have mixed minor positive and minor negative effects, as it would result in more limited impacts on distinctive local landscape characteristics/features. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The effects are uncertain as the actual effect will depend on the final location, design, scale and layout of the proposed development. When fully built out, all scenarios are expected to have a mixed minor positive and significant negative uncertain effect. Note that it is expected that construction for elements coming forward beyond 2041 is likely to commence within the plan period.

7. Supporting a high-tech corridor by integrating homes and jobs

3.238 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios would have a smaller new settlement and maximum growth scenario would have a settlement twice the size. These developments have the potential to have a major impact on the landscape, as it would be introducing urban development into a predominantly rural location. In addition, this could lead to settlement coalescence and greater harm to the local landscape than other options. However, this option would concentrate such urbanisation in one area, therefore reducing such effects in other parts of Greater Cambridge. The exact location of these developments is not yet known and if designed sensitively considering the existing landscape it could have a positive impact on its surroundings. Developing a whole new settlement offers the opportunity to consider the character and distinctiveness of the area and to design sensitively from the outset.

3.239 The maximum growth scenario also includes development at two brownfield sites, Cambridge Airport and North East Cambridge. Although the airport and its associated buildings have formed part of the character and distinctiveness of this location for many years, they do not reflect the wider character of Cambridge. Development at North East Cambridge is on the edge of Cambridge, so it could affect views in and out of the city. However, if development at these sites is sensitive to their surroundings it could have positive impact on the townscape and landscape.

3.240 For 2020-2041, all growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The effects are uncertain as the actual effect will depend on the final location, design, scale and layout of the proposed development. When fully built out, all scenarios are expected to have a mixed minor positive and significant negative uncertain effect. Note that it is expected that construction for elements coming forward beyond 2041 is likely to commence within the plan period.

8. Expanding a growth area around transport nodes

3.241 Option 8 focuses homes at Cambourne and surrounding villages, along the A428 public transport corridor. These areas are to be served by a new railway station and Cambridgeshire Autonomous Metro.

3.242 The minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one smaller new settlement and the maximum growth scenario includes expansion by equivalent of a larger development. All growth options include development at three villages. Whilst this would increase urbanisation, this would be largely restricted to one location within Greater Cambridge. Expansion of Cambourne and villages along the A428 could result in coalescence of settlements along this corridor.

3.243 Both the medium and maximum also include development at a minor rural centres/ group villages within 5km of Cambourne. As such, the majority of development will be in rural locations and development may affect the surrounding landscape if it is not designed sensitively. Building a large new development in a rural location will have a major impact on the surrounding landscape. However, large new developments provide an opportunity to consider the character

and distinctiveness of the area and it design sensitively from the outset. The final location, design, scale and layout of the proposed development is not yet known so the effects are uncertain.

3.244 An additional source of supply for the medium and maximum growth scenarios includes development at North East Cambridge and, for the maximum growth scenario, Cambridge Airport. Although the airport and its associated buildings have formed part of the character and distinctiveness of this location for many years, they do not reflect the wider character of Cambridge. Development at North East Cambridge is on the edge of Cambridge and could therefore, potentially affect the character and distinctiveness of the city, along with views in and out of Cambridge. Again, if development at these sites is sensitive to their surroundings it could have positive impact on the townscape and landscape. The effects of development at these sites is therefore uncertain as the design, scale and layout of the proposed development is not yet known.

3.245 For 2020-2041, the minimum growth scenario is expected to have mixed minor positive and minor negative effects, as it would result in more limited impacts on distinctive local landscape characteristics/features. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The effects are uncertain as the actual effect will depend on the final location, design, scale and layout of the proposed development. When fully built out, all scenarios are expected to have a mixed minor positive and significant negative uncertain effect. Note that it is expected that construction for elements coming forward beyond 2041 is likely to commence within the plan period. However, there is more certainty that effects will occur in the longer term, therefore uncertainty is removed when sites are fully built out.

Best performing option

3.246 There is no one option which outperforms the other options. Option 5 'Dispersal – villages' performs relatively well, as more dispersed development is less likely to lead to significant landscape change (although significant negative effects are expected for the maximum growth scenario). Option 4 'Dispersal – new settlements' also performs relatively well, as new settlements have an opportunity to be designed sensitively to their surroundings and will not affect the historic townscape of Cambridge itself as development would not be focused within the city. However, new settlements would result in substantial change to the local landscape, which would change from rural to urban.

3.247 The maximum scenario under Option 3 'Edge of Cambridge – Green Belt' performs least well as it includes development on the edge of city at five different locations, which could affect the views in and out of the city as well as increasing urbanisation out of Cambridge.

SA Objective 7: To conserve and/or enhance the qualities, fabric, setting and accessibility of Greater Cambridge's historic environment.

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	-	-	-?	-?	--?	--?	--?	-?
Medium Growth	--	-	--?	--?	--?	--?	--?	-?
Maximum Growth	--	-	--?	--?	--?	--?	--?	-?

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Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	-	-		-?		--?	--?	-?
Medium Growth	--	-		--?		--?	--?	-?
Maximum Growth	--	-		--?		--?	--?	-?

1. Densification of existing urban areas

3.248 Option 1 would result in an increase in the density of development in Cambridge, which could have an adverse effect on the historic environment. Cambridge contains a high number of heritage assets, including listed buildings, as well as a number of scheduled monuments and registered parks and gardens, particularly associated with the University. There are a large number of conservation areas in the city. The minimum growth scenario focuses development within Cambridge urban area and at North East Cambridge, a brownfield site on the edge of the city. The latter involves the regeneration of a site on the edge of Cambridge, which would be unlikely to adversely affect the setting of heritage assets, if well-designed.

3.249 The medium growth scenario includes development at the edge of Cambridge on Green Belt land, which could affect views in and out of the city. Due to the uncertainty of the location of these developments, there is also the possibility that development could take place in or near to areas of historic interest.

3.250 Both the medium and maximum growth scenarios include development at Cambridge Airport, where there is an airport control tower that is Grade 2 listed. Development of the airport could remove the historic context of this feature. However, less air traffic may have a positive effect on the setting of the historic city.

3.251 The medium and maximum growth scenarios contain more development within Cambridge's urban area, which could affect the historic environment and character within the city.

3.252 Option 1, minimum growth scenarios is expected to have a minor negative effect and the medium and maximum growth scenarios are expected to have a significant negative effect in relation to this objective. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

2. Edge of Cambridge – outside the Green Belt

3.253 Option 2 includes development at Cambridge Airport for all growth options. The airport has a control tower that is Grade 2 listed, so development of the airport could remove the historic context of this feature. However, less air traffic may have a positive effect on the historic city.

3.254 This option for all growth scenarios includes development at a brownfield site in North East Cambridge which is on the edge of the city, which would be unlikely to adversely affect the setting of heritage assets, if well-designed.

3.255 Both the medium and maximum growth scenarios include the development of new settlements on public transport corridors. The minimum growth scenario includes a village site and the medium growth scenario includes development across rural and minor rural centres however, the exact locations are uncertain. Therefore, it is difficult to say whether these developments will affect Cambridge's historic environment.

3.256 All growth scenarios are expected to have a minor negative effect in relation to this objective. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

3. Edge of Cambridge – Green Belt

3.257 Option 3 would result in development around the edge of Cambridge for all growth scenarios. Many of Cambridge's designated historic assets are located within the city centre, although development on the edge of the city could affect views in and out of the city and would also be likely to affect the setting of the historic city. Both the medium and maximum growth scenarios estimate that five locations would be used compared with three in the minimum growth scenario. The medium scenario also includes some growth within the Cambridge urban area, which could negatively affect the setting of some of the many historic assets within the city, depending on the location and design of development.

3.258 Overall, a minor negative uncertain effect is expected for the minimum growth scenario and a significant negative uncertain effect is expected for the medium and maximum growth scenarios in relation to this objective. The effects are uncertain because the exact locations of the developments are unknown.

3.259 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

3.260 Option 4 includes the development of new settlements. The minimum growth scenario includes two smaller new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios include a new settlement on a road network.

3.261 There are a number of listed buildings, scheduled monuments, registered parks and gardens and conservation areas across Greater Cambridge, which could be affected by development under this option. Development in more rural locations may contain or be in proximity to historic assets with more extensive settings.

3.262 The minimum growth scenario is expected to have a minor negative uncertain effect. The medium and maximum growth scenarios are expected to have significant negative effects as larger development is less likely to be able to avoid historic assets and/or their settings. The effects are uncertain because the actual effect will depend on the location of development, as well as its final design, scale and layout, which may provide opportunities to avoid significant impacts. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

5. Dispersal – villages

3.263 Option 5 would result in an increase in development at villages across Greater Cambridge, many of which include conservation areas, contain listed buildings or are located

within close proximity to listed buildings, scheduled monuments and registered parks and gardens. If development is dispersed across a range of villages and rural centres, it is more likely to affect a wider range of areas.

3.264 Option 5 is therefore expected to have a significant negative uncertain effect for all growth scenarios. Whilst lower levels of development may be able to avoid the most sensitive areas to some extent, all options have potential to result in significant negative effects. The actual effect will depend on exact locations of development across the villages and rural centres, along with the final design, scale and layout of the proposed development which are unknown.

3.265 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.266 Option 6 focuses development along key public transport corridors and hubs through the expansion or intensification of existing villages or through more new settlements. Due to the fact there are a number of listed buildings, scheduled monuments and registered parks and gardens across Greater Cambridge, it is possible that development could be located within close proximity to one or more such assets. In particular, the public transport corridors to the west and south west have a number of listed buildings, conservation areas and registered parks and gardens within close proximity that may be affected by development. However, the exact location of development is unknown so effects are uncertain. All growth scenarios also include development at North East Cambridge, which is on the edge of city.

3.267 Option 6 is therefore expected to have a significant negative uncertain effect for all growth scenarios. The effect is uncertain as the actual effect will depend on the location of development, as well as its final design, scale and layout in relation to historic assets. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

7. Supporting a high-tech corridor by integrating homes and jobs

3.268 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios would have a smaller new settlement and maximum growth scenario would have a settlement twice the size. There are a number of listed buildings, scheduled monuments and conservation areas in the area south of Cambridge, so it is likely that development would be within close proximity to a heritage asset. However, the exact location of these settlements and village expansions (included in all growth scenarios) are unknown, so effects are uncertain.

3.269 The maximum growth scenario also includes development at two brownfield sites, Cambridge Airport and North East Cambridge. The airport includes a Grade 2 listed control tower, so development of the airfield could affect the historic context of the asset.

3.270 All growth scenarios are expected to have a significant negative uncertain affect in relation to this objective. The effects of the development under this option are uncertain as it will

depend on developments location, design, scale and layout. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

8. Expanding a growth area around transport nodes

3.271 Option 8 focuses homes at Cambourne and surrounding villages, along the A428 public transport corridor. These areas are to be served by a new railway station and Cambridgeshire Autonomous Metro.

3.272 The minimum and medium growth scenario includes the expansion of Cambourne by the equivalent of one smaller new settlement and the maximum scenario includes the equivalent of a larger settlement. All growth scenarios include development across three villages. Both the medium and maximum growth scenarios also include development at a minor rural centres/ group villages within 5km of Cambourne. Cambourne has a few listed buildings. However, it does not contain any conservation areas, scheduled monuments or registered parks and gardens. To the south and north east of Cambourne there are registered parks and gardens. To the south and west there are scheduled monuments. Although development close to Cambourne is unlikely to affect much in the way of historic assets or features, development in surrounding villages or rural locations could have a greater affect.

3.273 An additional source of supply for the maximum growth scenario is Cambridge Airport. The airport includes a Grade 2 listed control tower, so development of the airfield may affect the context of the historic asset. The medium and maximum growth scenarios include development at North East Cambridge which is on the edge of Cambridge.

3.274 All growth scenarios are expected to have a minor negative uncertain effect in relation to this objective. The effects are uncertain as the exact location, design, scale and layout of the proposed development is unknown. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

Best performing option

3.275 Options 2 'Edge of Cambridge – outside of Green Belt' and 8 'Expanding a growth area around transport nodes' perform best.

3.276 For Option 2, this is because development is focused on brownfield sites on the edge of Cambridge. As such, development will have more limited effects on the historic environment and assets found in the centre of Cambridge, although it would result in loss of Cambridge airfield, which provides the context for the listed control tower.

3.277 Option 8 performs relatively well because it has more potential to locate development in less sensitive areas in terms of the historic environment, although the maximum growth scenario would also result in the loss of the context for the listed control tower at Cambridge Airport.

3.278 All other options have the potential to result in significant harm to the historic environment, particularly under the medium and maximum growth scenarios as Greater Cambridge has a number of historic assets in both urban and rural locations, as well as within the city of Cambridge itself.

SA Objective 8: To make efficient use of Greater Cambridge’s land resources through the re-use of previously developed land and conserve its soils.

Housing provision between 2020-2041

Strategic Spatial Options / Growth scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	++/-?	--?	--?	--?	--/+?	--?	--?
Medium Growth	++	++/--?	--/+?	++/--?	--?	--/+?	--?	--/+?
Maximum Growth	++/-	++/--?	--?	--?	--?	--/+?	++/--?	++/--?

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	++/-?		--?		--/+?	--?	--?
Medium Growth	++	++/--?		++/--?		--/+?	--?	--/+?
Maximum Growth	++/-	++/--?		--?		--/+?	++/--?	++/--?

1. Densification of existing urban areas

3.279 Option 1 includes an increase in the density of development in Cambridge located on brownfield land at North East Cambridge and the redevelopment of existing urban uses under all growth scenarios. As such, development at these sites will not result in the loss of high-quality agricultural land. Furthermore, both the medium and maximum growth scenarios include development at Cambridge Airport which is previously developed land. However, the site does contain open grassland. The medium growth scenario also includes development at the edge of Cambridge on Green Belt land.

3.280 The minimum and medium growth scenarios are expected to have a significant positive effect against this objective, whereas the maximum growth scenario is expected to have mixed significant positive and minor negative effects. These effects are expected to be the same both within the plan period and when fully built out.

2. Edge of Cambridge – outside the Green Belt

3.281 Option 2 includes development on previously developed land at Cambridge Airport, however, it does contain open grassland and associated soil resources (although unlikely to be used for commercial farming). An additional source of supply includes development at North East Cambridge and development here would reduce the need to develop best and most versatile agricultural land.

3.282 Both the medium and maximum growth scenarios include the development of new settlements on public transport corridors. The minimum growth scenario includes a village site and the medium growth scenario includes development across rural and minor rural centres, but the exact locations are uncertain. Therefore, there is a possibility that development could occur on high-quality agricultural land.

3.283 A significant positive and minor negative uncertain effect is expected for the minimum growth scenario. A significant positive and significant negative uncertain effect is expected for the medium and maximum growth scenarios. The effects are uncertain because the location of the developments is not yet known. These effects are expected to be the same both within the plan period and when fully built out.

3. Edge of Cambridge – Green Belt

3.284 Option 3 would be likely to result in substantial development of greenfield land as all scenarios include development on Green Belt at different locations. Both the medium and maximum growth scenarios include five locations compared with three in the minimum growth scenario. The areas around the city of Cambridge consist of Grades 1, 2 and 3 agricultural land, therefore it is possible or even probable that high-quality agricultural land could be lost. The medium scenario also includes some development within the Cambridge urban area, which would help reduce the amount of agricultural land required for development.

3.285 All growth scenarios are expected to have significant negative uncertain effect against this objective. For the medium growth scenario, this is mixed with a minor positive effect. The effects are uncertain as the exact location of the developments is unknown.

3.286 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

3.287 Option 4 includes the development of new settlements. The minimum growth scenario includes two smaller new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios also include a new settlement on a road network. It is noted that a new settlement could be on, or partly on, brownfield land, although there is very limited brownfield land in the Cambridge urban area, therefore development of new settlements is likely to be on greenfield land, which could be high-quality agricultural land. However, the exact location of these new settlements is unknown, so the actual effect is uncertain.

3.288 The medium growth scenario includes development at a brownfield site in North East Cambridge on the edge of the city, which would help reduce the need for development on best and most versatile agricultural land.

3.289 A significant negative uncertain effect is expected for all growth scenarios except for the medium growth scenario where a mixed significant positive and significant negative uncertain effect is expected in relation to this objective, as the medium scenario includes development on previously developed land. The effects are uncertain as the exact location of the developments are unknown. These effects are expected to be the same both within the plan period and when fully built out.

5. Dispersal – villages

3.290 Option 5 would result in an increase in development at villages across Greater Cambridge. The expansion of these villages is likely to be on greenfield land, which could be high-quality agricultural land, as a large part of South Cambridgeshire consists of Grades 1, 2 and 3 agricultural land. However, the exact location of the development is unknown, so the effect is uncertain.

3.291 Option 5, for all growth scenarios, is expected to have a significant negative uncertain effect. The actual effect will depend on exact locations of development across the villages and rural centres.

3.292 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.293 Option 6 focuses development along key public transport corridors and hubs through the expansion or intensification of existing villages or through more new settlements. As such,

development is likely to be in rural locations and therefore could be on high-quality agricultural land. However, the exact location of this development is unknown, so the effect is uncertain.

3.294 All growth scenarios also include development at North East Cambridge, which is brownfield land on the edge of the city. As such, this could help minimise the need for development of best and most versatile agricultural land, although it does not make use of other brownfield sites, such as Cambridge Airport.

3.295 A minor positive and significant negative uncertain effect is expected for all growth scenarios against this objective. The effects are uncertain as the exact location of the development is unknown. These effects are expected to be the same both within the plan period and when fully built out.

7. Supporting a high-tech corridor by integrating homes and jobs

3.296 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios would include a smaller new settlement and maximum growth scenario would include a settlement twice the size. Due to the size of the new settlements, along with the expansion of villages (included in all growth scenarios), it is likely the development would be located within rural locations across the south of Cambridge. As such, much of the development is likely to be located on Grades 2 and 3 agricultural land. However, the exact location of development is unknown, so the effect is uncertain.

3.297 The maximum growth scenario also includes development at two brownfield sites, Cambridge Airport and North East Cambridge. Development of these sites would help minimise the amount of development required on best and most versatile agricultural land.

3.298 A significant negative uncertain effect is expected for all growth scenarios, except the maximum growth scenario where a significant positive and significant negative uncertain effect is expected in relation to this objective. The latter includes development on previously developed land. The effects are uncertain as the exact location of development is unknown. These effects are expected to be the same both within the plan period and when fully built out.

8. Expanding a growth area around transport nodes

3.299 Option 8 focuses homes at Cambourne and surrounding villages, along the A428 public transport corridor. These areas are to be served by a new railway station and Cambridgeshire Autonomous Metro.

3.300 The minimum and medium growth scenario includes the expansion of Cambourne by equivalent of one smaller new settlement and the maximum scenario includes the equivalent of two larger settlements. All growth scenarios include development across three villages. Both the medium and maximum also include development at a minor rural centre and group villages within 5km of Cambourne. Cambourne and the surrounding area has a large amount of Grade 1, 2 and 3 agricultural land, which could be lost to development. However, the exact location of the development is not yet known, so the effect is uncertain.

3.301 An additional source of supply for the medium and maximum growth scenario includes development at North East Cambridge. The maximum growth scenario also includes development at Cambridge Airport. Development at these sites could help minimise the amount of development required on best and most versatile agricultural land, although the medium option does not make use of other brownfield sites, such as Cambridge Airport.

3.302 The minimum growth scenario is expected to have a significant negative uncertain effect, the medium scenario is expected to have a mixed minor positive and significant negative effect and the and maximum growth scenario is expected to have a mixed significant positive and significant negative uncertain effect in relation to this objective. The effects are uncertain as the exact location, design, scale and layout of the proposed development is unknown. These effects are expected to be the same both within the plan period and when fully built out.

Best performing option

3.303 Option 1 'Densification of existing urban areas' performs best, as development under this option is likely to be focused on brownfield sites and therefore less to affect the wider rural areas of Greater Cambridge where there is the best and versatile agricultural land (although there will be some loss of greenfield land in the maximum growth scenario). The focus source of supply for Option 2 'Edge of Cambridge – outside Green Belt' is at Cambridge Airport, a large brownfield site, albeit with existing soil resources in the large, grassy areas. However, in order to provide sufficient housing this option also includes potential greenfield sites, including at new settlements for the medium and maximum growth scenarios. All options except Option 3 'Edge of Cambridge – Green Belt', 4 'Dispersal – new settlements' and 5 'Dispersal – villages' also include North East Cambridge, a large brownfield site on the outskirts of Cambridge. However, all options also include other sources of supply.

3.304 Option 5 'Dispersal – villages' performs least well as this options includes development at a broad range of rural locations, so it is likely that development will take place on greenfield land, which has greater potential to be Grade 1, 2 or 3 agricultural land.

SA Objective 9: To conserve mineral resources in Greater Cambridge.

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	-?	-?	-?	-?	-?	-?	-?	0
Medium Growth	-?	--?	--?	-?	--?	--?	--?	0
Maximum Growth	-?	--?	--?	-?	--?	--?	--?	0

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	-?	-?	-?	-?	-?	-?	-?	0
Medium Growth	-?	--?	--?	-?	--?	--?	--?	0
Maximum Growth	-?	--?	--?	-?	--?	--?	--?	0

1. Densification of existing urban areas

3.305 Cambridge contains a small number of Minerals Safeguarding Areas. It is therefore possible that developments coming forward under Option 1 could take place within these Minerals Safeguarding Areas, albeit minerals extraction is unlikely to take place in the urban area. The medium growth scenario also includes development on the edge of Cambridge on Green Belt land, which could coincide with a Minerals Safeguarding Area. However, exact locations of these developments are uncertain.

3.306 All growth scenarios include development in North East Cambridge, which is not located within a Minerals Consultation Area or Safeguarding Area. Both the medium and maximum growth scenarios include development at Cambridge Airport, which does not contain any Minerals Consultation or Safeguarding Areas.

3.307 Minor negative uncertain effects are identified in relation to all objectives. The effect is uncertain as the exact location of development within the Green Belt is unknown. These effects are expected to be the same both within the plan period and when fully built out.

2. Edge of Cambridge – outside the Green Belt

3.308 The Cambridge Airport (included in all growth options) site is not within a Minerals Consultation Area or Safeguarding Area. The additional source of supply for all growth scenarios includes development at North East Cambridge which is also not within a Minerals Consultation Area or Minerals Safeguarding Area. The additional source of supply for both the medium and maximum growth scenarios includes the development of new settlements on public transport corridors, which could be within a Minerals Consultation or Safeguarding Area. The minimum growth scenario includes a village site and the medium growth scenario includes development across rural centres and minor rural centres, but the exact locations are uncertain. Therefore, development under these growth scenarios could be located within a Minerals Consultation Area or Safeguarding Area.

3.309 Therefore, the minimum growth scenario is expected to have a minor negative uncertain effect in relation to this objective. The medium and maximum growth scenarios are expected to have a significant negative but uncertain effect in relation to this objective. The latter two options would result in higher levels of development so there is greater chance development could be within Minerals Consultation or Safeguarding Areas. The effects are uncertain as the exact location of the new settlements, development at rural centres and the village site are unknown. These effects are expected to be the same both within the plan period and when fully built out.

3. Edge of Cambridge – Green Belt

3.310 Option 3 includes development at the edge of Cambridge on substantial areas of greenfield land for all growth scenarios. There are a small number of Minerals sites, Safeguarding and Consultation Areas around Cambridge. It is therefore possible that particular development locations coming forward through Option 3 could take place within these Minerals Safeguarding or Consultation Areas.

3.311 The medium growth scenario includes development at urban areas across Cambridge, which does not include any Minerals Safeguarding or Consultation Areas.

3.312 Therefore, the minimum growth scenario is expected to have a minor negative uncertain effect in relation to this objective. The medium and maximum growth scenarios are expected to have a significant negative but uncertain effect in relation to this objective. The latter two options would result in higher levels of development so there is greater chance development could be within Minerals Consultation or Safeguarding Areas. The effect is uncertain as the exact location of development is unknown.

3.313 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

3.314 Option 4 includes the development of new settlements. The minimum growth scenario includes two smaller new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios also include a new settlement on a road network.

3.315 A small number of Minerals Safeguarding Areas and Minerals Consultation Areas are located outside of Cambridge. Due to the large proportion of the plan area that is not designated as a Minerals Safeguarding Area or Minerals Consultation Area, it is possible that a new settlement could avoid any effects on these, although this depends on the location of any particular developments that come forward.

3.316 Therefore, a minor negative uncertain effect is expected for all scenarios. These effects are expected to be the same both within the plan period and when fully built out.

5. Dispersal – villages

3.317 Option 5 proposes an increase in development at villages, rural and minor rural centres across Greater Cambridge. Therefore, development under this option would take place at rural locations in Greater Cambridge where there are Minerals Safeguarding and Consultation Areas. However, this depends on the specific location of any particular development that come forward.

3.318 Therefore, the minimum growth scenario is expected to have a minor negative uncertain effect in relation to this objective. The medium and maximum growth scenarios are expected to have a significant negative but uncertain effect in relation to this objective. The latter two options would result in higher levels of development so there is greater chance development could be within Minerals Consultation or Safeguarding Areas. The actual effect will depend on exact locations of development across the villages, rural and minor rural centres.

3.319 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.320 Option 6 proposes development along or around key public transport corridors and hubs through the expansion or intensification of existing villages or through new settlements. There

are a small number of Minerals Safeguarding and Consultation Areas located along existing and proposed key transport corridors, which could be affected by development under this option, although this depends on the location of any particular developments that come forward.

3.321 All growth scenarios also include development at a site in North East Cambridge, which is not within a Minerals Safeguarding and Consultation Area.

3.322 A minor negative uncertain effect is likely for the minimum growth scenario and a significant negative uncertain effect is likely for the medium and maximum growth scenarios. The latter two options would result in higher levels of development so there is greater chance development could be within Minerals Consultation or Safeguarding Areas. These effects are expected to be the same both within the plan period and when fully built out.

7. Supporting a high-tech corridor by integrating homes and jobs

3.323 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios include a smaller new settlement and maximum growth scenario includes a settlement twice the size. The south of Cambridge contains some Minerals Consultation and Safeguarding Areas which could intersect with development. However, the exact location of development is unknown, so effects are uncertain.

3.324 The maximum growth scenario also includes development at two brownfield sites, Cambridge Airport and North East Cambridge. Both of these sites are not located within Minerals Consultation and Safeguarding Areas.

3.325 A minor negative uncertain effect is expected for the minimum growth scenario in relation to this objective. A significant negative uncertain effect is expected for the medium and maximum growth scenarios. The effects are uncertain as the exact locations of development are not yet known. These effects are expected to be the same both within the plan period and when fully built out.

8. Expanding a growth area around transport nodes

3.326 Option 8 focuses homes at Cambourne, along the A428 public transport corridor and at villages along the corridor. These areas are to be served by a new railway station and Cambridgeshire Autonomous Metro.

3.327 The minimum and medium growth scenario include the expansion of Cambourne by the equivalent of one smaller new settlement and the maximum scenario includes expansion by equivalent of a larger new development. All options include development across three village sites. Both the medium and maximum scenarios also include development at minor rural centres/ group villages within 5km of Cambourne. Cambourne and the surrounding area do not contain any Minerals Safeguarding Areas and Minerals Consultation Areas so development is unlikely to coincide with these designations.

3.328 An additional source of supply for the medium and maximum growth scenarios includes North East Cambridge and for the maximum growth scenarios it includes development at Cambridge Airport. These sites do not contain Minerals Safeguarding or Consultation Areas.

3.329 All growth scenarios are expected to have a negligible effect in relation to this objective. The effects are uncertain as the exact location of the proposed development is unknown. These effects are expected to be the same both within the plan period and when fully built out.

Best performing option

3.330 Option 8 'Expanding a growth area around transport nodes' performs best. Option 8 performs well as Cambourne and the surrounding area where development would take place, is not within a Minerals Safeguarding or Consultation Area. All other options have potential to result in development that could be within Minerals Safeguarding Area or a Minerals Consultation Area, particularly for higher growth options.

SA Objective 10: To achieve sustainable water resource management and enhance the quality of Greater Cambridge's waters.

Housing provision between 2020-2041

Strategic Spatial Options / Growth scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-?	+/-?	--/+?	+/-?	--/+?	--/+?	+/-?	--/+?
Medium Growth	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?
Maximum Growth	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--?	++/--?		++/--?		++/--?	++/--?	++/--?
Medium Growth	++/--?	++/--?		++/--?		++/--?	++/--?	++/--?
Maximum Growth	++/--?	++/--?		++/--?		++/--?	++/--?	++/--?

1. Densification of existing urban areas

3.331 The minimum growth scenario includes growth in Cambridge urban area and North East Cambridge. Wastewater from these developments could be accommodated in the new Cambridge Water Recycling Centre (WRC) however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the new WRC, but interim mitigation may be necessary before new works are operational. North East Cambridge is not within a SPZ. Cambridge contains two Source Protection Zones (SPZs 1 and 2) by The Leys School. However, since built development is already present at these SPZs; it is unlikely that any development coming forward would take place at these sites. Furthermore, both the medium and maximum growth scenarios include development at Cambridge Airport which is not in a SPZ.

3.332 As well as the development listed above, the medium growth scenario also includes development at Cambridge Airport and on the Edge of Cambridge (Green Belt). Wastewater treatment (and maintaining water quality) for these developments is likely to be the same as stated above. The maximum growth scenario includes growth at Cambridge urban area and North East Cambridge, as well as development at Cambridge Airport.

3.333 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

3.334 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as North East Cambridge and Cambridge Airport, although this is more likely to come forward in the longer term.

3.335 As such, for 2020-2041, a mixed minor positive and minor negative effect with uncertainty is expected for the minimum growth scenario, whereas mixed minor positive and significant negative effects with uncertainty are expected for the medium and maximum scenarios. When fully built out, all scenarios are expected to have mixed significant positive and significant negative effects with uncertainty. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

2. Edge of Cambridge – outside the Green Belt

3.336 All growth options include development at North East Cambridge and Cambridge Airport. Wastewater from these developments could be accommodated in the new Cambridge WRC however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the new WRC, but interim mitigation may be necessary before new works are operational. North East Cambridge and Cambridge Airport are not within a SPZ.

3.337 The minimum growth scenario includes development at a village site and the medium growth scenario includes development at rural centres. Both the medium and maximum growth scenarios include the development of new settlements. Wastewater from new settlements is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. The exact locations of the village site and minor rural centres under the minimum and medium scenarios are uncertain. In addition, the medium and maximum growth scenarios include development at new settlements, for which the locations are also uncertain. As such, it currently is not possible to state whether these developments would be within a SPZ.

3.338 The Water Study identified that the maximum growth scenario has potential ‘deal breaker’ constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

3.339 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as North East Cambridge, Cambridge Airport and new settlements, although this is more likely to come forward in the longer term. At rural centres there may be some opportunities to improve water quality and implement water recycling on larger sites however, this is dependent on-site size and feasibility.

3.340 As such, for 2020-2041, a mixed minor positive and minor negative effect with uncertainty is expected for the minimum growth scenario, whereas a mixed minor positive and significant negative effect with uncertainty is expected for the medium and maximum growth scenarios. When fully built out, all scenarios are expected to have mixed significant positive and significant negative effects with uncertainty. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

3. Edge of Cambridge – Green Belt

3.341 All growth options include development on the Edge of Cambridge (Green Belt), with the medium growth scenario also containing development in Cambridge urban areas. Wastewater from these developments could be accommodated in the new Cambridge WRC however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the new WRC, but interim mitigation may be necessary before new works are operational. The medium growth option includes development in Cambridge where there are two Source Protection Zones (SPZs 1 and 2) by The Leys School. However, since built development is already present at these SPZs; it is unlikely that any development coming forward would take place at these sites. The locations on the Edge of Cambridge are unknown, so it is not possible to state whether these developments would be within a SPZ.

3.342 The Water Study identified that the maximum growth scenario has potential ‘deal breaker’ constraints due to water supply limitations, and the medium scenario is plausibly achievable, but

not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

3.343 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, therefore minor positive effects are identified but uncertain, as this depends on the size of individual development sites.

3.344 As such, all scenarios are expected to have mixed minor positive and significant negative effects with uncertainty. The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

4. Dispersal – new settlements

3.345 All growth options include development at new settlements across the greater Cambridge. Wastewater from new settlements is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. Maintaining water quality is likely to be achievable with some mitigation measures at the relevant WRC. Furthermore, as the locations of the new settlements are unknown, so it is not possible to state whether these developments would be within a SPZ.

3.346 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

3.347 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as at larger new settlements, although this is more likely to come forward in the longer term.

3.348 As such, for 2020-2041, a mixed minor positive and minor negative effect with uncertainty is expected for the minimum growth scenario, whereas a mixed minor positive and significant negative effect with uncertainty is expected for the medium and maximum growth scenarios. When fully built out, all scenarios are expected to have mixed significant positive and significant negative effects with uncertainty. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

5. Dispersal – villages

3.349 All growth options include development at rural centres, minor rural centres and villages however, the exact locations of these developments are unknown. Wastewater from these developments is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. Maintaining water quality is likely to be achievable, with some mitigation measures at the relevant WRC. As the locations of the new developments are unknown, it is not possible to state whether these developments would be within a SPZ.

3.350 The Water Study identified that the maximum growth scenario has potential ‘deal breaker’ constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

3.351 There may be some opportunities to improve water quality and implement water recycling on larger sites however, this is dependent on-site size and feasibility.

3.352 As such, all scenarios are expected to have mixed minor positive and significant negative effects with uncertainty. The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

6. Public transport corridors

3.353 All growth options include development at North East Cambridge, a new settlement and across eighteen villages along an existing or proposed public transport corridor. Wastewater from new settlements is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. Wastewater from Cambridge urban areas could be accommodated in the new Cambridge WRC however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the relevant WRC, but, with regards to the new Cambridge WRC, interim mitigation may be necessary before new works are operational. North East Cambridge is not in a SPZ. The locations of the new settlement and village sites are unknown, so it is not possible to state whether these developments would be within a SPZ.

3.354 The Water Study identified that the maximum growth scenario has potential ‘deal breaker’ constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions

cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

3.355 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as North East Cambridge and new settlements, although this is more likely to come forward in the longer term. There may be some opportunities to improve water quality and implement water recycling at larger settlements or village sites however, this is dependent on-site size and feasibility.

3.356 As such, for 2020-2041, a mixed minor positive and significant negative effect with uncertainty is expected for all growth scenarios. When fully built out, all scenarios are expected to have mixed minor significant positive and significant negative effects with uncertainty. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

7. Supporting a high-tech corridor by integrating homes and jobs

3.357 All growth scenarios include development at a new settlement along a public transport corridor and villages across greater Cambridge. Wastewater from new settlements is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. The maximum scenario also includes development at North East Cambridge and Cambridge Airport. Wastewater from these developments could be accommodated in the new Cambridge WRC however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the relevant WRC, but, with regards to the new Cambridge WRC, interim mitigation may be necessary before new works are operational. Furthermore, the locations of the new settlement and villages are unknown, so it is not possible to state whether these developments would be within a SPZ. North East Cambridge and Cambridge Airport are not in a SPZ.

3.358 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

3.359 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as a new settlement along a public transport corridor, North East Cambridge and Cambridge Airport, although this is more likely to come forward in the longer term. There may be some opportunities to improve water quality and implement water recycling at village sites however, this is dependent on-site size and feasibility.

3.360 As such, for 2020-2041, a mixed minor positive and minor negative effect with uncertainty is expected for the minimum growth scenario, whereas a minor positive and significant negative

effect with uncertainty is expected for the medium and maximum growth scenarios. When fully built out, mixed significant positive and significant negative effects with uncertainty are expected for all growth scenarios. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

8. Expanding a growth area around transport nodes

3.361 All growth options include the expansion of Cambourne by the equivalent of one new settlement. The minimum and medium growth scenarios include development at three villages along a public transport corridor. The medium and maximum scenarios also include development at minor rural centres and group villages within 5km of Cambourne. The medium growth scenario includes development at North East Cambridge and the maximum growth scenario includes development at North East Cambridge and Cambridge Airport.

3.362 Any extension to Cambourne or villages sited along the A428 public transport corridor may result in wastewater issues, as both Bourn and Uttons Drove WRC have capacity limitations that would require addressing. Maintaining water quality is likely to be achievable with some mitigation measures at the relevant WRC.

3.363 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios. However, the study also notes that development in the Cambourne area could have good opportunities for water resources with the potential to be supplied by bulk transfer, which could reduce water supply issues in the short term.

3.364 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as strategic extensions to Cambourne, North East Cambridge and Cambridge Airport, although this is more likely to come forward in the longer term. There may be some opportunities to improve water quality and implement water recycling at minor rural centres and village sites however, this is dependent on-site size and feasibility. As such, for 2020-2041, a minor positive and significant negative effect with uncertainty is expected for all growth scenarios. When fully built out, the minimum growth scenario is expected to have a mixed significant positive and significant negative effect with uncertainty for all growth scenarios. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

Best performing option

3.365 It is not possible to distinguish a best performing option The Water Study concludes that the most preferable spatial options are Option 2 'Edge of Cambridge – outside Green Belt' and Option 4 'Dispersal – new settlements', whereas the least preferable option is Option 5

'Dispersal – villages'. However, this also takes into account flood risk, which is considered under SA objective 11.

3.366 Availability of water resources is a major issue in Greater Cambridge and the surrounding area. The minimum growth scenario performs best, given that the Water Study states that this level of growth could be accommodated with feasible adjustments to next Water Resource Management Plan to mitigate impacts, whereas the medium growth scenario has significant constraints that would require regional-scale solutions to be operational by the mid-2030s. The maximum growth scenario performs worst against this SA objective, as growth cannot be accommodated without detrimental impacts and interim measures are unlikely to be able to mitigate scale of impact.

3.367 The minimum growth scenarios for Options 1 'Densification of existing urban areas', Option 2 'Edge of Cambridge – outside the Green Belt', Option 4 'Dispersal – new settlements and Option 7 'Supporting a high-tech corridor by integrating homes and jobs' perform relatively well, as only minor negative effects are expected.

SA Objective 11: To adapt to climate change, including minimising flood risk

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	--/+?	+/-?	++/-?	+/-?	-?	+/-?	+/-	-?
Medium Growth	--/+	+/-?	++/--	--/+?	-?	+/-?	+/-	-?
Maximum Growth	--/+	+/-?	++/--	--/+?	-?	+/-?	+/-	-?

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--?	++/-?		++/-?		++/-?	++/-	+/-?
Medium Growth	++/--	++/-?		++/--?		++/-?	++/-	+/-?
Maximum Growth	++/--	++/-?		++/--?		++/-?	++/-	+/-?

1. Densification of existing urban areas

3.368 The city of Cambridge contains several areas that fall within Flood Zones 2 and 3. This is due to the fact the River Cam runs through the city. Therefore, development in Cambridge could fall within Flood Zones 2 or 3, which are at a higher risk of flooding, and Cambridge also has high levels of surface water flood risk. Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site is not within Flood Zones 2 or 3.

3.369 As this option aims to focus the majority of development within the urban area, it reduces the need to use greenfield land to accommodate growth thereby reducing the amount of additional impermeable surfaces. This will help to reduce any additional risk of flooding through new development. This is particularly true for the minimum growth scenario. However, for the medium and maximum growth scenarios, additional sources of supply will be at Cambridge Airport and, for the medium growth scenario, an edge of Cambridge Green Belt site. Whilst Cambridge Airport is a brownfield site and does not fall within Flood Zones 2 or 3, it contains substantial, permeable, grassy areas and development on the edge of Cambridge is likely to be on greenfield land.

3.370 Development on the edge of Cambridge is likely to be on Greenfield land, although the edge of Cambridge does not contain many areas that fall within Flood Zones 2 or 3. There are also areas identified as being at risk of surface water flooding. Development at these sites is likely to increase the amount of impermeable areas that will reduce the infiltration capacity and flood retention provided by greenfield land. However, larger developments at the edge of Cambridge and Cambridge Airport could provide additional green space, which could build climate resilience in the area, especially if the open spaces are naturally designed compared to amenity space. The Water Study suggests that development at North East Cambridge and within the urban area have good opportunities to retrofit SuDS and other flood risk measures, and that development at Cambridge Airport could use on-site attenuation to reduce flood risk downstream.

3.371 For 2020-2041, significant negative effects with uncertainty are expected for the minimum growth scenario, whereas mixed minor positive and significant negative effects are expected for the medium and maximum growth scenarios. These effects are expected to be the same when fully built out.

2. Edge of Cambridge – outside the Green Belt

3.372 Option 2 includes urban development at Cambridge Airport for all growth scenarios in addition to extensions to the edge of Cambridge, with the opportunity of including a range of green spaces incorporating sustainable drainage systems. Cambridge Airport is within Flood Zone 1.

3.373 Similar to Option 1, this Option would make use of brownfield land, thereby reducing the need to use greenfield land and any additional risk of flooding through the increase of impermeable surfaces. Whilst Cambridge Airport is a brownfield site and does not fall within

Flood Zones 2 or 3, it has some surface water flood risk and contains large areas of permeable, grassy areas and development on the edge of Cambridge is likely to be on greenfield land. Additional sources of supply will also be delivered North East Cambridge for all scenarios. The Water Study states that North East Cambridge is in an area at low risk of flooding and has good opportunities to retrofit SuDS and other flood risk measures, and that development at Cambridge Airport could use on-site attenuation to reduce flood risk downstream.

3.374 For the minimum growth scenario one village site is also proposed and the medium scenario includes growth at rural centres and minor rural centres. The medium and maximum growth scenarios also include development at new villages. The locations of these are unknown, therefore it is not known if these will fall within areas at high risk of flooding and similarly opportunities for managing flood risk (e.g. on-site attenuation) are uncertain. However, the medium and maximum scenarios are likely to result in greater loss of greenfield land, which could increase the risk of surface water flooding, although new settlements are likely to include additional greenspace, which could incorporate sustainable drainage systems and build climate resilience in the area.

3.375 For 2020-2041, mixed minor positive and minor negative effects are expected for all options. These are uncertain, as the locations of new settlements and village sites/rural centres are unknown. When fully built out, the positive effects are expected to be significant.

3. Edge of Cambridge - Green Belt

3.376 Option 3 includes the development of new sites in Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a broad range of locations. The edge of Cambridge does not contain many areas that fall within Flood Zones 2 or 3, although the Water Study notes that existing fluvial flood and surface water flood risk may make individual sites difficult to deliver, depending on location. Development at these sites is also likely to increase the amount of impermeable areas will reduce the infiltration capacity and flood retention provided by greenfield land. However, these developments, particularly larger individual developments, present the opportunity for green spaces to be delivered on-site and to use large scale features in larger sites to reduce flood risk downstream. In addition, provision of green space could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space. Given that this option is expected to be fully built out within the plan period, such measures are considered more likely to be delivered within the plan period.

3.377 The medium growth scenario also includes growth within the urban area of Cambridge. The urban area contains several areas that fall within Flood Zones 2 and 3. This is due to the fact the River Cam runs through the city. Therefore, development in Cambridge could fall within Flood Zones 2 or 3, which are at a higher risk of flooding, and Cambridge also has high levels of surface water flood risk.

3.378 Overall, mixed significant positive and minor negative effects with uncertainty are expected for the minimum growth scenario (as development at fewer locations offers more scope to avoid areas at higher risk of flooding), whereas mixed significant positive and significant negative effects are expected for the medium and maximum growth scenarios.

3.379 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

3.380 Option 4 involves the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. Both the medium and maximum growth scenarios include a new settlement on the road network as well.

3.381 New settlements are likely to be developed on greenfield land. Therefore, a settlement would increase the risk of surface run-off and potentially flooding in the area through the increase of impermeable surfaces. Depending on where the new settlements might come forward, there are large amounts of land within Flood Zones 2 and 3 within the northern part of South Cambridgeshire and as such if development is located there it may be at higher risk of flooding. However, the Water Study states that it is expected new settlements will be located on areas of low or medium flood risk, where it is feasible to safely manage risk within development, and that new settlements present good opportunities to use large scale features in new settlements to reduce flood risk downstream. In addition, it is likely that additional green space would be provided which could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space.

3.382 For 2020-2041, mixed minor positive and minor negative effects with uncertainty are expected for the minimum growth scenario, whereas mixed minor positive and significant negative uncertain effects are expected for the medium and maximum growth scenarios. This is because the medium and maximum scenarios are likely to provide four new settlements thereby substantially reducing the amount of greenfield land available to provide infiltration capacity and flood retention and increasing the likelihood development will coincide with an area at high risk of flooding. When fully built out, mixed significant positive and minor negative effects with uncertainty are expected for the minimum growth scenario, whereas mixed significant positive and significant negative effects are expected for the medium and maximum growth scenarios.

5. Dispersal – villages

3.383 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. It is likely that development within the villages of Greater Cambridge will be on greenfield land which would increase the risk of flooding in the area through the increase of impermeable surfaces. This will reduce the infiltration capacity and flood retention provided by greenfield land. In Greater Cambridge Flood Zones 2 and 3 correspond with the River Cam and its tributaries, therefore there are patches of Flood Zones 2 and 3 throughout the area. As such an increase in flooding would depend on the exact location of the development. Sites coming forward under this option are unlikely to be large enough to offer significant betterment in terms of flood risk.

3.384 Overall, minor negative effects are expected against each scenario with uncertainty.

3.385 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.386 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and development across 18 villages with existing or proposed public transport corridors.

3.387 North East Cambridge lies in an area at low risk of flooding, but could present an opportunity to retrofit SuDS. Flood Zones 2 and 3 correspond with the River Cam and its tributaries, therefore there are patches of Flood Zones 2 and 3 throughout the area. As such the developments could be at risk of flooding. However, the exact locations are uncertain at this time. The Water Study states that it is expected new settlements will be located on areas of low or medium flood risk, where it is feasible to safely manage risk within development, and that new settlements present good opportunities to use large scale features in new settlements to reduce flood risk downstream. It is also likely that additional green space would be provided at the new settlements which could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space.

3.388 For 2020-2041, mixed minor positive and minor negative effects with uncertainty are expected against each scenario. When fully built out, all growth scenarios are expected to have mixed significant positive and minor negative effects.

7. Supporting a high-tech corridor by integrating homes and jobs

3.389 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement. All growth scenarios also include growth at villages to the south of Cambridge.

3.390 As the development will be concentrated in the south of Cambridge it is less likely that development will be located in Flood Zones 2 and 3 as the majority of areas at risk of flooding lie within the north of the plan area. However, development is likely to increase the risk of flooding with the increase of impermeable areas via development on greenfield land. The Water Study states that it is expected new settlements will be located on areas of low or medium flood risk, where it is feasible to safely manage risk within development, and that new settlements present good opportunities to use large scale features in new settlements to reduce flood risk downstream. In particular, the Green Infrastructure Study states that focusing development in this area could provide opportunities for woodland and wetland-grassland habitat, which could support flood management. In addition, it is expected that new settlements would include green space, which could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space.

3.391 The maximum growth scenario includes growth at North East Cambridge and Cambridge Airport. North East Cambridge is not within Flood Zones 2 or 3. Cambridge Airport is within Flood Zone 1, although it has some surface water flood risk and development of this site would

result in loss of a large, grassy area, which could increase surface water flooding. The Water Study recognised that North East Cambridge has good opportunities to retrofit SuDS and other flood risk reduction measures to brownfield sites, reducing risk of flooding to site and elsewhere and Cambridge Airport offers good opportunities to use on-site attenuation to reduce flood risk downstream.

3.392 For 2020-2041, mixed minor positive and minor negative effects are expected against each growth scenario. The positive effects are expected to be positive when fully built out.

8. Expanding a growth area around transport nodes

3.393 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and Cambridge Autonomous Metro serving the areas. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger extension. All options also include development at villages along the A428 and the medium and maximum scenarios include further growth at minor rural centres and group villages within 5km of Cambourne.

3.394 It is likely that development at Cambourne, along the A428 and at the villages/minor rural centres will be on greenfield land, therefore the risk of flooding is likely to rise due to the increase of impermeable areas. There are patches of Flood Zones 2 and 3 within the southern section of Cambourne and the Water Study states that the area has some surface water flood risk, but it should be feasible to safely manage this within development. As such the developments could be at some risk of flooding, however the exact locations are uncertain at this time. The Water Study states there may be some opportunities to use on-site attenuation in new settlements to reduce flood risk downstream. In addition, the large scale of development at Cambourne would be expected to provide new green space, which could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space.

3.395 The Green Infrastructure Study states that this option could provide opportunities to enhance wetland and grassland habitat, which could support flood management.

3.396 The medium and maximum scenarios include growth at North East Cambridge and the maximum growth scenario also includes growth at Cambridge Airport. North East Cambridge is not within Flood Zones 2 or 3. Cambridge Airport is within Flood Zone 1 and Cambridge Airport offers good opportunities to use on-site attenuation to reduce flood risk downstream, although development of this site would result in loss of a large, grassy area, which could increase surface water flooding.

3.397 For 2020-2041, minor negative effects are expected against each scenario with uncertainty. When fully built out, mixed minor positive and minor negative effects with uncertainty are expected.

Best performing option

3.398 For 2020-2041, the minimum scenario for Option 3 'Edge of Cambridge – Green Belt' performs best, as it is more likely to be able to avoid areas at high risk of flooding and could

include flood betterment measures. This is comparable to the following options when fully built out: Options 2 'Edge of Cambridge – outside the Green Belt', 6 'Public transport corridors', 7 'Supporting a high-tech corridor by integrating homes and jobs' and the minimum growth scenario for Option 4 'Dispersal – new settlements', which also perform well.

3.399 The Water Study concludes that the most preferable spatial options are Option 2 'Edge of Cambridge – outside Green Belt' and Option 4 'Dispersal – new settlements', whereas the least preferable option is Option 5 'Dispersal – villages'. However, this also takes into account water resources, water quality and wastewater treatment, which are considered under SA objective 10.

SA Objective 12: To minimise Greater Cambridge's contribution to climate change

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	+/-	+/-?	--/+?	--	--/+?	+/-?	--/+
Medium Growth	++/-	--/+	+/-?	--/+?	--	++/--?	++/-?	--/+
Maximum Growth	++/-	--/+	++/-?	--/+?	--	++/--?	++/-?	--/+

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	++/-		++/--		++/--?	++/-	++/--?
Medium Growth	++/-	++/--		++/--		++/--?	++/-?	++/--?
Maximum Growth	++/-	++/--		++/--		++/--?	++/-	++/--?

3.400 Note that the assessments below have been partly informed by the Transport Study. It is noted that the Transport Study is based on the maximum growth scenario. In the absence of equivalent information for the minimum and medium scenarios, this has also been used as the starting point for assessing the other growth scenarios, although the overall scores in the table above are influenced by a number of factors.

1. Densification of existing urban areas

3.401 Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site will be brought forward through the AAP.

3.402 The medium and maximum growth scenarios also include development at Cambridge Airport, at which a range of services and facilities, employment opportunities, open space and walking and cycling can be designed in from the outset of design. As such, this option is likely to reduce the need to travel as development will be within close proximity to existing services and facilities with the option to also incorporate additional services and facilities from the outset. The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities and employment opportunities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities and employment opportunities, although this is not the case for Cambridge Airport.

3.403 The Cambridge Airport area has been identified as having high levels of estimated soil carbon and carbon in vegetation, which could be disturbed or lost as a result of development.

3.404 As this option aims to focus the majority of development within the urban area, which is the main centre for services and facilities and employment opportunities, the need to travel by car will reduce thereby encouraging more sustainable methods of transport like walking and cycling and minimising the amount of greenhouse gas emissions. This is particularly true for the minimum growth scenario.

3.405 The medium and maximum growth scenarios may put more pressure on local services and facilities, due to the increased density of development in the Cambridge urban area. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. This could lead to residents travelling further afield to access services and facilities, increasing carbon emissions from transport. Whilst the medium and maximum scenarios are also likely to include larger developments that may provide new services and facilities, these would be located outside of Cambridge and therefore would not be able to fully mitigate the effects of higher densities in the urban area. Nevertheless, the Transport Study stated that this option was one of the best performing (for the maximum growth scenario) as it will result in fewer car trips and generate less traffic than other options. This option will result in a higher proportion of trips taken by active modes of transport than any other option. The Zero Carbon Study also found that this option performs best in terms of minimising carbon emissions. Whilst this is primarily related to lower levels of car travel, high density development, such as high-rise flats, have less embodied carbon per dwelling.

3.406 Overall, significant positive effects are expected for the minimum growth scenario, whereas mixed significant positive and minor negative uncertain effects are expected for the medium and maximum growth scenarios, for both 2020- 2041 and when fully built out.

2. Edge of Cambridge – outside the Green Belt

3.407 Option 2 includes development at Cambridge Airport and North East Cambridge for all growth scenarios, which offer the opportunity to incorporate employment opportunities, a GP surgery, a range of open space, recreational and sporting facilities, and walking and cycling can be designed in from the outset of design. As such, this option is likely to reduce the need to travel as development will be within close proximity to existing services and facilities with the option to also incorporate additional services and facilities from the outset.

3.408 The Cambridge Airport area has been identified as having high levels of estimated soil carbon and carbon in vegetation, which could be disturbed or lost as a result of development.

3.409 The medium and maximum growth scenarios propose two new settlements on public transport corridors. It is likely that these settlements will be designed so that residents can access the centre of each settlement by active travel. However, even with public transport options available, many residents are likely to drive for longer journeys, for example to access employment in Cambridge. The minimum growth scenario also includes a village site and the medium scenario includes growth at rural centres and minor rural centres, which would likely rely on private transport to amenities, facilities and services, which may increase the emission of greenhouse gases. New settlements, provided by the medium and maximum scenarios, offer the opportunity to incorporate services and facilities and employment opportunities into the design from the outset. The medium and maximum growth scenarios include development of new settlements, which are expected to provide new services and facilities and employment opportunities, particularly larger settlements. The medium growth scenario includes development at rural centres and minor rural centres, which may help ensure the continued vitality and viability of these centres, although there is a risk that a larger amount of development at any one rural settlement could lead to increased pressure on services and facilities and lead to an increased need to travel by private car to access facilities elsewhere.

3.410 The Transport Study demonstrated that this option is likely to result in a relatively high proportion of trips taken by active transport, but will generate more distance travelled, travel time and delay than options 1 and 7 (for the maximum growth scenario).

3.411 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at new settlements, North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport or the new settlements. New settlements could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

3.412 For 2020-2041, mixed minor positive and significant negative effects are expected for medium and maximum scenarios. Mixed minor positive and minor negative effects are recorded for the minimum scenario, given that the majority of development will have good access to services and facilities in Cambridge by sustainable modes of transport. Mixed significant positive and minor negative effects are expected for the minimum scenario and mixed significant positive and significant negative effects are expected for the medium and maximum scenarios when fully built out.

3. Edge of Cambridge – Green Belt

3.413 Option 3 includes the development of new sites in the Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a broad range of locations. The maximum growth scenario includes higher delivery rates at the Green Belt sites. It is likely that additional services and facilities and employment opportunities will also be provided on site, but these may not be provided in the short term and are likely to be more limited under the minimum and medium growth scenarios. Larger developments have more scope to be designed in a way that encourages walking and cycling which is likely to minimise the area's contribution to climate change. In addition, it is likely for these developments to have good access to services and facilities, jobs and public transport options within Cambridge. These are likely to be accessible via public transport from the new developments. Larger urban extensions could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks. Smaller extensions are less likely to have these benefits.

3.414 Areas in the east and south have high estimated levels of soil carbon. Development on land supporting high levels of carbon may cause disturbance or loss thereof.

3.415 The medium growth scenario also includes growth within the Cambridge urban area, which is likely to help minimise carbon emissions by providing housing close to services, facilities, jobs and public transport links.

3.416 The Transport Study demonstrated that this option is likely to result in a relatively high proportion of trips taken by active transport, but will generate more distance travelled, travel time and delay than options 1 and 7 (for the maximum growth scenario) .

3.417 Overall, the minimum and medium growth scenarios are expected to have a mixed minor positive and minor negative effect with uncertainty and the maximum growth scenario is expected to have a significant positive and minor negative effect with uncertainty.

3.418 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

3.419 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. Under the minimum growth scenario, the two new settlements would be on a public transport corridor, which would reduce the need for private transport and reduce greenhouse gas emissions. However, both the medium and maximum growth scenarios include a new settlement on the road network. As such, residents would be more reliant on private transport which could increase the area's contribution to climate change. Even with public transport options available, many residents are likely to drive for longer journeys, for example to access employment in Cambridge. Nevertheless, larger settlements have more scope to be designed in a way that encourages walking and cycling, which will likely minimise the area's contribution to climate change.

3.420 New settlements would be expected to provide a range of new services and facilities to meet the day to day needs of residents and increase the amount of employment opportunities within the settlement. However, for the minimum and medium scenarios in particular, it is

considered unlikely that the full range of services and facilities and job opportunities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. New settlements could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

3.421 The Transport Study suggests that this option is 'medium performing' overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but not as much as other options and will generate more distance travelled, travel time and delay than options 1 and 7.

3.422 Overall, these growth scenarios are expected to have a mixed minor positive and significant negative effect with uncertainty from 2020-2041 and a mixed significant positive and significant negative effect with uncertainty when built out.

5. Dispersal – villages

3.423 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. There are fewer Rural Centres so the absolute growth in each village is significantly greater for each Rural Centre than Minor Rural Centre. Rural Centres are likely to have more amenities, services and facilities and employment opportunities than Minor Rural Centres however, they could become overwhelmed and reach capacity. As such, an increase in the reliance on private vehicles is likely in order to access services and facilities and employment opportunities elsewhere, thereby leading to an increase in greenhouse gas emissions. This will be more prevalent in villages without good public transport links, although most are not as well connected via public transport (particularly regarding frequency of services), than larger centres. The Zero Carbon Study found that this option performs worst in terms of increased carbon emissions.

3.424 Overall, each scenario is likely to have negative effects on this objective for all scenarios.

3.425 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.426 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and across 18 villages with existing or proposed public transport corridors. New settlements could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

3.427 Development at North East Cambridge will provide new services and facilities and employment opportunities, as well as be in close proximity to existing facilities within Cambridge city. In addition, this option concentrates development along public transport corridors, it may

reduce the use of private vehicles and greenhouse gas emissions. However, an increase in residents could lead to overcapacity if additional services are not provided, leading people to travel to services further afield; this is most likely to occur at the 18 villages. Even with public transport options available, many residents are likely to drive for longer journeys, for example from new settlements and more rural settlements to access employment in Cambridge.

3.428 In addition, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. This is likely to be more pronounced for the minimum growth scenario, during the plan period, due to the smaller amount of development likely to be completed at a new settlement site. Under the maximum growth scenario however, growth at these locations is likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

3.429 The Transport Study suggests that this option is 'medium performing' overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but not as much as other options and will generate more distance travelled, travel time and delay than options 1 and 7. The Zero Carbon Study found that this option performs second best (after option 1) in terms of minimising carbon emissions.

3.430 For 2020-2041, mixed minor positive and significant negative effects are expected for the minimum scenario, whereas mixed significant positive and significant negative effects are expected for the medium and maximum growth scenarios. All scenarios are expected to have mixed significant positive and significant negative effects when fully built out. All effects are considered uncertain.

7. Supporting a high-tech corridor by integrating homes and jobs

3.431 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement however, both are on public transport corridors.

3.432 The Review of Spatial Options in relation to Green Infrastructure suggests that development in this area provides opportunities for enhancement of woodland and wetland-grassland mosaic, which could serve to support carbon capacity.

3.433 All growth scenarios include development across five villages all with existing or proposed public transport nodes. However, the medium growth scenario could include 25% of development not on public transport corridors. Overall, it is likely that the need to travel by car will be minimised, but the medium growth scenario may also increase the use of private vehicles and greenhouse gas emissions. Whilst there is likely to be some private car use resulting from development, in this area south of Cambridge employees could travel to work using active travel or public transport especially as this option supports the life sciences cluster area around the south of Cambridge.

3.434 The maximum growth scenario also includes growth at North East Cambridge and Cambridge Airport, which will provide new services and facilities and employment opportunities, as well as low growth in the urban area. As such, this scenario will be less likely to put pressure on existing services and facilities, as well as providing new ones to serve new development, thereby reducing the need to travel by private car to access facilities elsewhere, resulting in significant positive effects. The Cambridge Airport area has been identified as having high levels of estimated soil carbon and carbon in vegetation, which could be disturbed or lost as a result of development.

3.435 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period, resulting in a need for residents to travel further to access these. Under the maximum growth scenario however, growth at new settlements is likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs, although there is a less certainty on this with regards to Cambridge Airport. New settlements could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

3.436 Nevertheless, the Transport Study stated that this option was one of the best performing as, whilst it will not have the highest non-car mode share, it will reduce overall travel distance, time and delay, leading to reduced impacts on the wider road network and associated carbon emissions (for the maximum growth scenario). Given that the Transport Study is based on the maximum growth scenario, it is expected that positive effects for the minimum scenario, within the plan period, will be minor, rather than significant. However it is noted that the Zero Carbon Study suggested that this option is more of a medium-performing option, resulting in some uncertainty.

3.437 For 2020-2041, the minimum scenario is expected to have mixed minor positive and minor negative effects with uncertainty, whereas the medium and maximum scenarios are likely to have significant positive and minor negative effects with uncertainty. When fully built out, all scenarios are expected to have significant positive and minor negative effects, although there is uncertainty associated with the medium growth scenario as there is a greater risk of private vehicles being utilised.

8. Expanding a growth area around transport nodes

3.438 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and Cambridge Autonomous Metro serving these areas, although it is uncertain whether these will come forward within the plan period, particularly the railway link. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger development. All of these developments would have access to the railway station, which would help to reduce reliance on travelling by car thereby minimising greenhouse gas emissions. Furthermore, new settlements have the opportunity to encourage and accommodate walking and cycling from the initial design stage. However, currently the development at Cambourne is not well served by public transport, so positive effects could be

felt in the long term when the rail station and Cambridge Autonomous Metro are implemented, but in the short term development in Cambourne and along the A428 could cause additional residents utilising private vehicles to travel. In addition, some residents are still likely to travel by car, particularly to locations not served by the train or Cambridge Autonomous Metro. Larger urban extensions could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

3.439 This option also includes growth at villages along the A428 public transport corridor, which will be well served by public transport, and therefore contribute to minimising greenhouse gas emissions, in the long term, but may be reliant on private car use to some extent. The medium and maximum options include growth at other villages/settlements within 5km of Cambourne that may not be on public transport corridors. Such growth is likely to result in increases in car use to access employment, services and facilities.

3.440 The medium and maximum growth scenarios include growth at North East Cambridge and, for the maximum growth scenario, growth at Cambridge Airport. These sites are likely to have good access to the services, facilities and public transport links within Cambridge as well as providing new ones, therefore minimising the need to travel and associated greenhouse gas emissions. For the medium scenario, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of growth at North East Cambridge between 2020 and 2041, as a lower level of growth is expected within the plan period. Under the maximum growth scenario, growth at North East Cambridge is more likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport. The Cambridge Airport area has been identified as having high levels of estimated soil carbon and carbon in vegetation, which could be disturbed or lost as a result of development.

3.441 The Transport Study suggests that this option is 'medium performing' overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but will generate more distance travelled, travel time and delay than options 1 and 7.

3.442 For 2020-2041, all scenarios are likely to have mixed minor positive and significant negative effects. When fully built out, each scenario is expected to have significant positive and significant negative effects with uncertainty.

Best performing option

3.443 Option 1: 'Densification of existing urban areas' performs best, as it locates development within the existing urban area. As such, proximity to existing services, facilities, employment opportunities and public transport is likely to be better than the other options. In addition, the opportunity to cycle and walk are more prevalent within the urban area, but also could be developed within other sources of supply in the medium and maximum scenarios as active travel could be included from the design stages. Higher density development also tends to have lower embodied carbon. The Transport Study identified that Option 7 'Supporting a high-tech corridor by integrating homes and jobs' also performs well (for the maximum growth scenario), as it will reduce traffic in the wider Cambridge area and reduce journey length/times to work. However, the Zero Carbon Study suggested that Option 6 'Public transport corridors' would likely lead to lower carbon emissions than Option 7. The Transport Study also found that

Options 2 'Edge of Cambridge – outside Green Belt' and Option 3 'Edge of Cambridge – Green Belt' would help support active travel (based on the maximum growth scenario).

3.444 Larger urban extensions, such as those that may come forward through options 3 'Edge of Cambridge – Green Belt' and 8 'Expanding a growth area around transport nodes', as well as new settlements, may present greater opportunity to incorporate sustainable energy generation, such as district heating networks. All development could also help to minimise carbon emissions through energy efficient design etc., although the Zero Carbon Study highlights that the main source of carbon emissions for all options is transport.

3.445 Option 5 'Dispersal – villages' performs least well as it is likely to lead to development with high levels of dependency on the private car.

SA Objective 13: To limit air pollution in Greater Cambridge and ensure lasting improvements in air quality

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--	--/+	+/-?	--/+?	--	--/+?	+/-	--/+
Medium Growth	++/--	--/+	--/+?	--/+?	--	--/+?	++/-?	--/+
Maximum Growth	++/--	--/+	++/--?	--/+?	--	--/+?	++/-	--/+

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--	++/--		++/--?		++/--?	++/-	++/--?
Medium Growth	++/--	++/--		++/--?		++/--?	++/-?	++/--?
Maximum Growth	++/--	++/--		++/--?		++/--?	++/--	++/--?

1. Densification of existing urban areas

3.446 Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site will be brought forward through the AAP.

3.447 The medium and maximum growth scenarios also include development at Cambridge Airport. A range of services and facilities, employment opportunities, open space and walking and cycling can be designed in from the outset of design. As such, this option is likely to reduce the need to travel as development will be within close proximity to existing services and facilities with the option to also incorporate additional services and facilities from the outset.

3.448 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities and employment opportunities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities and employment opportunities, although this is not the case for Cambridge Airport.

3.449 As this option aims to focus the majority of development within the urban area, which is the main centre for services and facilities, the need to travel by car will reduce thereby encouraging more sustainable methods of transport like walking and cycling and minimising the effects of poor air quality. This is particularly true for the minimum growth scenario.

3.450 The medium and maximum growth scenarios may put more pressure on local services and facilities, due to the increased density of development in the Cambridge urban area. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. This could lead to residents travelling further afield to access services and facilities, increasing air pollution from transport. Whilst the medium and maximum scenarios are also likely to include larger developments that may provide new services and facilities and employment opportunities, these would be located outside of Cambridge and therefore would not be able to fully mitigate the effects of higher densities in the urban area. Nevertheless, the Transport Study stated that this option was one of the best performing as it will result in fewer car trips and generate less traffic than other options (for the maximum growth scenario). This option will result in a higher proportion of trips taken by active modes of transport than any other option.

3.451 In addition, there is an AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Whilst development would have good access to services and facilities by non-car modes, it is likely some residents will travel by car or other motorised vehicle, therefore, it is likely that additional development within the urban area and at North East Cambridge will exacerbate the poor air quality within the area.

3.452 Overall, mixed significant positive and significant negative effects with uncertainty are expected for aa growth scenarios, for both 2020-2041 and when fully built out.

2. Edge of Cambridge – outside the Green Belt

3.453 Option 2 includes development at Cambridge Airport and North East Cambridge for all growth scenarios, which offer the opportunity to incorporate employment opportunities, a GP surgery, a range of open space, recreational and sporting facilities, and walking and cycling can be designed in from the outset of design. As such, this option is likely to reduce the need to travel as development will be within close proximity to existing services and facilities and jobs with the option to also incorporate additional services and facilities and employment opportunities from the outset.

3.454 The medium and maximum growth scenarios propose two new settlements on the public transport corridors. It is likely that these settlements will be designed so that residents can access the centre of each settlement by active travel. However, even with public transport options available, many residents are likely to drive for longer journeys, for example to access employment in Cambridge. The minimum growth scenario also includes a village site and the medium scenario includes growth at rural centres and minor rural centres, which would likely rely on private transport to access amenities, facilities and services and employment opportunities and this may worsen air quality. New settlements, provided by the medium and maximum scenarios, offer the opportunity to incorporate services and facilities into the design from the outset. The medium and maximum growth scenarios include development of new settlements, which are expected to provide new services and facilities, particularly larger settlements. The medium growth scenario includes development at rural centres and minor rural centres, which may help ensure the continued vitality and viability of these centres, although there is a risk that a larger amount of development at any one rural settlement could lead to increased pressure on services and facilities. This could lead to residents travelling further afield to access services and facilities, increasing air pollution from transport.

3.455 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at new settlements, North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport or the new settlements.

3.456 In addition, there is one AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Whilst development in and around Cambridge would have good access to services and facilities by non-car modes, it is likely some residents will travel by car or other motorised vehicle, therefore, it is likely that development will exacerbate the poor air quality within the area.

3.457 The Transport Study demonstrated that this option is likely to result in a relatively high proportion of trips taken by active transport, but will generate more distance travelled, travel time and delay than options 1 and 7 (for the maximum growth scenario).

3.458 For 2020-2041, mixed minor positive and significant negative effects are expected for all growth scenarios. Mixed significant positive and significant negative effects are expected for all scenarios when fully built out.

3. Edge of Cambridge – Green Belt

3.459 Option 3 includes the development of new sites in the Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a broad range of locations. The maximum growth scenario includes higher delivery rates at the Green Belt sites. It is likely that additional services and facilities and employment opportunities will also be provided on site, but these may not be provided in the short term and are likely to be more limited for the minimum and medium growth scenarios. Larger developments have more scope to be designed in a way that encourages walking and cycling which is likely to minimise impacts on the area's air quality. In addition, it is likely for these developments to have good access to public transport options in Cambridge.

3.460 The medium growth scenario also includes growth within the Cambridge urban area, which is likely to help minimise carbon emissions by providing housing close to services, facilities, jobs and public transport links. Whilst development in and around Cambridge would have good access to services and facilities by non-car modes, it is likely some residents will travel by car or other motorised vehicle, therefore exacerbating poor air quality in this area, including the city centre and A14 AQMAs .

3.461 The Transport Study demonstrated that this option is likely to result in a relatively high proportion of trips taken by active transport, but will generate more distance travelled, travel time and delay than options 1 and 7 (for the maximum growth scenario).

3.462 Overall, the minimum growth scenario is expected to have mixed minor positive and minor negative effects with uncertainty, the medium growth scenario is expected to have mixed minor positive and significant negative effects with uncertainty and the maximum growth scenario is expected to have a mixed significant positive and significant negative effect with uncertainty.

3.463 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

3.464 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. Under the minimum growth scenario, the two new settlements would be on a public transport corridor, which would reduce the need for private transport and help to minimise poor air quality. However, both the medium and maximum growth scenarios include a new settlement on the road network. As such, residents would be more reliant on private transport which could worsen air quality. Even with public transport options available, many residents are likely to drive for longer journeys, for example to access employment in Cambridge. Nevertheless, larger settlements have more scope to be designed in a way that encourages walking and cycling, which will likely minimise adverse effects on the area's air quality.

3.465 New settlements would be expected to provide a range of new services and facilities to meet the day to day needs of residents within the settlement. However, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities and job opportunities at new settlements will be delivered between 2020 and 2041, as

a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

3.466 The Transport Study suggests that this option is 'medium performing' overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but not as much as other options and will generate more distance travelled, travel time and delay than options 1 and 7.

3.467 Overall, these growth scenarios are expected to have a mixed minor positive and significant negative effect with uncertainty from 2020-2041 and a mixed significant positive and significant negative effect with uncertainty when fully built out.

5. Dispersal – villages

3.468 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. There are fewer Rural Centres so the absolute growth in each village is significantly greater for each Rural Centre than Minor Rural Centre. Rural Centres are likely to have more amenities, services and facilities and employment opportunities than Minor Rural Centres however, they could become overwhelmed and reach capacity. As such, an increase in the reliance on private vehicles is likely in order to access services and facilities and employment opportunities elsewhere, thereby leading to a worsening of air quality. This will be more prevalent in villages without good public transport links, although most are not as well connected via public transport (particularly regarding frequency of services), than larger centres.

3.469 Overall, each scenario is likely to have significant negative effects on this objective.

3.470 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.471 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and across 18 villages with existing or proposed public transport corridors. Development at North East Cambridge will provide new services and facilities and employment opportunities, as well as be in close proximity to existing facilities within Cambridge city. In addition, this option concentrates development along public transport corridors, it may reduce the use of private vehicles and help to minimise poor air quality, however an increase in residents could lead to overcapacity if additional services are not provided, leading people to travel to services further afield; this is most likely to occur at the 18 villages. Even with public transport options available, many residents are likely to drive for longer journeys, for example from new settlements and more rural settlements to access employment in Cambridge.

3.472 In addition, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. This is likely to be more pronounced for the minimum growth scenario, during the plan period, due to the smaller amount of development likely to be completed at a new settlement site. Under the maximum growth scenario however, growth at these locations is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

3.473 The Transport Study suggests that this option is 'medium performing' overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but not as much as other options and will generate more distance travelled, travel time and delay than options 1 and 7.

3.474 In addition, there is one AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Therefore, it is likely that development within North East Cambridge will exacerbate the poor air quality within the area.

3.475 For 2020-2041, mixed minor positive and significant negative effects are expected for all scenarios, with the positive effects becoming significant when fully built out. All effects are considered uncertain.

7. Supporting a high-tech corridor by integrating homes and jobs

3.476 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement however, both are on public transport corridors.

3.477 All growth scenarios include development across five villages all with existing or proposed public transport nodes. However, the medium growth scenario could include 25% of development not on public transport corridors. Overall, it is likely that the need to travel by car will be minimised, but the medium growth scenario may also increase the use of private vehicles and worsen air quality. Whilst there is likely to be some private car use resulting from development, in this area to the south of Cambridge employees could travel to work using active travel or public transport especially as this option supports the life sciences cluster area around the south of Cambridge.

3.478 The maximum growth scenario also includes growth at North East Cambridge and Cambridge Airport, which will provide new services and facilities and jobs, as well as low growth in the urban area. As such, this scenario will be less likely to put pressure on existing services and facilities, as well as providing new ones to serve new development, thereby reducing the distance to essential development for residents and the need to travel by private car to access facilities elsewhere, resulting in significant positive effects. However, there is one AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Therefore, it is likely that development within North East Cambridge, for the maximum scenario, will exacerbate the poor air quality within the area.

3.479 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period, resulting in a need for residents to travel further to access these. Under the maximum growth scenario however, growth at new settlements is likely be of a scale to ensure more extensive provision of sufficient new services and facilities and employment opportunities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs and additional employment opportunities, although there is a less certainty on this with regards to Cambridge Airport. Nevertheless, the Transport Study stated that this option was one of the best performing as, whilst it will not have the highest non-car mode share, it will reduce overall travel distance, time and delay, leading to reduced impacts on the wider road network and associated carbon emissions (for the maximum growth scenario). Given that the Transport Study is based on the maximum growth scenario, it is expected that positive effects for the minimum scenario, within the plan period, will be minor, rather than significant.

3.480 For 2020-2041, the minimum growth scenario is expected to have mixed minor positive and minor negative effects, whereas the medium and maximum scenarios are likely to have mixed significant positive and minor negative effects. When fully built out, the minimum and medium scenarios are expected to have significant positive and minor negative effects, although there is uncertainty associated with the medium growth scenario as there is a greater likelihood of private vehicles being utilised. When fully built out, the maximum scenario is expected to have a mixed significant positive and significant negative effects.

8. Expanding a growth area around transport nodes

3.481 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and Cambridge Autonomous Metro serving these areas, although it is uncertain whether these will come forward within the plan period, particularly the railway link. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger development. All of these developments would have access to the railway station, which would help to reduce reliance on travelling by car thereby improving air quality. Furthermore, new settlements have the opportunity to encourage and accommodate walking and cycling from the initial design stage. However, currently the development at Cambourne is not well served by public transport, so positive effects could be felt in the long term when the rail station and Cambridge Autonomous Metro are implemented, but in the short term development in Cambourne and along the A428 could cause additional residents utilising private vehicles to travel. In addition, some residents are still likely to travel by car, particularly to locations not served by the train or Cambridge Autonomous Metro.

3.482 The medium and maximum growth scenarios include growth at North East Cambridge and, for the maximum growth scenario, growth at Cambridge Airport. These sites are likely to have good access to the services, facilities and public transport links within Cambridge as well as providing new ones, therefore minimising the need to travel and associated air pollution. For the medium scenario, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of growth at North East Cambridge between 2020 and 2041, as a

lower level of growth is expected within the plan period. Under the maximum growth scenario, growth at North East Cambridge is more likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport. In addition, there is one AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Therefore, it is likely that development within North East Cambridge will exacerbate the poor air quality within the area.

3.483 This option also includes growth at villages along the A428 public transport corridor, which will be well served by public transport, and therefore contribute to minimising greenhouse gas emissions, in the long term, but may be reliant on private car use in the shorter term. The medium and maximum options include growth at other villages/settlements within 5km of Cambourne that may not be on public transport corridors. Such growth is likely to result in increases in car use to access employment, services and facilities.

3.484 For 2020-2041, all scenarios are likely to have mixed minor positive and significant negative effects. When fully built out, each scenario is expected to have significant positive and significant negative effects with uncertainty.

Best performing option

3.485 Option 7 'Supporting a high-tech corridor by integrating homes and jobs' performs best, as it is expected to provide additional services and facilities and walking, cycling at the urban extensions/new settlement and are already located near existing public transport links, employment opportunities and Cambridge city, thereby minimising the need to travel far by private car. The Transport Study identified that Option 7 'Supporting a high-tech corridor by integrating homes and jobs' will reduce traffic in the wider Cambridge area and reduce journey length/times to work (for the maximum growth scenario). The Transport Study also found that Option 1 'Densification of existing urban areas' performed best in terms of promoting active travel (for the maximum growth scenario), but growth in and around Cambridge has potential to exacerbate air quality issues in existing AQMAs, as some new residents will travel by car or other private vehicle, increasing traffic in these areas to some extent.

3.486 Option 5 'Dispersal – villages' performs least well as it is likely to lead to development with high levels of dependency on the private car.

SA Objective 14: To facilitate a sustainable and growing economy

Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	--/+	--/+?	+/-?	+/-	+/-	+/-	+/-	--/+
Medium Growth	--/+	--/+?	+/-?	+/-	+/-	+/-	+/-	--/+
Maximum Growth	++/--	--/+?	++/-?	+/-	+/-	++/-	++/-	++/--

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--	--/+?		++/-		++/-	++/-	++/-
Medium Growth	++/--	++/--?		++/-		++/-	++/-	++/-
Maximum Growth	++/--	++/--?		++/-		++/-	++/-	++/-

1. Densification of existing urban areas

3.487 Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site will be brought forward through the AAP. The medium and maximum growth scenarios also include development at Cambridge Airport. Therefore, it is likely this option will support the existing economic hub in Cambridge.

3.488 As growth would be focused within and around Cambridge city, it can continue to support the vitality and viability of the city. Cambridge is also the main employment centre for Greater Cambridge; therefore this option is likely to support existing businesses by locating homes, and therefore workers, close to businesses.

3.489 The medium and maximum scenarios include growth at Cambridge Airport and the medium scenario includes growth at a Green Belt site on the edge of Cambridge. Growth at Cambridge Airport (for the medium and maximum options) and at North East Cambridge (for all options) is likely to help support the local economy by locating workers close to jobs and encouraging spending in the city centre. They are also expected to provide new jobs and new services and facilities, although for the minimum and medium scenarios in particular, these are not likely to be provided fully within the plan period.

3.490 However, this option would direct the economic benefits of development in Cambridge itself and would therefore do less for the wider economy of Greater Cambridge.

3.491 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. It notes that, under all growth scenarios, this option may fail to provide sufficient industrial and warehousing floorspace requirements through intensification of the urban sites in the city alone. For the maximum growth scenario there may also be a lack of lower density wet lab B1b premises.

3.492 For 2020-2041, mixed minor positive and significant negative effects are expected for the minimum and medium scenarios, whereas mixed significant positive and significant negative effects are expected for the maximum scenario. For all scenarios, the positive effects identified are expected to be significant when fully built out.

2. Edge of Cambridge – outside the Green Belt

3.493 Option 2 includes development at Cambridge Airport and North East Cambridge for all growth scenarios, which lie on the edge of Cambridge. The medium and maximum growth scenarios propose two new settlements on public transport corridors. Therefore, growth would be near Cambridge itself or public transport options, which allow for easy access into Cambridge. Therefore, it is likely this option will support the existing economic hub in Cambridge. Cambridge is also the main employment centre for Greater Cambridge; therefore, this option is likely to support existing businesses by locating homes, and therefore workers, close to businesses. In addition, new settlements are likely to provide new services and facilities and some space for new or expanding businesses and may help support the wider economy of

Greater Cambridge. However, new employment space is less likely to come forward within the plan period, particularly for the minimum and medium growth scenarios.

3.494 The minimum growth scenario includes a village site and the medium growth scenario includes growth at rural centres and minor rural centres. These would likely be less well connected to Cambridge but would support the vitality and viability of more rural areas.

3.495 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. It notes that, under all growth scenarios, this option may fail to provide sufficient industrial and warehousing floorspace requirements through provision at the edge of the city alone. For the higher growth scenario, there is a possible lack of wet lab B1b premises, depending on competition of use of employment floorspace. It is not clear if these unmet needs could be provided through additional sources of supply, e.g. new settlements.

3.496 For 2020-2041, all options are expected to have mixed minor positive and significant negative uncertain effects. When fully built out, mixed minor positive and significant negative uncertain effects are expected for the minimum growth scenario whereas mixed significant positive and significant negative uncertain effects are expected against the medium and maximum scenarios.

3. Edge of Cambridge – Green Belt

3.497 Option 3 includes the development of new sites in Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a range of locations. The medium scenario also includes growth within the Cambridge urban area. The maximum growth scenario includes higher delivery rates at the Green Belt sites. Therefore, the growth would be near existing economic centres within the city, which can continue to support their vitality and viability. Cambridge is the main employment centre for Greater Cambridge; therefore, this option is likely to support existing businesses by locating homes, and therefore workers, close to businesses. It is likely that additional services and facilities will also be provided on site, but these may not be provided in the short term and are likely to be more limited for the minimum and medium growth scenarios. As such, this option is likely to have positive effects on the local economy.

3.498 However, this option would direct the economic benefits of development in Cambridge itself and would therefore do less for the wider economy of Greater Cambridge.

3.499 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. It is anticipated that the full range of employment land needed could be delivered for all growth scenarios and there could be opportunities to attract more inward investment.

3.500 For the minimum and medium scenarios, mixed minor positive and minor negative uncertain effects are expected, whereas for the maximum growth scenario a mixed significant positive and minor negative uncertain effect is expected.

3.501 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

3.502 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. While this option would not provide development near existing settlements or knowledge hubs within Cambridge, it would be creating new towns or villages, providing jobs in a new location. While it is likely that strategic transport infrastructure connecting to Cambridge would be created, this is most likely to occur in the longer term. It may take a while to build the vibrancy and vitality of new settlements themselves, as they will not be fully occupied at first. However, this option would support provision of additional services and facilities and additional employment land and therefore job opportunities and diversification of services and facilities in areas where there are new settlements, although again, this is more likely to come forward in the longer term, particularly for the minimum and medium growth scenarios. Depending on the location of new settlements, it is possible that some residents will be commuting out of Cambridge to surrounding areas or London which may hinder growth of the local Greater Cambridge economy.

3.503 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. New settlements would be well suited to accommodating the full range of land uses associated with Greater Cambridge's sectors including offices, labs and warehousing / industrial given opportunities for available land, although the document suggests that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. It also states the location of a new settlement may therefore have a bearing on its level of employment success.

3.504 For 2020-2041, mixed minor positive and minor negative effects are expected for each scenario. When fully built out, the minor positive effects identified are expected to become significant.

5. Dispersal – villages

3.505 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. Therefore, this option would help to support and diversify the rural economy through supporting rural services and facilities, although some may have more limited public transport into the economic hub of Cambridge. As such, this option may not provide development of the scale or location required to support the knowledge sectors located in and around Cambridge.

3.506 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. All growth scenarios could provide land for a range of employment types, although the document notes that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. However, dispersal of employment across villages is likely to temper the ability of larger employment development to agglomerate being limited by localised workforce. The document also notes that the location of employment distribution may therefore have a bearing on its level of employment success and that large employment developments could be disproportionate to village size.

3.507 Overall, mixed minor positive and minor negative effects are expected for each growth scenario.

3.508 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.509 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and across 18 villages with existing or proposed public transport corridors.

3.510 Development in North East Cambridge and the villages would be based around existing urban areas and settlements. Therefore, this option could help to support their vitality and viability. In addition, this development would support the expansion of economic benefits outwards from Cambridge. As this option would provide new settlements the provision of additional job opportunities and diversification of services and facilities in more rural areas is likely. It may take a while to build the vibrancy and vitality of new settlements themselves, as they will not be fully occupied at first. Depending on the location of new settlements, it is possible that some residents will be commuting out of Cambridge to surrounding areas or London which may hinder growth of the local Greater Cambridge economy.

3.511 Growth at North East Cambridge and new settlements is likely to include new services and facilities, as well as new employment land. However, these are likely to come forward in the longer term, particularly for the minimum and medium scenarios.

3.512 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. All growth scenarios could provide land for a range of employment types, although the document notes that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. The provision of industrial and warehousing floorspace depends on the accessibility of these sites, particularly via the strategic road network. It also states the location of a new settlement may therefore have a bearing on its level of employment success.

3.513 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium scenarios, whereas significant positive and minor negative effects are expected for the maximum growth scenario. When fully built out, significant positive and minor negative effects are expected against each scenario.

7. Supporting a high-tech corridor by integrating homes and jobs

3.514 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement however, both are on public transport corridors.

3.515 All growth scenarios include development across five villages all with existing or proposed public transport nodes however, the medium growth scenario could include 25% of development not on public transport corridors.

3.516 This option would focus development close to existing jobs within the life sciences cluster area to the south of Cambridge. Therefore, this option would support the growth of the science sector – a key sector in the Cambridge economy – in particular, but might lead to less diversification of the economy. This potential lack of diversification may be slightly less so for the maximum scenario, which also includes growth at North East Cambridge and Cambridge Airport. Development at North East Cambridge and Cambridge Airport would likely provide new services, facilities and employment space and also support the local and regional economy by locating workers near to jobs and are located such as to encourage spending in Cambridge city.

3.517 It is expected that the new settlement would provide some new employment space, as well as services and facilities, which would provide some employment and spending opportunities. However, only limited services and employment land may be delivered in the plan period, particularly for the minimum and medium growth scenarios.

3.518 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. All growth scenarios could provide land for a range of employment types, particularly providing sufficient land is provided with good accessibility via the strategic road network for industrial and warehousing floorspace. However, the document highlights that, whilst expansion of other sectors is feasible, the employment focus for this option is within the life sciences.

3.519 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium scenarios, whereas mixed significant positive and minor negative effects are expected for the maximum growth scenario. When fully built out, significant positive and minor negative effects are expected against each scenario.

8. Expanding a growth area around transport nodes

3.520 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and Cambridge Autonomous Metro serving these areas. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger development.

3.521 This option would provide development at existing growth areas, adding to the critical mass of population that could generate demand for further services and employment provision. However, while it is likely that strategic transport infrastructure, such as the new railway station, connecting to Cambridge and services and facilities would be created, this is most likely to occur in the long term. It may take a while to build the vibrancy and vitality of new communities themselves, although the wider settlement of Cambourne is more established. It is possible that some residents will be commuting out of Cambridge to surrounding areas or London which may hinder growth of the local Greater Cambridge economy. These factors combine to result in likely significant negative effects in the shorter term.

3.522 All growth scenarios also include growth at some villages along the A428 and, for the medium and maximum scenarios, growth at settlements within 5km of Cambourne. Whilst these

would not be necessarily near existing economic centres (particularly Cambridge), those along the A428 could access these via public transport and all would help support the vitality and viability of more rural areas. The maximum growth scenario also includes growth at North East Cambridge and Cambridge Airport, which would support the local and regional economy by locating workers near to jobs and are located such as to encourage spending in Cambridge city.

3.523 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. The document notes that Cambourne has been slow to develop as an employment location, but has gained traction as a secondary office location in recent years for professional services and ICT. All growth scenarios could provide land for a range of employment types, particularly providing sufficient land is provided with good accessibility via the strategic road network for industrial and warehousing floorspace.

3.524 For 2020-2041, the minimum and medium growth scenarios are expected to have mixed minor positive and significant negative effects, whereas the maximum growth scenario is expected to have mixed significant positive and significant negative effects. When fully built out, all options are expected to have mixed significant positive and minor negative effects are expected against each scenario.

Best performing option

3.525 The Employment Study suggests that the greater the level of growth, the greater the positive impacts for the economy. It suggests therefore, that the minimum growth scenario performs least well and may constrain growth, whereas the maximum growth scenario performs best in providing a flexible land supply. The outcome depends on the performance of the economy which has uncertainties, particularly with regard to Covid-19.

3.526 For 2020-2041, the maximum growth scenario for Options 3 'Edge of Cambridge – Green Belt', 6 'Public transport corridors' and 7 'Supporting a high-tech corridor by integrating homes and jobs' perform well.

3.527 When fully built out, Options 4 'Dispersion – new settlements', 6 'Public transport corridors', 7 'Supporting a high-tech corridor by integrating homes and jobs' and 8 'Expanding a growth area around transport nodes' perform best. Whilst Option 8 'Expanding a growth area around transport nodes' performs less well within the plan period, it performs well when fully built out as new strategic transport infrastructure is expected to be implemented in the longer term.

3.528 Options 1 'Densification of existing urban areas' and 2 'Edge of Cambridge – outside the Green Belt' perform least well overall, as they are less likely to be able to meet the full range of employment land needs.

SA Objective 15: To deliver, maintain and enhance access to diverse employment opportunities, to meet both current and future needs in Greater Cambridge

Housing provision between 2020-2041

Strategic Spatial Options / Growth scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	--/+	--/+?	+/-	+/-	--/+	+/-	+/-	--/+
Medium Growth	--/+	--/+?	+/-	+/-	--/+	+/-	+/-	--/+
Maximum Growth	++/--	--/+?	++/-	++/-?	--/+	++/-?	++/-	++/--

Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--	--/+?		++/-		++/-	++/-	+/-
Medium Growth	++/--	++/--?		++/-		++/-	++/-	++/-
Maximum Growth	++/--	++/--?		++/-		++/-	++/-	++/-

1. Densification of existing urban areas

3.529 Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site will be brought forward through the AAP. The medium and maximum growth scenarios also include development at Cambridge Airport and the medium scenario includes growth at a Green Belt site on the edge of Cambridge.

3.530 As this option aims to focus the majority of development within the urban area, it is likely that more sustainable methods of transport like walking and cycling would be used, thereby providing easily accessible employment opportunities. In addition, this option is likely to provide additional employment opportunities at North East Cambridge, although these may only come forward in limited amounts during the plan period, particularly for the minimum and medium growth scenarios. For the medium and maximum growth scenarios, additional sources of supply will be located at the Cambridge Airport and, for the medium growth scenario, the edge of Cambridge. Both of which are likely to have good access to job opportunities and public transport options in Cambridge.

3.531 However, this option would focus job growth and accessibility in Cambridge, which is already the main centre for employment and therefore may limit employment opportunities available in the wider Greater Cambridge area. In addition, Employment Study states that, under all growth scenarios this option may fail to provide sufficient industrial and warehousing floorspace requirements through intensification of the urban sites in the city alone, due to lack of floorspace for these uses. For the maximum growth scenario there may also be a lack of lower density wet lab B1b premises. As such, diversity of employment opportunities may be more limited for this option.

3.532 For 2020-2041, mixed minor positive and significant negative effects are expected for the minimum and medium growth scenarios and mixed significant positive and significant negative effects are expected for the maximum growth scenario. Mixed significant positive and significant negative effects are expected each growth scenario when fully built out.

2. Edge of Cambridge – outside the Green Belt

3.533 Option 2 includes urban development at Cambridge Airport and North East Cambridge for all growth scenarios, which lie on the edge of Cambridge. It is anticipated that development at North East Cambridge and Cambridge Airport would provide additional employment opportunities, although these may only come forward in limited amounts during the plan period, particularly for the minimum and medium growth scenarios. These locations are also likely to have good access to job opportunities and public transport options in Cambridge.

3.534 The medium and maximum growth scenarios propose two new settlements on the public transport corridors, which may help make employment opportunities in Cambridge more accessible and are expected to provide some employment opportunities on-site. However, new employment space is less likely to come forward within the plan period, particularly for the minimum and medium growth scenarios.

3.535 The minimum growth scenario includes a village site and the medium growth scenario also includes a number of dwellings spread across rural centres and minor rural centres which, would likely rely on private transport, although they could help to provide jobs in the wider Greater Cambridge economy.

3.536 The Employment Study states that, under all growth scenarios, this option may fail to provide sufficient industrial and warehousing floorspace requirements through provision at the edge of the city alone. For the higher growth scenario, there is a possible lack of wet lab B1b premises, depending on competition of use of employment floorspace. It is not clear if these unmet needs could be provided through additional sources of supply, e.g. new settlements. As such, diversity of employment opportunities may be more limited for this option.

3.537 For 2020-2041, mixed minor positive and significant negative uncertain effects are expected for all scenarios. When fully built out, the minimum growth scenario is expected to have mixed minor positive and significant negative uncertain effects, whereas mixed significant positive and significant negative uncertain effects are expected for the medium and maximum growth scenarios.

3. Edge of Cambridge – Green Belt

3.538 Option 3 includes the development of new sites in Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios. The maximum growth scenario includes higher delivery rates at the Green Belt sites and the medium scenario includes growth in the urban area of Cambridge. It is likely that these developments will have good access to job opportunities in Cambridge. Locations are also likely to have good access to public transport, although this depends on the exact location of development. The Employment Study suggests that all growth scenarios are likely to be able to provide for the full range of employment types needed, providing sufficient land is released. However, this option would focus job growth and accessibility in Cambridge, which is already the main centre for employment and therefore may limit employment opportunities available in the wider Greater Cambridge area.

3.539 Overall, mixed minor positive and minor negative effects are expected for the minimum and medium growth scenarios, whereas mixed significant positive and minor negative effects are expected for the maximum growth scenario.

3.540 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

3.541 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. This would be expected to include some employment provision and sustainable transport options at the new settlements themselves, although easy accessibility to existing job opportunities in Cambridge may be more limited. However, these new settlements are likely to be provided on public transport corridors and therefore can provide access to job opportunities within Cambridge.

3.542 New employment opportunities at new settlements will help support job growth in the wider Greater Cambridge area, but the majority of these are likely to come forward after the plan period, particularly for the minimum and medium growth scenarios.

3.543 The Employment Study suggests this option is likely to be able to provide for the full range of employment types needed, although the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city.

3.544 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium growth scenarios, whereas mixed significant positive and minor negative uncertain effects are expected for the maximum growth scenario. When fully built out, the minor positive effects identified are expected to become significant.

5. Dispersal – villages

3.545 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. Whilst this option may help to provide some employment opportunities in the wider Greater Cambridge area, there are likely to be more limited job opportunities in the villages and some may have more limited public transport into the economic hub of Cambridge. The Employment Study states that all growth scenarios could provide land for a range of employment types, although the document notes that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. Whilst a number of existing employment parks have successfully developed near villages, the location of employment distribution may have a bearing on its level of employment success. In addition, large employment developments could be disproportionate to village size.

3.546 Overall, mixed minor positive and significant negative effects are expected for all growth scenarios.

3.547 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

3.548 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and across 18 villages with existing or proposed public transport corridors. This option would generally enable good labour market accessibility to employment locations, particularly Cambridge.

3.549 This development would support the expansion of economic benefits outwards from Cambridge which would grow and diversify jobs outside of Cambridge. However, while it is likely that strategic transport infrastructure connecting to Cambridge would be created, this is most likely to occur in the long term. Therefore, in the short term the increase in accessibility of job opportunities would likely be minimal. Similarly, whilst development at new settlements and North East Cambridge are expected to provide some job opportunities, these are likely to come forward in the longer term, particularly for the minimum and medium scenarios.

3.550 The Employment Study suggests that all growth scenarios could provide land for a range of employment types, although the document notes that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. The provision of industrial and warehousing floorspace depends on the accessibility of these sites, particularly via the strategic road network. It also states the location of a new settlement may therefore have a bearing on its level of employment success.

3.551 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium growth scenarios, whereas mixed significant positive and minor negative uncertain effects are expected for the maximum growth scenario. When fully built out, significant positive and minor negative effects are expected against each scenario.

7. Supporting a high-tech corridor by integrating homes and jobs

3.552 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement however, both are on public transport corridors.

3.553 All growth scenarios include development across five villages all with existing or proposed public transport nodes however, the medium growth scenario could include 25% of development not on public transport corridors.

3.554 This option would support the growth of the science sector, as it would provide easy access to a large amount of job opportunities. Development is likely to be provided on public transport corridors and therefore can provide access to job opportunities and the labour pool within Cambridge as well. In addition, the maximum growth scenario includes development at North East Cambridge and Cambridge Airport, which are both located in proximity to employment opportunities within Cambridge and are likely to provide additional employment opportunities. These larger developments, along with the new settlement, are expected to provide new employment opportunities. However, only limited employment opportunities may be delivered in the plan period, particularly for the minimum and medium growth scenarios.

3.555 This option would focus job growth and accessibility in and around Cambridge, particularly at the science cluster, which is already the main centre for employment and therefore may limit job growth in the wider Greater Cambridge area. The Employment Study suggests that all growth scenarios could provide land for a range of employment types, particularly providing sufficient land is provided with good accessibility via the strategic road network for industrial and warehousing floorspace. However, the document highlights that, whilst expansion of other sectors is feasible, the employment focus for this option is within the life sciences and therefore may result in a more limited range of job opportunities.

3.556 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium scenarios, whereas mixed significant positive and minor negative effects are expected for the maximum growth scenario. When fully built out, significant positive and minor negative effects are expected against each scenario.

8. Expanding a growth area around transport nodes

3.557 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and Cambridge Autonomous Metro serving these areas. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger development.

3.558 This option would provide development at an existing growth area, adding to the critical mass of population that could generate demand for further services and employment provision. The Employment Study states that employment located at transport nodes around Cambourne will broadly enable good labour market accessibility. However, while it is likely that strategic transport infrastructure, such as the new railway station, connecting to Cambridge would be created, this is most likely to occur in the long term. Therefore, in the short term the accessibility to and from the area, especially jobs within Cambridge city, by sustainable transport would be more limited. The Employment Study notes that Cambourne has been slow to develop as an employment location, but has gained traction as a secondary office location in recent years for professional services and ICT. All growth scenarios could provide land for a range of employment types, particularly providing sufficient land is provided with good accessibility via the strategic road network for industrial and warehousing floorspace.

3.559 All growth scenarios also include growth at some villages along the A428 and, for the medium and maximum scenarios, growth at settlements within 5km of Cambourne. Whilst these would not be necessarily near existing employment centres (particularly Cambridge), those along the A428 could access these via public transport, particularly in the longer term when new strategic public transport infrastructure is implemented, and all would help job growth in more rural areas. The maximum growth scenario also includes growth at North East Cambridge and Cambridge Airport, which would both be within proximity to employment opportunities in the city and are likely to provide new employment opportunities.

3.560 For 2020-2041, mixed minor positive and significant negative effects are expected for the minimum and medium scenarios, whereas mixed significant positive and significant negative effects are expected for the maximum growth scenario. When fully built out, mixed minor positive and minor negative effects are expected for the minimum growth scenario, whereas mixed significant positive and minor negative uncertain effects are expected for the medium and maximum growth scenarios.

Best performing option

3.561 Options 4 'Dispersal – new settlements', 6 'Public transport corridors' and 7 'Supporting a high-tech corridor by integrating homes and jobs' perform well, particularly when fully built out. The maximum growth scenario for Option 3 'Edge of Cambridge – Green Belt' also performs well. Whilst Option 8 'Expanding a growth area around transport nodes' performs less well within the plan period, it performs well when fully built out as new strategic transport infrastructure is expected to be implemented in the longer term.

3.562 Options 5 'Dispersal-Villages' performs least well, as existing centres of employment are likely to be less accessible to development under this option. Options 1 'Densification of existing

Chapter 3

Assessment of Strategic Spatial Options

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urban areas' and 2 'Edge of Cambridge – outside the Green Belt' also perform less well than other options, as they are less likely to be able to meet the full range of employment needs.

Chapter 4

Conclusions and Next Steps

Conclusions

4.1 The eight strategic spatial options have been subject to Sustainability Appraisal, including considerations of their effects at different levels of growth. As may be expected with any assessment of growth, more positive effects are generally expected with regards to economic and social objectives, and more negative effects are generally associated with environmental objectives.

4.2 It is noted that many of the strategic spatial options cannot meet the full housing need through the focus source of supply and therefore require additional sources of supply. This has led to substantial overlap between some of the options. For example, many include at least one new settlement and this has therefore resulted in similar effects being identified in relation to this. Nevertheless, we have attempted to distinguish between the better performing options and those that perform less well, based primarily on the number of positive and negative effects and whether these are considered significant. There is a substantial level of uncertainty in the assessment as actual sustainability effects will depend strongly on the exact locations, scale and nature of development and the supporting infrastructure provided.

Locational sources of supply

4.3 Whilst the spatial options have been assessed as a whole (i.e. taking into account both the main focus of sources of supply and additional sources of supply), The following pages summarise the key sustainability benefits, opportunities and issues related to each of the sources of supply individually. This sets out the sustainability effects of these individual development types, which has influenced the assessments in Chapter 3. The table includes comments on the 'Southern Cluster', which is the broad locational focus for Option 7 'Supporting a high tech corridor by integrating homes and jobs'. Whilst this includes a range of development types (i.e. village growth and a new settlement), it was considered useful to identify the effects of focusing development at this particular location as well. As with the assessment of the spatial options, there is a level of uncertainty associated with the sustainability benefits, opportunities and issues identified in the following pages., as effects depend on the exact location, scale and nature of development.

Source of supply – Cambridge urban area

Key sustainability benefits and opportunities

- Very good access to services, facilities and public transport links, encouraging walking and cycling, resulting in positive effects for accessibility, equalities, health, climate change mitigation and air quality.
- Very good access to established employment hubs, within and on the edge of Cambridge, and the main commercial and retail centres, resulting in positive effects on economy and employment.
- Reduces need to develop greenfield and agricultural land.
- Helps to protect the wider setting of Cambridge.
- Challenges developers to deliver innovative urban design solutions, incorporating energy efficiency and high quality built form and public realm.
- Good opportunities to retrofit flood risk reduction measures.

Key sustainability issues

- Unlikely to be able to deliver significant volumes of new homes.
- More limited range of housing types if reliant on smaller development schemes.
- Existing services and facilities may not have capacity to accommodate new development.
- According to the Employment Study, this option may not meet needs for larger employment uses and therefore result in lower diversity of employment opportunities.
- Could lead to loss of public open space, particularly for the medium and maximum growth scenarios.
- Development likely to be within or near to an AQMA.
- Could result in damage to or degradation of biodiversity assets and green infrastructure.
- Intensification of development may be out of keeping with the character of the historic townscape.
- Pressure on water supply and wastewater treatment (particularly for medium and maximum growth scenarios).
- Development may fall within an area at high risk of fluvial or surface water flooding.
- Limited investment in services, facilities, economy and employment in more rural areas.

Source of supply - Edge of Cambridge (non-Green Belt)

Key sustainability benefits and opportunities

- Opportunity to deliver a scheme of new settlement scale, as part of the Cambridge urban area, with all the jobs, shops, services and facilities expected of a development of that scale.
- Will help to regenerate one of the remaining large-scale previously developed sites in Cambridge.
- Can deliver large numbers of homes of a range of types and tenures where the demand is greatest.
- Good access to existing services, facilities and public transport links, particularly Cambridge North Railway station and the guided busway. Provision of new services and facilities and public transport, resulting in positive effects for accessibility, equalities, health, climate change mitigation and air quality.
- Includes established employment hubs, such as Cambridge Science Park, and relatively good access the main retail centre by public transport, as well as provision of a substantial amount of new employment as well as local centres, resulting in positive effects on economy and employment.
- Can be designed around walking and cycling, enhancing and integrating with the existing Cambridge walking and cycling networks.
- Can be designed to deliver low carbon outcomes.
- Opportunity to provide new/improved green infrastructure.
- Reduces need to develop greenfield and agricultural land.
- Good opportunities for flood risk and water management.
- Good access to some existing local services and facilities in Barnwell and Church End, and provision of new services and facilities, resulting in positive effects for accessibility, equalities, health, climate change mitigation and air quality.
- Good access to established employment hubs, including Neath Farm Business Centre and at Newmarket Road and Cambridge Retail Park, as well as provision of new employment and local centres, resulting in positive effects on economy and employment.

Key sustainability issues

- Development adjacent to an AQMA.
- Could result in damage to or degradation of biodiversity assets and green infrastructure.
- Pressure on water supply (particularly for medium and maximum growth scenarios).
- Will require the relocation of the existing wastewater treatment works.

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- According to the Employment Study, this option may not meet needs for larger employment uses and therefore result in lower diversity of employment opportunities.
- Loss of historic context of Grade 2 listed control tower.
- Will require the relocation of existing businesses, which could disrupt trade or affect viability.
- Limited investment in services, facilities, economy and employment in more rural areas.
- Cambridge City Airport services likely to be transferred elsewhere to other airports less well located to Cambridge, with resulting direct and indirect impacts on local jobs and support services.
- Potential impacts on long and open views and vistas into and out of Cambridge city centre.

Source of supply - Green Belt fringe

Key sustainability benefits and opportunities

- Potentially good access to existing services, facilities and public transport links, and provision of new services and facilities if developments are of sufficient scale, resulting in positive effects for accessibility, equalities, health, climate change mitigation and air quality.
- Potentially good access to established employment hubs and potentially good access to the centre of Cambridge by public transport, depending on location, as well as provision of new employment and local centres, depending on the scale of development, resulting in positive effects on economy and employment.
- Can be designed around walking and cycling, enhancing and integrating with the existing Cambridge walking and cycling networks.
- Opportunity to provide new/improved green infrastructure.
- Good opportunities for flood risk and water management.

Key sustainability issues

- Piecemeal Green Belt release may not offer the scale of development to provide for a full range of homes, jobs, services and facilities, including public transport.
- Some Green Belt locations could be too distant from the city centre for ease of walking and cycling.
- Could result in damage to or degradation of biodiversity assets and green infrastructure.
- Potential loss of views into and out of the historic core of Cambridge, affecting its setting.

- Pressure on water supply and wastewater treatment (particularly for medium and maximum growth scenarios).
- Limited investment in services, facilities, economy and employment in more rural areas.
- Existing fluvial and surface water flood risk may make individual sites difficult to deliver, depending on location.

Source of supply - New settlements

Key sustainability benefits and opportunities

- Depending on scale, can deliver large numbers of homes of a range of types and tenures.
- Provision of new services and facilities, resulting in positive effects for accessibility, equalities, health, climate change mitigation and air quality.
- New settlements on very good public transport corridors also likely to have good access to services, facilities, public transport and employment centres.
- Can be designed around walking and cycling for internal trips.
- Can be designed to deliver low carbon outcomes.
- Helps to protect the wider setting of Cambridge.
- Opportunity to provide new/improved green infrastructure.
- Good opportunities for flood risk and water management.

Key sustainability issues

- Difficult to establish a sense of community in earlier years.
- Homes may not be where people want to live, if their desire is to live within or close to existing settlements, especially Cambridge.
- Unlikely to be within walking and cycling distance of main existing settlements, especially Cambridge, which could encourage car use.
- New settlements that are not on very good public transport routes/services are likely to encourage increased car use.
- Could result in damage to or degradation of biodiversity assets and green infrastructure.
- Pressure on water supply and wastewater treatment (particularly for medium and maximum growth scenarios).
- Major landscape change/urbanisation at the location of the development.
- Likely loss of a large area of greenfield land.

Source of supply - Villages

Key sustainability benefits and opportunities

- Supports rural services and the vitality and viability of villages, and their shops and services.
- Provides for homes to be delivered to meet local village needs.
- Significant growth of service villages could provide opportunities to deliver new services and facilities, including pre-school facilities, primary schools, and healthcare.
- Villages offer immediate access to the countryside, which is good for health and wellbeing.
- Helps to protect the wider setting of Cambridge.

Key sustainability issues

- Less scope to deliver the volumes of homes required to meet needs through the Greater Cambridge area.
- More limited range of housing types / affordable housing.
- Existing services and facilities may not have capacity to accommodate new development.
- Likely to result in significant car trips, both for commuting and to access services and facilities not available in villages.
- Unlikely to result in a significant shift towards low carbon outcomes.
- Significant growth in villages could affect their character, distinctiveness and identity.
- Significant development may impact upon the historic assets and setting of villages including listed buildings and conservation areas.
- Could result in damage to or degradation of biodiversity assets and green infrastructure.
- Pressure on water supply and wastewater treatment (particularly for medium and maximum growth scenarios).

Source of supply - Southern cluster

Key sustainability benefits and opportunities

- Could deliver a reasonable number of new homes, close to Cambridge.
- Potentially good access to existing services, facilities and public transport links, depending on exact location of development.

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- Good access to established employment hub(s), including Cambridge Biomedical Campus, and possibly Granta Park, resulting in positive effects on economy and employment, as well as helping to minimise traffic and related emissions.
- Some types of development, i.e. new settlements are expected to include provision of new services and facilities, resulting in positive effects for accessibility, equalities, health, climate change mitigation and air quality.

Key sustainability issues

- May not deliver the numbers, range and types of homes required.
- Existing services and facilities in villages may not have capacity to accommodate new development.
- Could result in damage to or degradation of biodiversity assets and green infrastructure.
- Pressure on water supply and wastewater treatment (particularly for medium and maximum growth scenarios).
- Potential for settlement coalescence, with consequential effects on settlement character and identity.
- Likely loss of grades 2 and/or 3 agricultural land.
- Sensitive landscape characteristics (river valley and chalk hills).

Source of supply - Cambourne expansion

Key sustainability benefits and opportunities

- Further develops and enhances a new settlement where the groundwork has already been laid.
- Depending on scale of expansion, can deliver large numbers of homes of a range of types and tenures.
- Access to services and facilities within Cambourne and likely provision of new services and facilities, resulting in positive effects for accessibility, equalities, health, climate change mitigation and air quality.
- Good access to public transport and services, facilities and employment centres elsewhere, once strategic transport infrastructure is complete.
- Can be designed around walking and cycling for internal trips.
- Helps to protect the wider setting of Cambridge.
- Opportunity to provide new/improved green infrastructure.
- Good opportunities for water management.

Key sustainability issues

- Homes may not be where people want to live, if their desire is to live within or close to existing settlements, especially Cambridge.
- Access to jobs and services outside Cambourne are beyond reasonable walking and cycling distance, which could encourage car use, despite public transport provision and investment.
- If car use for external trips remains high, then this will make it more difficult to achieve low carbon outcomes.
- Could result in damage to or degradation of biodiversity assets and green infrastructure.
- Pressure on water supply and wastewater treatment (particularly for medium and maximum growth scenarios).
- Likely loss of grades 1, 2 and/or 3 agricultural land.

Growth scenarios

4.4 Overall, the minimum growth scenario tends to have fewer negative effects, as a lower level of growth is likely to put less pressure on local services and environmental resources. However, the maximum growth scenario tends to have more significant positive effects, particularly within the plan period, as larger individual developments are likely to be built within the plan period under this option. These have greater scope for providing new services and facilities and being designed in a way that encourages healthy lifestyles. In addition, a higher level of development may be able to provide the critical mass for provision of substantial new infrastructure and environmental enhancements, such as new green infrastructure and provide a greater diversity of homes and jobs. The medium growth scenario lies between these two. In general it will not provide the same opportunities for new infrastructure within the plan period as the maximum growth option, but is expected to do so in the longer term.

Strategic spatial options

Option 1. Densification of existing urban areas

4.5 Option 1 'Densification of existing urban areas' performs very well, particularly for the minimum growth scenario, as it includes regeneration of a large brownfield site at North East Cambridge and would result in development that is very well located to access local services and facilities and jobs and would likely minimise the need to travel by car. Concentrating development in the urban area would also prevent or reduce the need to develop greenfield land, which may be more sensitive in terms of biodiversity and would reduce the need to sterilise mineral resources or high quality agricultural land. However, this option poses a risk of demand for local services and facilities, including health services and green space, becoming greater than supply. It could also result in development on existing green space, particularly for the medium and maximum growth scenarios, which would have negative implications for human and environmental health. In addition, it may provide a more limited range of housing types and it would also fail to support the economic and social vitality of rural settlements. Whilst parts of the urban area are at risk of fluvial and surface water flooding, there are opportunities to use sustainable drainage systems in new developments on brownfield land.

Option 2. Edge of Cambridge – outside Green Belt

4.6 Option 2 'Edge of Cambridge – outside Green Belt' performs quite well when fully built out, although not as well within the plan period. On the one hand, it combines the benefits of growth in proximity to Cambridge, i.e. access to services, facilities and jobs in the city, with the benefits of larger developments (such as new settlements under the medium and maximum growth scenarios). This includes provision of new services and facilities and potential to use large scale measures for environmental benefit e.g. energy, sustainable drainage, green infrastructure. This option would result in a range of sources of supply, all of which bring different benefits. It also makes use of brownfield land at North East Cambridge and Cambridge Airport. However, this option has potential to result in harm to the landscape and biodiversity assets and could result in relatively high carbon emissions before developments are fully built out, which is particularly the case for the additional sources of supply at villages and new settlements.

Option 3. Edge of Cambridge – Green Belt

4.7 Option 3 'Edge of Cambridge – Green Belt' is similar to Option 2 in terms of focusing development around Cambridge, but it does not include the additional sources of supply at villages and new settlements. Option 3's exclusive focus on growth in and around Cambridge city it is expected to result in greater accessibility to existing services and facilities and therefore lower levels of car use than Option 2. This option is expected to include large urban extensions, particularly under the maximum growth scenario, that will provide new services and facilities, as well as being well-located for services, facilities and jobs within Cambridge. However, there is a risk that substantial growth around the city could put pressure on amenities within the city and would fail to support more rural settlements. It also has potential for adverse impacts on the landscape and historic environment by extending the urban influence of the city and affecting views into and out of the historic centre.

Option 4. Dispersal – new settlements

4.8 Option 4 'Dispersal – new settlements' performs very well when fully built out, although not as well within the plan period. It performs particularly well against the social SA objectives, as all new settlements are expected to be of a size that provide for the day to day needs of residents. This includes provision of features such as schools, health care, recreation and leisure facilities. In addition, new settlements can be designed in a way that encourages walking and cycling and incorporate good green infrastructure networks. However, new settlements result in large-scale landscape change and may be of a scale where it is difficult to avoid intersecting with environmental or heritage assets, areas at risk of flooding or source protection zones. In addition, new settlements have a long lead in time. Relying solely on new settlements to deliver growth may lead to a lack of housing availability earlier in the plan period and a period of disconnect between when housing is delivered and when jobs and supporting infrastructure is delivered. In order to ensure sustainable behaviours are encouraged in new settlements, it is important to avoid the need for residents to travel for work and services at the outset, otherwise these may become ingrained travel patterns.

Option 5. Dispersal – villages

4.9 Option 5 'Dispersal – villages' performs least well against many SA objectives and overall. This is because it is likely to lead to a series of small developments that are unlikely to provide the critical mass to provide new services and facilities. This could result in local services and facilities being over-capacity and not able to meet demand. In addition, more dispersed development is more likely to be car-dependent and, again, may not provide the critical mass required to focus improvements to the public transport network. Whilst this option is likely to result in development in close proximity to sensitive environmental assets, it may have less effect on these than options likely to result in large-scale development. In addition, this option could help to support the rural economy. Overall, a small level of growth at more rural settlements would likely have positive sustainability implications, but not as the primary focus of growth.

Option 6. Public transport corridors

4.10 Option 6 'Public transport corridors' performs well, particularly when fully built out. This option is expected to provide good accessibility to services and facilities for all and will help minimise traffic-related emissions of greenhouse gases and air pollutants due to good access to the public transport network. However, there is a risk that development in more rural areas under this option could be more distant from services, facilities and employment opportunities. There will always be some residents who choose to drive, rather than travel by sustainable transport, particularly if this is more convenient in terms of route or time to get to work. Therefore it is generally more sustainable to provide services, facilities and employment opportunities close to where people live. This option could also result in development in areas with higher environmental sensitivity, depending on the exact location of development.

Option 7. Supporting a high tech corridor by integrating homes and jobs

4.11 Option 7 'Supporting a high tech corridor by integrating homes and jobs' performs very well, particularly when fully built out. Option 7 will locate homes within easy access of employment and also likely within easy access of services and facilities, although this could be further enhanced by investment in sustainable transport in the area. Together, this would help boost the local economy by attracting workers to the area and minimise emissions of greenhouse gases and air pollutants as many residents would be likely to find employment near their homes. However, there are some environmentally sensitive features to the south of Cambridge, which would be the focus for development under this option. These include historic assets, sensitive landscape features and high quality agricultural land, which could be damaged or lost to development.

Option 8. Expanding a growth area around transport nodes

4.12 Option 8 'Expanding a growth area around transport nodes' performs very well when fully built out, but less well within the plan period. This option presents the opportunity to build on the existing settlement at Cambourne and expand its offer. Development would be well-located for Cambourne's existing services and facilities whilst providing new and/or expanded facilities too. It is also in a less sensitive area in terms of environmental and historic assets. This option performs relatively poorly within the plan period, as it is unlikely that the full infrastructure to support development will be provided, particularly in terms of sustainable transport. The introduction of a new railway station and the Cambridgeshire Autonomous Metro will greatly improve sustainable transport options at this location in the long term, which are likely to be attractive to residents. However, there is a substantial amount of uncertainty about when these will be delivered and the ranking of this option is dependent on delivery of those links. It is also noted that growth outside of Cambourne (i.e. in the villages) may put pressure on local services and facilities and have greater car dependency.

Next Steps

4.13 The Councils will consider the assessments in this document alongside evidence from various specialist consultants (which has also fed into this document). This will be discussed

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Greater Cambridge Local Plan strategic spatial options assessment

with stakeholders and feed into the Councils' decision on preferred options to take forward. Once preferred options (and any additional reasonable alternatives identified) have been worked up in detail, these will be subject to SA.

LUC

November 2020

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Greater Cambridge Local Plan
Transport Evidence Report
Cambridgeshire County Council
Transport Strategy and Funding Team
November 2020

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Executive Summary

Introduction

Cambridgeshire County Council are working with Greater Cambridge Shared Planning (GCSP), to provide a transport evidence base to support the preparation and examination of the Greater Cambridge Local Plan (GCLP) that runs to 2041.

This report forms the Transport Evidence that supports the emerging local plan. The results reported below represent the initial phase of the testing which focuses on the strategic spatial options identified by GCSP.

This Transport Evidence Report should be read in conjunction with the Existing Conditions Report that sets out the current situation for all transport modes in the Greater Cambridge Area.

The Spatial Scenarios Tested

The levels of growth and strategic spatial options tested in this initial phase of the transport evidence were informed by the initial spatial options set out in the First Conversation consultation (Issues and Options, held January-February 2020), and subsequent evidence which identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options.

The three growth level options being tested through the local plan are:

- Minimum – Standard Method homes-led
- Medium – central scenario employment-led
- Maximum – higher employment-led

The spatial scenarios tested through this report are:

- 1 Densification of existing urban areas (Densification)
- 2 Edge of Cambridge – outside the Green Belt (Edge – non-GB)
- 3 Edge of Cambridge – Green Belt (Edge – GB)
- 4 Dispersal – new settlements (New Settlements)
- 5 Dispersal – villages (Villages)
- 6 Public transport corridors (PT Corridors)
- 7 Supporting a high-tech corridor by integrating homes and jobs (Integrating Homes and Jobs)
- 8 Expanding a growth area around transport nodes (Expanding Growth Area)

Modelling Methodology

The modelling undertaken in this initial phase of the preparation of the Local Plan Transport evidence report made use of Cambridgeshire County Council's Cambridge Sub Regional Model (CSRМ). CSRМ has a single 2015 base year as this is the latest set of observed traffic counts on the network that have been validated.

In order to undertake the tests set out in this report it was necessary to create a 2041 Baseline. This new baseline was created by adding completed developments 2015-2020 and planned development 2020-2041 (planning permissions and adopted 2018 Local Plan allocations and Background Growth within the modelled area) to the 2015 Base year.

The new 2041 Baseline model also included transport schemes that are assumed to be in place by 2041. The development assumed for the spatial options along with the levels of in- and out-commuting set out in this report were then added to the Baseline.

The modelling undertaken in this initial phase of the assessment tests the maximum growth level option. The purpose of this is to understand the maximum possible transport impacts generated by each of the eight strategic spatial options.

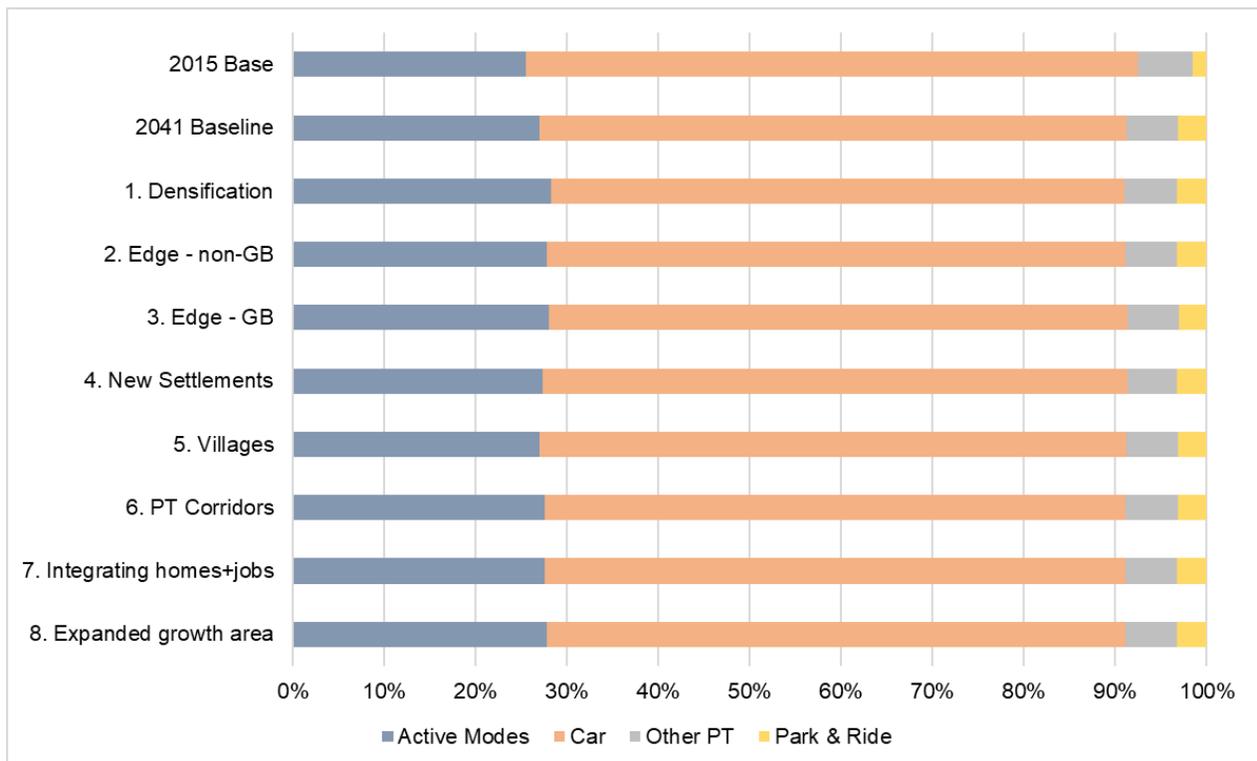
Results

The results below incorporate trip data from the 2015 base, the additional trips incorporated from the new 2041 baseline, and the eight strategic spatial options.

Trip Volumes and Mode Share

This information is from the Transport Demand Model (TDM) and enable the changes in mode shares across all modes to be assessed for each spatial option to be measured.

Percentage Transport Mode Share of Total Trips



Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

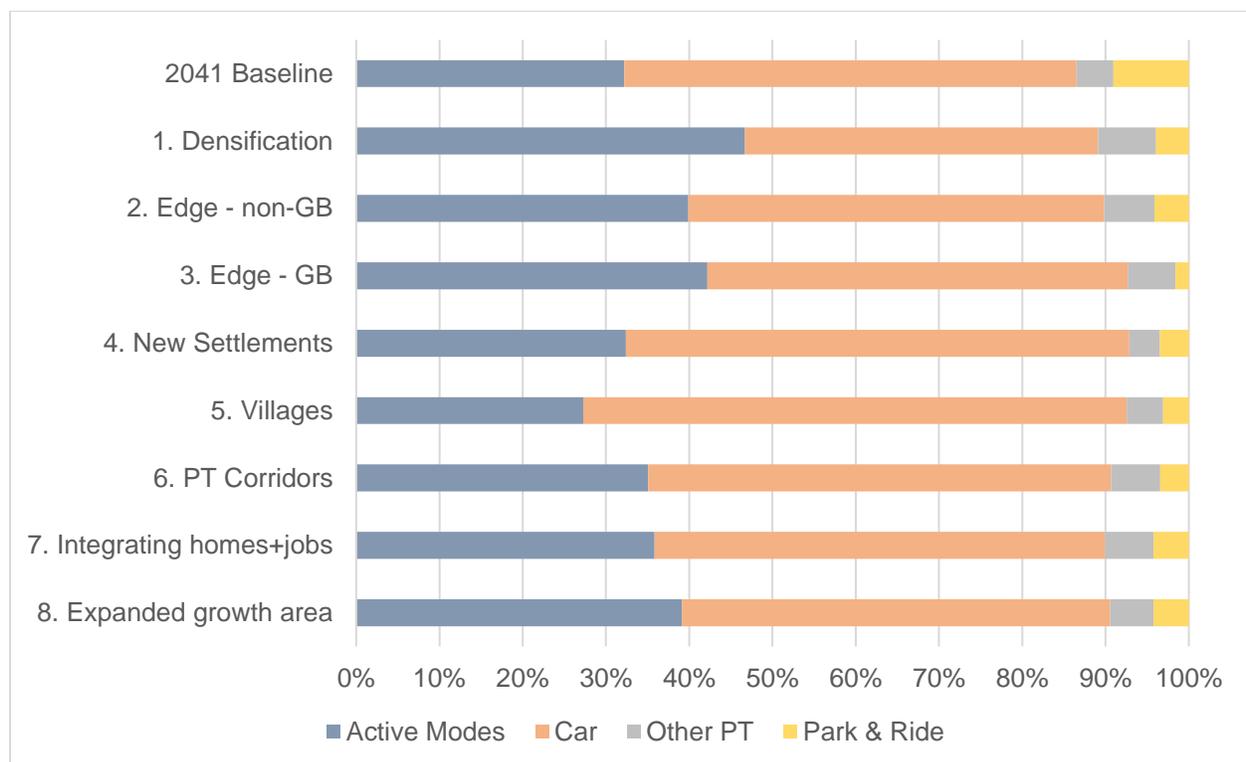
When we look at this graph we can see that the mode shares are fairly consistent across all the spatial options with very small differences shown. This is because the graph includes the trip data from the 2015 base and the new 2041 baseline.

The 2015 base includes a total of 1,568,824 trips whilst the addition of the 2041 Baseline results in an additional 437,765 trips, with each of the eight Strategic Spatial Options adding an additional 151,000 trips on top of the 2041 baseline. Thereby the cumulative total number of trips in the 2041 baseline is 2,006,589 and with the addition of the eight strategic spatial options is 2,157,589 trips.

The relatively small increases in trips in the 2041 Baseline and the eight strategic spatial options means that some of the impacts of the 2041 Baseline and spatial options in terms of mode share are masked by the volume of trips already in the 2015 Base Year.

Therefore in order to enable comparison of the changes in mode shares as a result of the introduction of each of the eight strategic spatial options the figure below sets out the change in mode shares for each spatial option compared to the 2041 Baseline. It is important to note that the results set out below do not include any site-specific mitigation above that assumed in the 2041 Baseline.

Percentage Transport Mode Share of Trip Growth



The best performing spatial option in terms of non-car modes is Option 1 Densification but all the options with the exception of Option 5 Villages have active mode share higher than that indicated in the 2041 Baseline. The results above do not include any additional mitigation over that in the 2041 Baseline. Therefore from this information it is possible to

conclude that all of the spatial options apart from option 5 Villages has the potential to increase use of active travel modes and reduce reliance on the car, as long as the exact location of the development sites is carefully considered. It is also possible to conclude that it should be possible to achieve additional levels of mode shift from all the options if the appropriate level of mitigation was introduced. This means that none of the strategic spatial options are completely ruled out using this metric, although the level of mitigation required to secure significant mode shift for option 5 villages is likely to be of such a scale as to render this option unviable.

Highway Model outputs

The reported statistics in this section use the standard Passenger Car Unit (PCU) of measurement. 1 PCU = 1 Car.

- **Travel distance** – the total distance (in PCU kilometres) travelled by all trips assigned to the network.
- **Travel time** – the total time (in PCU hours) taken for all trips assigned to the network.
- **Delay** – the total delay (which is total time minus free-flow¹ time) (in PCU hours) experienced by all trips assigned to the network.

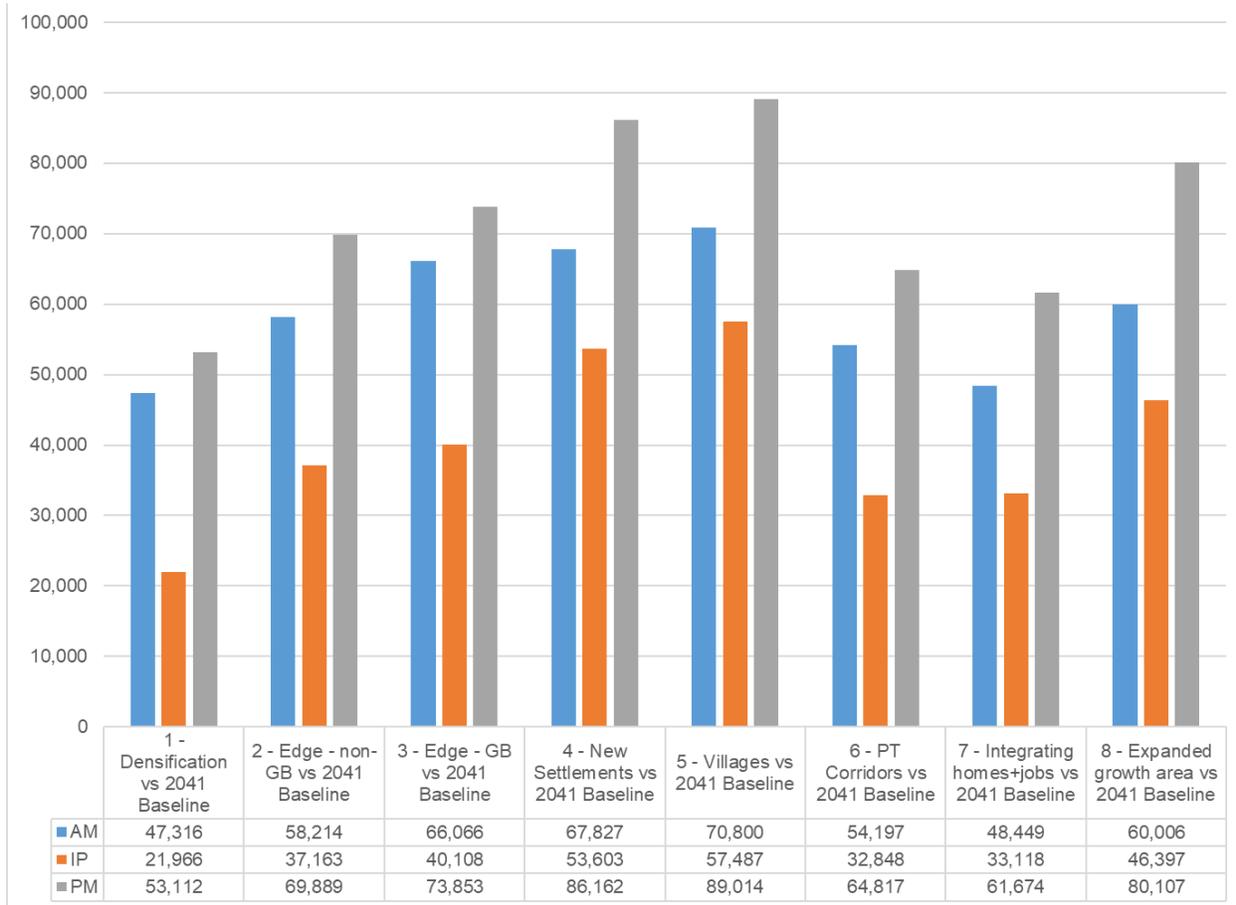
These metrics allow the scale of impact on the road network to be assessed as they record the changes to how far is being driven in total, the time spent driving and the changes in delay.

These metrics together help to indicate the impact of each spatial option on the Highway Network.

¹ Free Flow Speed is the time it would take to drive at the posted speed limit if there were no obstructions or congestion.

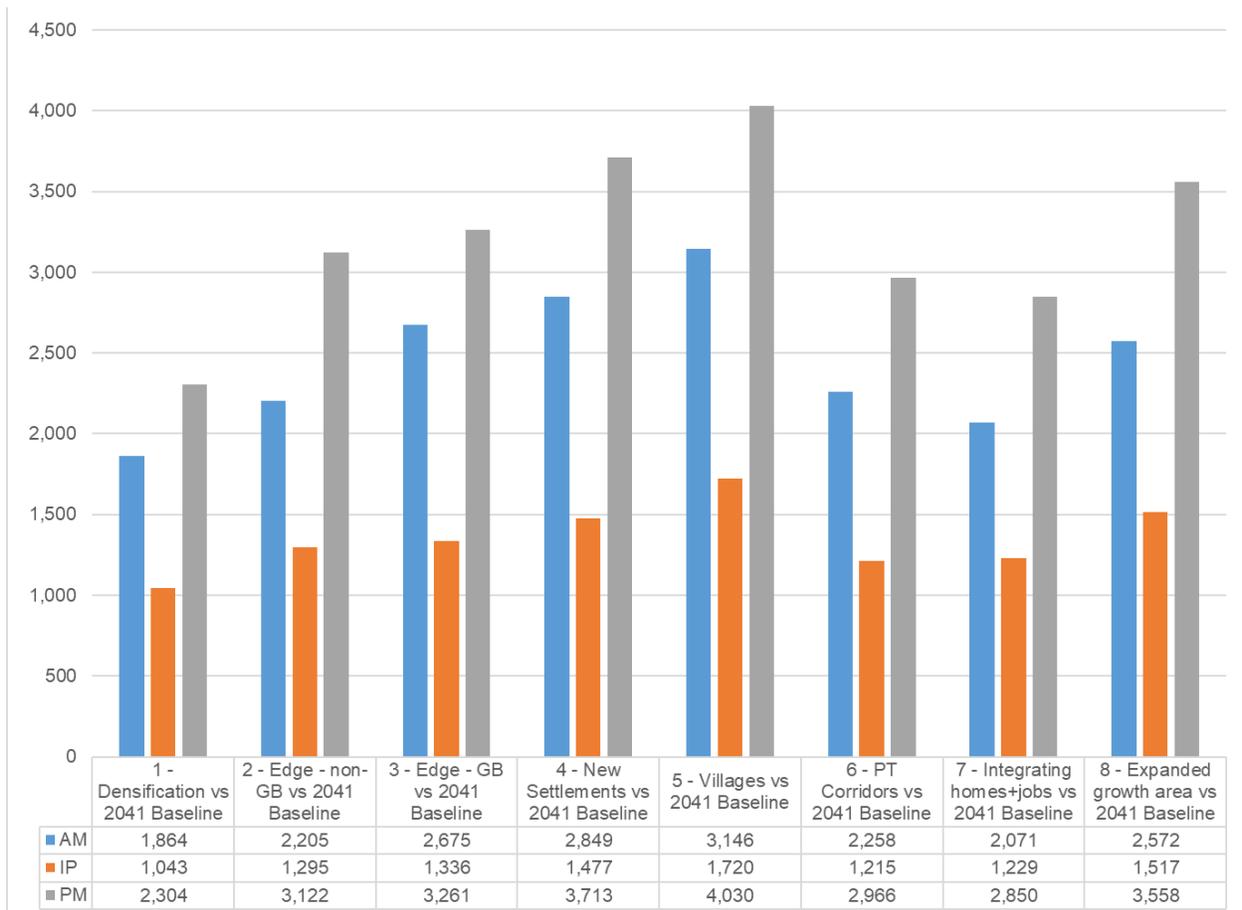
Travel Distance

Change in travel distance (Total pcu-kms) (Strategic Options vs 2041 Baseline)



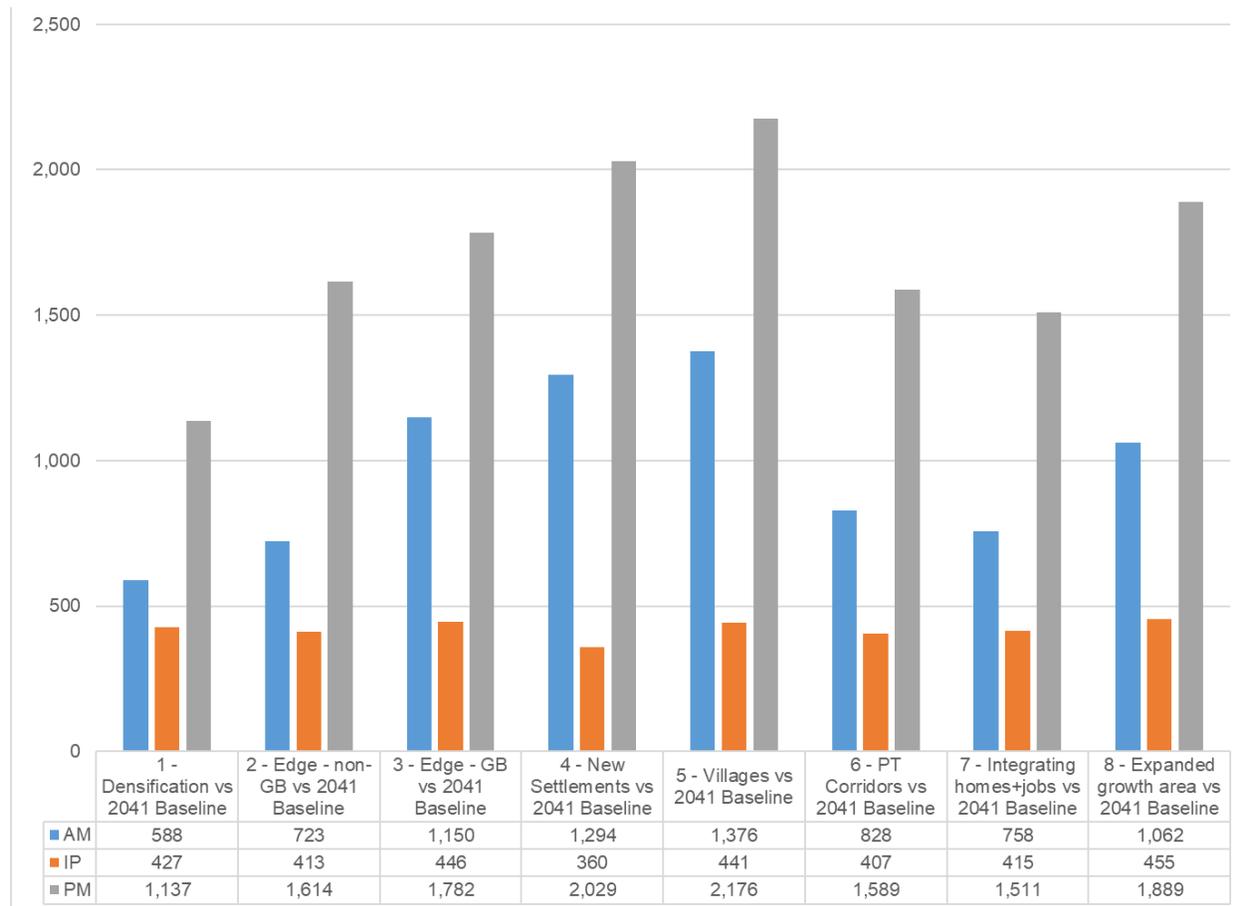
Travel Time

Change in total travel time (Total - pcu.hrs) (Strategic Options vs 2041 Baseline)



Delay

Change in total delay (Total - pcu.hrs) (Strategic Options vs 2041 Baseline)



The best performing spatial option in terms of the level of additional Travel distance, time and delay is Option 1 Densification. Off the remaining spatial options the majority have very similar levels of impacts that indicate that any of these options could be acceptable in transport terms if the right package of measures were to come forward. The exception to this is Option 5 Villages where the level of mitigation needed would be out of keeping with the scale of development within this option and therefore this might render this option unviable.

Conclusion

The tests undertaken to date indicate that all of the spatial options see changes in the mode shares of trips with the majority seeing an increase in the use of active modes for journeys meaning that the proportion of non-car travel increases from that indicated in the 2041 Baseline, this is despite the fact that there is no additional mitigation included in these tests over that included in the 2041 Baseline.

All of the spatial options show an increase in the number of trips, the time taken and the delays but as previously stated none of these tests include any specific mitigation over

that in the 2041 Baseline. The results set out in this report indicate that all of the spatial options will require additional mitigation to be introduced over that already assumed in the model, but the testing done to date does not indicate that any of the spatial options is likely to be undeliverable. It is, however, possible that the level of mitigation required to deliver option 5 villages might mean that this option would not be viable.

1 Introduction

1.1 Study Background

Cambridgeshire County Council are working with Greater Cambridge Shared Planning (GCSP), to provide a transport evidence base to support the preparation and examination of the Greater Cambridge Local Plan (GCLP) that runs to 2041.

This report forms the Transport Evidence that supports the emerging local plan. The information set out in this report will help inform the spatial distribution of development within the local plan. This Report should be read in conjunction with the Existing Conditions Report that sets out the current situation for all transport modes in the Greater Cambridge Area.

The results reported below represent the initial phase of the testing which focuses on the impact of the strategic spatial options on the level of trip making and mode shares in the Greater Cambridge Area.

1.2 Report Purpose

The purpose of this report is as follows;

- Set out the modelling methodology used in the assessment of the identified spatial options.
- Set out the details of the scale of development that forms the 2041 Baseline that has been used as the starting point for the assessment of the spatial options
- Set out the assumptions made for each of the spatial options, including the quantum and location of development
- Provide high level results setting out the impact of each spatial option on transport networks
- Provide a high level indication of the deliverability of each option in transport terms.

1.3 Report Structure

The report is structured as follows:

Chapter 2: Assessment of strategic (non-site specific) spatial options

Chapter 3: Modelling Methodology

Chapter 4: Comparison of Strategic Spatial Options

Chapter 5: Strategic Spatial Option Tests Conclusion

Chapter 6: Spatial Option Sensitivity Tests

2 Assessment of Strategic (Non-Site Specific) Spatial Options

Cambridge City Council and South Cambridgeshire District Council completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.

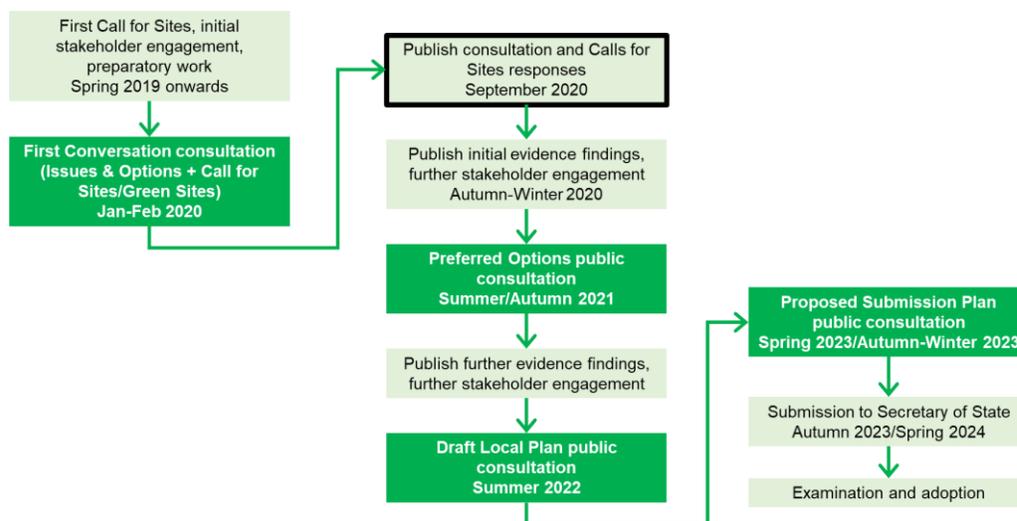
The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

The initial evidence findings will be reported to the Joint Local Planning Advisory Group in autumn 2020, and will help inform further engagement with stakeholders.

Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below in Figure 1.

Figure 1: Process of Local Plan Preparation

Process of Local Plan preparation



2.1 The Strategic Options

The three growth level options tested through the local plan are:

- Minimum – Standard Method homes-led
- Medium – central scenario employment-led
- Maximum – higher employment-led

The spatial scenarios tested through this report are:

- 1 Densification of existing urban areas
- 2 Edge of Cambridge – outside the Green Belt
- 3 Edge of Cambridge – Green Belt
- 4 Dispersal – new settlements
- 5 Dispersal – villages
- 6 Public transport corridors
- 7 Supporting a high-tech corridor by integrating homes and jobs
- 8 Expanding a growth area around transport nodes

3 Modelling Methodology

3.1 Introduction

This chapter sets out the methodology used to undertake testing of the strategic spatial options to support the development of the Greater Cambridge Local Plan to 2041.

3.2 Model Tools

The modelling undertaken used the Cambridge Sub-Regional Model 2 (CSRM2) E-Series which is owned by Cambridgeshire County Council and operated on behalf of the County Council by Atkins.

The CSRM consists of a highway assessment model (in the SATURN software) that is based on observed traffic data with a 2015 base year. In addition to this there is a variable demand model that captures the trip making potential and mode share of the sites within the model. This allows the trip generation and mode choice of differing mixes of development to be compared as the model determines the trips based on not just the number of dwellings and jobs assumed but also takes into consideration such things as the size of dwellings, the levels of car ownership, the type and location of the jobs to generate the trips for each of the strategic spatial options tested. The model is compliant with current Department for Transport (DfT) guidance as set out in the Transport Analysis Guidance (TAG). <https://www.gov.uk/guidance/transport-analysis-guidance-tag>

CSRM covers the administrative districts of Cambridge City, South Cambridgeshire as well as Huntingdonshire and East Cambridgeshire.

The modelling undertaken to date does not take any account of the impact of COVID-19, as the CSRM2 base model is validated to 2015 observed data. This is considered to be compliant with current DfT guidance as there is no certainty what travel patterns will look like once the restrictions in place to limit the spread of the COVID-19 virus are lifted. Cambridgeshire County Council are actively monitoring the impact of COVID 19 on the level of trips and mode shares in the County and future phases of modelling will refer to this ongoing work to ensure that the most robust modelling possible supports the Local Plan Transport Evidence.

3.3 Model Assumptions

As stated above the model has a 2015 base year, as this is the latest set of observed traffic counts that have been validated. This base year takes into account any development in place at that time. The 2015 base year has been used as the starting point for the assessment in this study. In order to be able to test the impacts of the eight strategic spatial options identified it is necessary to develop 2041 baseline. This was undertaken by adding completed developments 2015-2020 and planned development 2020-2041 (including planning permissions and adopted 2018 Local Plan allocations) to the 2015 Base year (Base Year). The 2041 Baseline model also included transport schemes that are assumed to be in place by 2041, given the level of confidence in their delivery.

Whilst the 2015 base year is not consistent with the start of the plan period, being 2020, the key outputs from the study relate to transport impacts at 2041 from all jobs and homes in Greater Cambridge, rather than the transport impacts from only the new homes and jobs delivered between 2020 and 2041, and as such there being a difference between the model base year and the start of the plan period does not affect the validity of the report's findings.

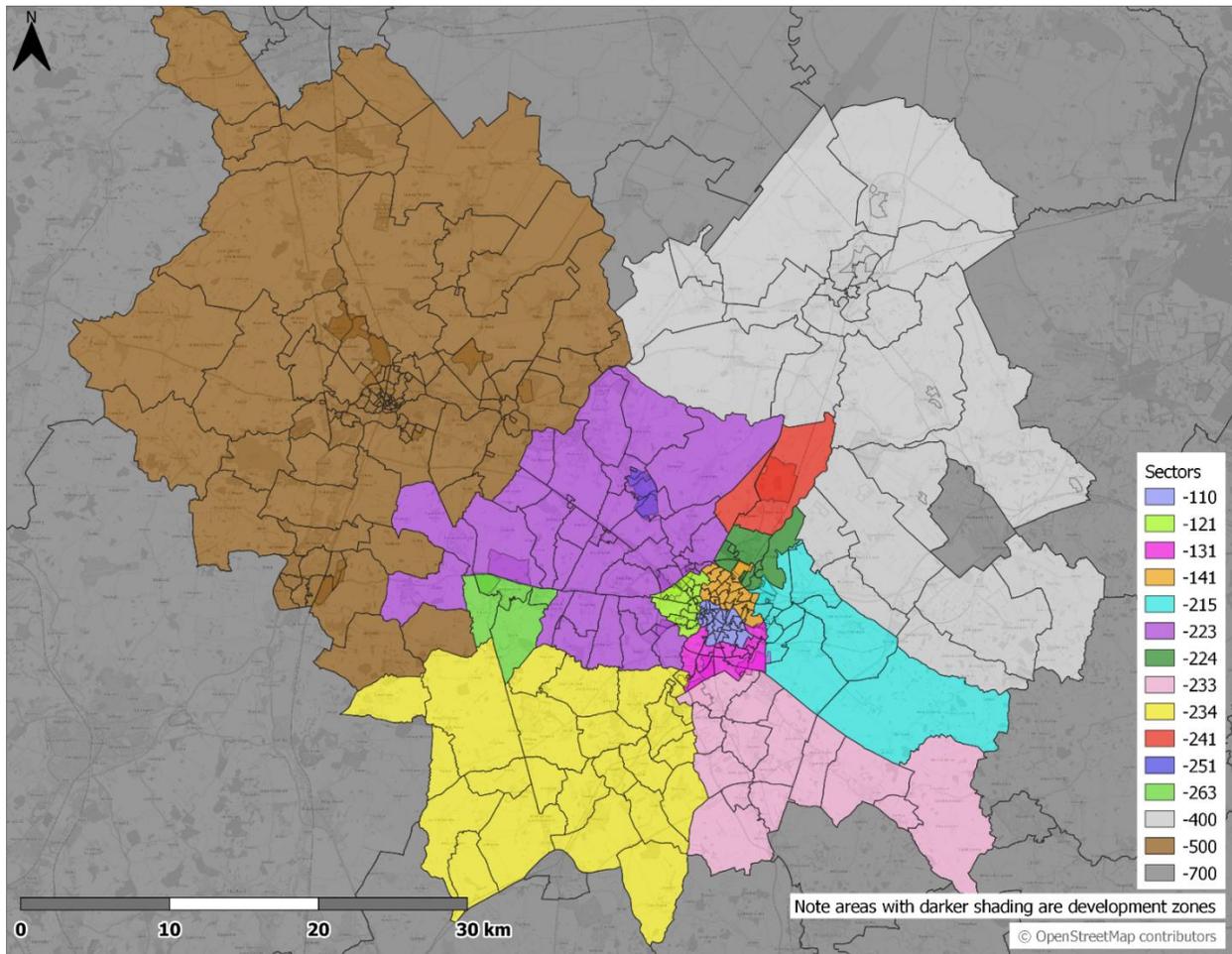
This 2041 baseline model includes the development that is assumed to be in place by 2041 and provides a consistent starting point for testing the eight strategic spatial options identified for the local plan. For clarity the analysis in this report compares the 2041 Baseline to the 2015 Base. Whilst the eight strategic spatial options are compared against the 2041 Baseline.

3.3.1 2041 Baseline Development Assumptions

CSRM2 explicitly includes growth in dwellings and jobs as agreed with GCSP and CCC, which are taken as direct inputs to the process. The level of growth assumed in the 2041 Baseline has been derived from housing trajectories produced by each of the local planning authorities covered by the model, in line with the existing Local Plans for each District. Estimates of jobs associated with 'B' class development were used for developments in the 2041 Baseline. The number of non-B-class jobs has then been distributed to cater for the levels of development, bringing the total number of jobs to the overall totals supplied. The number of school places required to cater for the 2041 Baseline has been estimated using the methodology used in the recent testing of the Greater Cambridge Partnership and Combined Authority transport schemes. This methodology is based on the estimated number of children generated by the proposed level of housing in the 2041 Baseline.

The growth assumed in the 2041 Baseline has been assigned to the relevant zones within the model which are in line with the output areas in the 2011 Census. The zones are then grouped in to larger sectors and these sectors have been used to assess the impact of the eight strategic spatial options identified at this stage of the Local Plan process, as they provide for a consistent reference for each of the eight strategic spatial options. The sectors used in this report are set out in Figure 2 below;

Figure 2: GC Local Plan sector system



Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

The resulting quantum of development assumed in each sector for the 2041 Baseline is as follows:

Table 1: 2041 Baseline Development Distribution by Sector

Sector Number	Sector Description	Dwellings	Employment
-110	Cambridge Central	19,093	40,114
-121	Cambridge NW+West	12,287	21,881
-131	Cambridge South	15,202	31,974
-141	Cambridge North East	17,892	21,875
-215	S Cambs East	7,829	10,906
-223	S Cambs North West	30,161	29,044
-224	S Cambs North	2,700	10,138
-233	S Cambs South	13,620	23,776
-234	S Cambs South West	16,500	12,962
-241	Waterbeach	7,894	7,067
-251	Northstowe	6,181	3,267
-263	Cambourne Bourn + Caxton	10,597	9,578
-400	East Cambridgeshire	48,149	43,179
-500	Huntingdonshire	97,568	91,566
Grand Total		305,673	357,326

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

Outside of the CSRM2 modelled area, the level of growth in jobs is assumed to be in line with the National Trip End Model (NTEM) produced by the Department for Transport, while the population growth is sourced from the Office for National Statistics.

In summary, the development quantum in the CSRM2 modelled area (which includes Cambridge City, South Cambridgeshire, Huntingdonshire and East Cambridgeshire) assumed to be in the 2041 baseline is as follows:

Table 2: Total Dwellings and Jobs 2041

Development type	2041
Dwellings	305,673
Jobs	375,326

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

3.3.2 2041 Baseline In- and out-commuting

Separately, in- and out-commuters are considered. In-commuters are defined as people who live outside the CSRM2 study area but work inside it; out-commuters are those who live inside but work outside. The following are the key inputs to calculating in- and out-commuter volumes:

- The population per dwelling
- The total resident population
- The proportion of the population that work
- The numbers of workers per household
- In-commuters as a percentage of internal jobs (I.e. jobs within the modelled area)
- Out-commuters as a percentage of internal workers

These figures are based on the East of England Forecasting Model (EEFM) which provides a set of baseline forecasts prepared by a leading independent forecasting house for the East of England region. The levels used in the 2041 baseline are as follows:

Table 3: 2041 Baseline In and Out Commuting

Baseline	2041 (EEFM in-commuting)
Dwellings (input)	305,673
Jobs (input)	357,326
Population per Dwelling (input)	2.30
Population (calculated)	703,202
Working Population Rate (input)	47.9%
Workers (calculated)	336,717
In-commuters as % of internal total jobs (input)	22.8%
Out-commuters as % of internal total workers (calculated)	18.1%
In-commuters (absolute) (calculated)	81,429
Out-commuters (absolute) (calculated)	60,821

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

From this it can be seen that in the 2041 baseline it is assumed that there are 81,429 in-commuters and 60,821 out-commuters.

3.3.3 2041 Transport Schemes

In addition to the above levels of development there is a need to include the transport schemes that are considered likely to be in place by 2041 to mitigate the levels of development proposed. The transport schemes included in the 2041 baseline are as follows:

- Greater Cambridge Partnership (GCP) schemes:
 - Cambourne to Cambridge;
 - Cambridge South East Transport Study;
 - Cambridge South West Travel Hub;
 - Waterbeach to North East Cambridge;
 - Eastern Access scheme;
 - City Access;
 - Foxton Rural Travel Hub; and
 - GCP Cycle Schemes

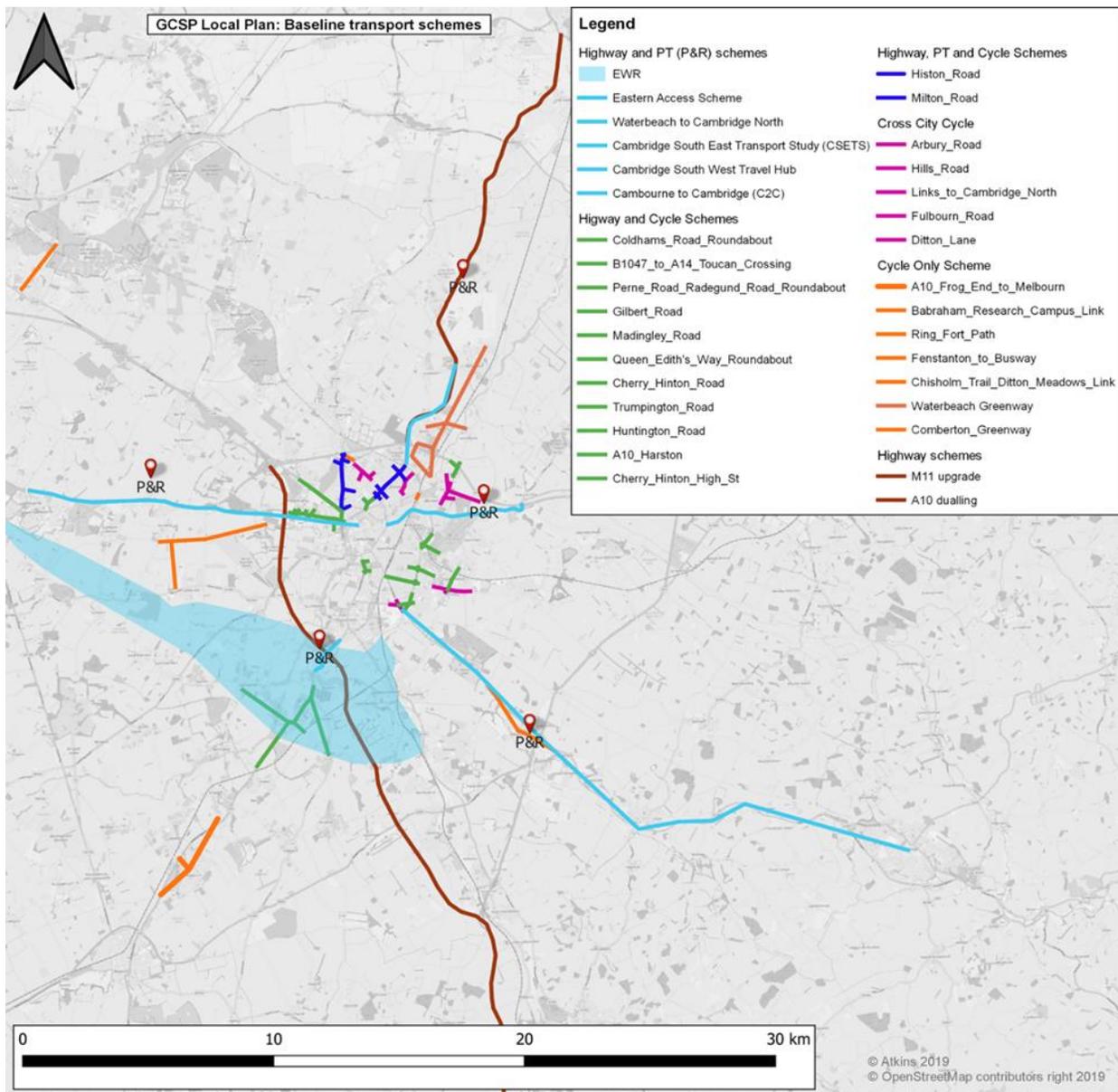
- The A428 Black Cat to Caxton Gibbet;
- Cambridge South Station;
- The A10 (Ely to Cambridge) highway improvements.

In addition it has been assumed that there will need to be an improvement to the M11 around Cambridge, relating to transport growth generated by through traffic arising from outside of the model area. This has been assumed to be in line with Highways England's previous scheme that was considered for inclusion in the national programme.

Note: some of these schemes are at an early stage of development and therefore they are represented in the model by "proxies" to represent the impact of the proposed scheme on the wider transport networks. The coding for these schemes used in this assessment is that used in the recent modelling of the various GCP schemes and the Cambridge Autonomous Metro (CAM) Outline Business Case.

The Royston to Granta Park Strategic Growth and Transport Study, East West Rail (EWR) and the CAM are not included within the core tests due to the uncertainty regarding the schemes and when they might be delivered, but given the significant potential implications of the these EWR and CAM schemes, these will be included in sensitivity tests that will follow on from the main spatial option tests.

Figure 3: Transport Schemes included in the 2041 Baseline



Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

3.4 Strategic Spatial Option Tests

This section sets out the details of the eight spatial options that are tested in this phase of the modelling. The level of development in each of the strategic spatial options is the same with only the location of the development changing.

The tests undertaken in this initial phase of the modelling assume that the level of additional development is the same across all the spatial options, so as to give a fair comparison of the impacts of each option on the transport networks within the Greater Cambridge area.

3.4.1 Growth Scenarios

As stated in Section 2 above there are three growth level options tested through the local plan, these are:

- Minimum – Standard Method homes-led
- Medium – central scenario employment-led
- Maximum – higher employment-led

The testing of the eight strategic spatial options reported below utilises the maximum growth option. This level of growth was chosen as it enables the maximum transport impacts of the eight strategic spatial options to be assessed and therefore allowed an assessment to be made of the likelihood as to whether this level of development could be accommodated on the transport networks. The potential impact of the minimum and medium options will be tested via the sensitivity testing (see Chapter 6).

The maximum growth scenario tested in this first phase of transport modelling assumes a 1:1 relationship between additional jobs above those supported by the minimum Standard Method calculations and additional resident workforce. This is in order to test the maximum level of homes that might be delivered through the plan-making process. Variations to this assumption are included as sensitivity tests (see Chapter 6).

3.5 Strategic Spatial Options

3.5.1 Introduction

This section sets out the assumptions made for each of the eight strategic spatial options.

3.5.2 In-Commuting Assumptions

Table 4: Development Quantum (Maximum Method) for Strategic Spatial Options Table 4 below shows the level of development included in each of the eight strategic spatial options tested in this report. This level of development has been added to the 2041 baseline figures set out in Table 2 above.

Table 4: Development Quantum (Maximum Method) for Strategic Spatial Options

Development type	Development quantum: 2041
Dwellings	26,389
Jobs	11,810

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

As stated above the level of in-commuting has been fixed for the tests undertaken at this stage. In-commuters are defined as people who live outside the CSRM2 model area but work inside it; out-commuters are those who live inside the model area but work outside. Note that CSRM2's study area covers the whole of Cambridge City, South Cambridgeshire, Huntingdonshire and East Cambridgeshire – so in- and out-commuters are those with a home or job outside of the four districts (not just the Greater Cambridge

area). However, the figures for Huntingdonshire and East Cambridgeshire are fixed in all scenarios; only the levels of in-commuting in City and South Cambridgeshire vary.

The levels of in- and out-commuting assumed in the 2041 Baseline were taken from EEFM as were the figures for the 2041 Standard Method. The number of in-commuters generated for the Standard method was then taken into the 2041 maximum method, the resulting levels of in- and out-commuting are set out in Table 5 below;

Table 5: Level of In- and Out-Commuting

	2041 Baseline	2041 "Standard Method"	2041 "Maximum Method"
Dwellings (input)	305,673	309,697	332,062
Jobs (input)	357,326	335,439	369,136
Population per Dwelling (input)	2.30	2.30	2.30
Population (calculated)	703,202	712,459	763,910
Working Population Rate (input)	47.9%	47.9%	47.9%
Workers (calculated)	336,717	341,150	365,787
In-commuters as % of internal total jobs (input/calculated ¹²)	22.8%	22.8%	20.7%
Out-commuters as % of internal total workers (calculated)	18.1%	24.1%	20.0%
In-commuters (absolute) (calculated/input ²³)	81,429	76,442	76,442
Out-commuters (absolute) (calculated)	60,821	82,153	73,092

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

From the information in Table 5 it is possible to see that the percentage of in-commuters remains the same in 2041 Baseline and the 2041 Standard Method at 22.8%, but drops to 20.7% in the 2041 Maximum Method as the absolute number of in-commuters is fixed at 76,442 in line with the minimum Standard Method.

It is also possible to see that the absolute number of out-commuters drops in the Maximum Method from that indicated by the Standard Method, this similarly indicates that more Greater Cambridge residents are able to take internal jobs than under the minimum - Standard Method.

3.5.3 Development Assumptions

The following tables set out the number of dwellings and jobs in each sector in each of the spatial options tested at this stage of the process:

² The proportion of in-commuters is an input for the Baseline and Standard Method, but is calculated for the Maximum Method to fix the absolute number of in-commuters at the Standard Method level ("consume your own smoke").

³ The number of in-commuters is calculated for the Baseline and Standard Method, but is an input for the Maximum method (fixed at the Standard Method value).

Table 6: Sectored Dwelling Changes 2015-41

Sector	2041 Baseline	1 - Densification	2 - Edge - non-GB	3 - Edge - GB	4 - New Settlements	5 - Villages	6 - PT Corridors	7 - Integrating homes+ jobs	8 - Expanded growth area
-110 Cambridge Central	3,182	1,599	-8	0	0	0	-5	-5	-5
-121 Cambridge NW+West	4,073	740	-5	1,239	0	0	-3	-3	-3
-131 Cambridge South	4,511	1,081	-6	4,248	0	0	-4	-4	-4
-141 Cambridge North East	1,571	8,192	7,170	0	0	0	5,239	5,114	5,114
-215 S Cambs East	2,550	1,785	1,931	7,080	4,550	912	253	1,932	1,932
-223 S Cambs North West	6,057	674	-13	2,301	0	7,116	1,269	-8	3,501
-224 S Cambs North	195	3,050	2,822	0	0	654	3,078	1,714	1,714
-233 S Cambs South	1,702	582	2,763	2,832	4,550	3,982	6,648	9,014	-4
-234 S Cambs South West	2,706	36	3,122	0	4,550	2,955	762	-4	-4
-241 Waterbeach	5,444	3,997	3,995	4,000	4,000	4,554	4,508	3,997	3,997
-251 Northstowe	6,181	3,817	3,815	3,819	3,819	3,819	3,816	3,816	3,816
-263 Cambourne Bourn + Caxton	6,177	868	865	870	4,920	2,396	867	867	6,375
-400 East Cambridgeshire	11,390	-10	-20	0	0	0	-13	-13	-13
-500 Huntingdonshire	23,693	-21	-41	0	0	0	-26	-26	-26
Grand Total	79,432	26,389	26,389	26,389	26,389	26,389	26,389	26,389	26,389

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

NB: The values presented for the 2041 Baseline are additional to the 2015 Base Year; those presented for each of the Spatial Options are additional to the 2041 Baseline. The small negative values are due to some redistribution of the locations of forecast dwellings in 2041 that occurs when the Spatial Options are added. This is a redistribution of development in 2041 i.e. dwellings that have not been built yet.

Table 7: Sectored Job Changes

Sector	2041 Baseline	1 - Densification	2 - Edge - non- GB	3 - Edge - GB	4 - New Settlements	5 - Villages	6 - PT Corridors	7 - Integrating homes+ jobs	8 - Expanded growth area
-110 Cambridge Central	1,819	362	-3	0	0	0	-2	-2	-2
-121 Cambridge NW+West	8,256	167	-2	560	0	0	-1	-1	-1
-131 Cambridge South	8,892	245	-3	1,920	0	0	-2	-2	-2
-141 Cambridge North East	1,300	3,619	2,883	0	0	0	2,654	2,464	2,464
-215 S Cambs East	1,398	562	845	3,200	2,010	412	57	845	845
-223 S Cambs North West	5,204	153	-2	1,040	0	3,216	288	-2	794
-224 S Cambs North	3,322	2,759	1,861	0	0	296	2,342	1,663	1,663
-233 S Cambs South	6,901	132	1,226	1,280	2,010	1,800	2,383	3,044	-1
-234 S Cambs South West	647	8	1,209	0	2,010	1,336	173	-1	-1
-241 Waterbeach	3,602	1,907	1,906	1,907	1,907	2,158	2,023	1,907	1,907
-251 Northstowe	3,267	1,406	1,406	1,406	1,406	1,406	1,406	1,406	1,406
-263 Cambourne Bourn + Caxton	4,723	497	496	497	2,466	1,187	497	497	2,746
-400 East Cambridgeshire	8,155	-2	-4	-0	-0	0	-2	-2	-2
-500 Huntingdonshire	12,337	-4	-8	0	0	0	-5	-5	-5
Grand Total	69,825	11,810	11,810	11,810	11,810	11,810	11,810	11,810	11,810

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

NB: The values presented for the 2041 Baseline are additional to the 2015 Base Year; those presented for each of the Spatial Options are additional to the 2041 Baseline. The negative job numbers in the table above represent a redistribution of jobs locations in 2041 when the spatial options are added compared to those in the 2041 Baseline.

4 Comparison of Strategic Spatial Options

4.1 Introduction

To recap, the Strategic Spatial options tested include those set out below, (the titles have had to be shortened for presentational purposes);

- 1 Densification of existing urban areas - (Densification)
- 2 Edge of Cambridge – outside the Green Belt – (Edge - non-GB)
- 3 Edge of Cambridge – Green Belt – (Edge – GB)
- 4 Dispersal – new settlements – (New Settlements)
- 5 Dispersal – villages – (Villages)
- 6 Public transport corridors - (PT Corridors)
- 7 Supporting a high-tech corridor by integrating homes and jobs – (Integrating homes + jobs)
- 8 Expanding a growth area around transport nodes – (Expanded growth area)

The first set of statistics presented in this section looks at the results for the whole model network. The statistics that are used in the assessment in this report are as follows:

Transport Demand Model outputs

- Change in the Active travel Mode Share (see below definitions at 5.2)
- Change in the Public Transport Mode Share
- Change in the Car Mode Share

These three metrics are from the Transport Demand Model (TDM) and enable the changes in mode shares across all modes and the total number of vehicles on the road network to be assessed for each spatial option.

Highway Model outputs

- Change in total vehicle kilometres
- Change in total vehicle hours
- Change in total Delay

These metrics from the highway model allow the scale of impact on the road network to be assessed as they record the changes to how far is being driven in total, the time spent driving and the changes in delay. These metrics together help to indicate the impact of each spatial option on the highway network.

Together these two sets of metrics enable the impact of each spatial option on all modes of transport to be assessed.

The following sections set out the results for each Scenario.

4.2 Trip Volumes and Mode Share

The information in Table 8 below shows the total number of trips in the model for the 2015 base year, the 2041 Baseline and each of the eight spatial options.

Mode shares are presented for;

- active mode (walk and cycle),
- car,
- Public Transport (bus, Guided Bus and Rail (no car) and
- Park & Ride (including rail Park & Ride).

Table 8: Total Trip Volumes by Transport Mode

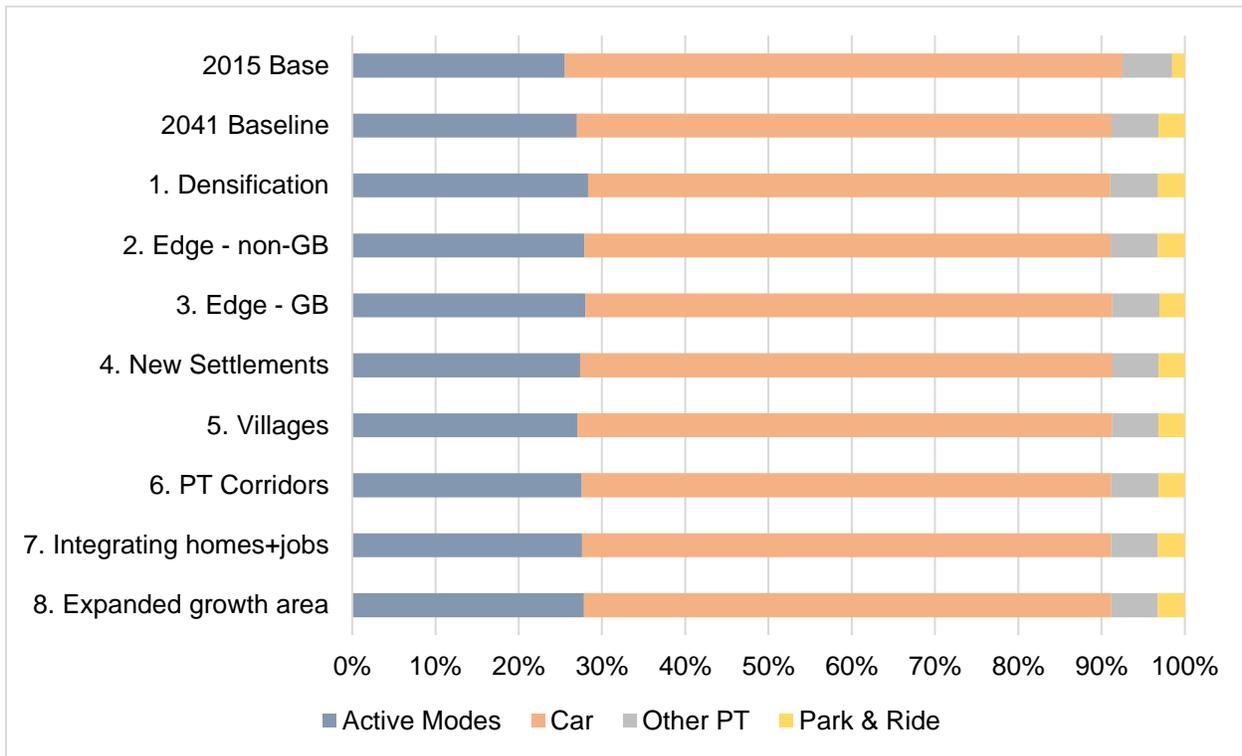
Row Labels	Active mode	Car	Public Transport	Park & Ride	Grand Total
Base Year (2015)	400,924	1,050,496	93,649	23,756	1,568,824
2041 Baseline	541,823	1,288,332	113,035	63,399	2,006,589
1. Densification	609,469	1,349,738	123,129	69,081	2,151,418
2. Edge - non-GB	600,276	1,361,583	121,864	69,465	2,153,188
3. Edge - GB	603,557	1,362,228	121,439	65,724	2,152,949
4. New Settlements	589,543	1,377,456	118,476	68,503	2,153,978
5. Villages	582,656	1,386,035	119,567	68,030	2,156,287
6. PT Corridors	593,658	1,370,572	121,732	68,478	2,154,440
7. Integrating homes + jobs	594,532	1,368,004	121,608	69,613	2,153,756
8. Expanded growth area	599,396	1,364,055	120,733	69,619	2,153,802

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

In the analysis that follows the 2041 Baseline is compared against the 2015 Base Year, whilst each of the eight Spatial Options have been compared to the 2041 Baseline.

Figure 4 below sets out the mode shares for the 2015 Base Year, the 2041 Baseline and each of the eight spatial options

Figure 4: Percentage Transport Mode Share of Total Trips



Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

From this we can see that the mode shares are fairly consistent across all the spatial options with very small differences shown. This is because Figure 4 includes all the trips including those from the 2015 base year, in which there were a total of 1,568,824 trips. The addition of the 2041 Baseline growth resulted in an additional 437,765 trips, with each of the eight Strategic Spatial Options adding an additional 151,000 trips. The result is that some of the impacts of the 2041 Baseline and spatial options are masked by the 2015 Base Year trips.

Table 9 below sets out the change in mode shares for each spatial option.

Table 9: Change in percentage mode share of total trips

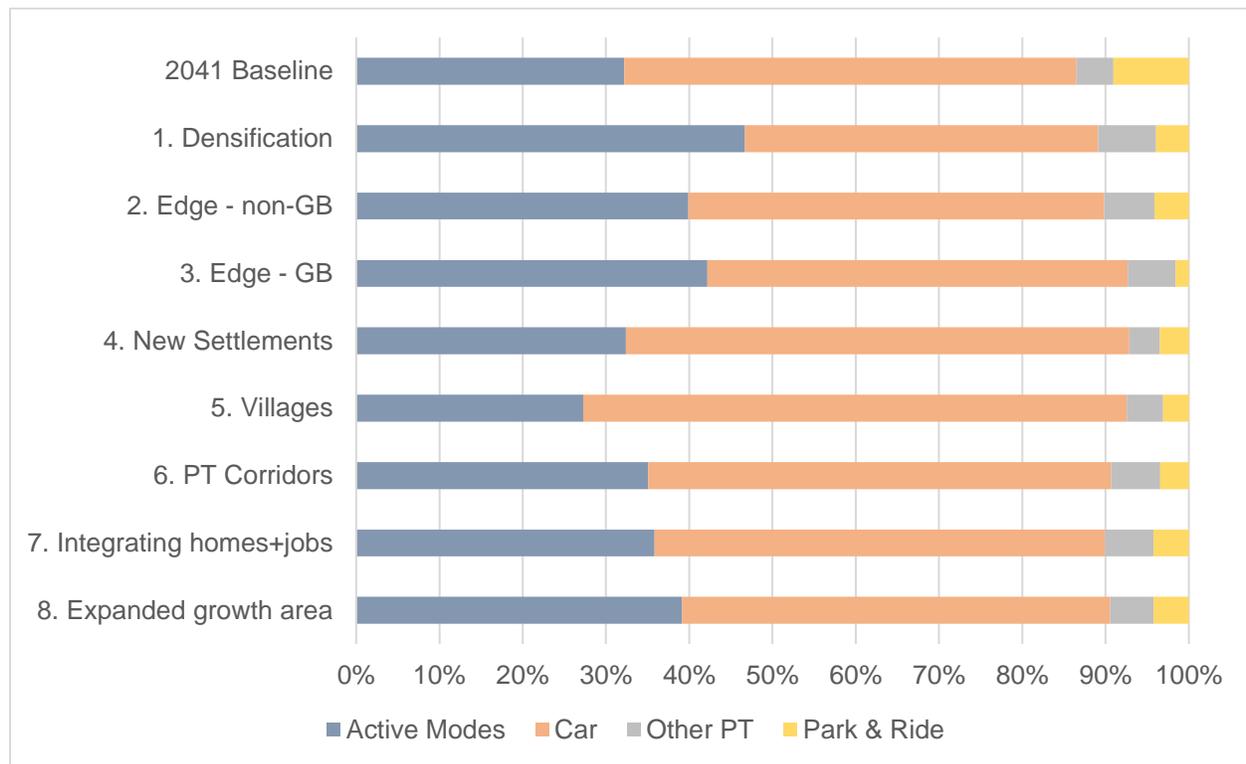
	Active mode	Car	Other Public Transport	Park & Ride
2041 Baseline	1.4%	-2.8%	-0.3%	1.6%
1. Densification	1.3%	-1.5%	0.1%	0.1%
2. Edge - non-GB	0.9%	-1.0%	0.0%	0.1%
3. Edge - GB	1.0%	-0.9%	0.0%	-0.1%
4. New Settlements	0.4%	-0.3%	-0.1%	0.0%
5. Villages	0.0%	0.1%	-0.1%	0.0%
6. PT Corridors	0.6%	-0.6%	0.0%	0.0%
7. Integrating homes+jobs	0.6%	-0.7%	0.0%	0.1%
8. Expanded growth area	0.8%	-0.9%	0.0%	0.1%

Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

The information in Table 9 indicates that the car mode share for the 2041 Baseline is 2.8 % lower than the 2015 Base Year, which is due to the inclusion of the transport schemes in the 2041 Baseline run (see 3.3.3). It is also possible to see that all of the spatial options except option 5 - Villages show a further reduction in the car mode share, beyond that seen in the 2041 Baseline. The biggest increase in mode share is seen in the use of active modes of travel in all spatial options except option 5 Villages.

However, as set out above due to the inclusion of the 2015 base year trips the changes in mode shares appear to be very small. Therefore, in order to gain a better understanding of the performance of each of the eight spatial options tested, Figure 5 below sets out the mode share for each of the spatial options without the 2015 Base Year trips. This enables the mode shift of growth associated with just the eight spatial options to be assessed against the 2041 Baseline.

Figure 5: Percentage Transport Mode Share of Trip Growth



Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

From the information in Figure 5 we can see that the mode shares for the 2041 Baseline and the eight spatial options vary much more in isolation than when considered with the 2015 base year. It is important to note that there is no additional mitigation included in the option tests over that included in the 2041 Baseline.

Best Performing Options

Options 1 Densification, 2 Edge – non-GB, 3 Edge – GB and 8 Expanded Growth Area perform the best in terms of reducing reliance on car for travel.

Option 1 Densification performs particularly well in generating the highest percentage of active mode trips with 46.7% of trips, in addition the Public transport mode share is 7.0% and a further 3.9% of trips using park and ride giving a total of 57.6% of trips by non-car modes.

Option 2 Edge – non-GB shows an active mode share of 39.9%, 6% public transport and 4.1% park and ride giving a total of 50.0% of trips by non-car modes.

Option 3 Edge – GB shows an active mode share of 42.2%, 5.7% public transport and 1.6% park and ride giving a total of 49.5% of trips by non-car modes.

Option 8 Expanded Growth Area shows an active mode share of 39.1%, 5.2% public transport and 4.2% park and ride giving a total of 48.6% of trips by non-car modes.

Medium Performing Options

The majority of the remaining options show larger proportions in non-active mode shares than the options above.

Option 7 Integrated homes and jobs shows an active mode share of 35.8%, 5.8% public transport and 4.2% park and ride giving a total of 45.9% of trips by non-car modes.

Option 6 PT Corridors shows an active mode share of 35.1%, 5.9% public transport and 3.4% park and ride giving a total of 44.4% of trips by non-car modes.

Option 4 New Settlements shows an active mode share of 32.4%, 3.7% public transport and 3.5% park and ride giving a total of 39.5% of trips by non-car modes.

Poorly Performing Options

Option 5 Villages is the one option to see a decrease in active mode travel compared to the 2041 baseline and shows an active mode share of 27.3%, 4.4% public transport and 3.1% park and ride giving a total of 34.7% of trips by non-car modes.

Mode Share Conclusion

From this it is possible to see that option 1 Densification would require the least amount of additional mitigation whilst option 5 villages would require the most mitigation to facilitate additional mode shift over that indicated as being achievable utilising the 2041 Baseline transport schemes. The level of mitigation required to facilitate the delivery of option 5 villages is likely to be of such a scale that it would render the development sites within this option unviable.

4.3 Highway Impact

These figures are taken from the CSRM2 Highway Assignment Model (HAM). The statistics are reported separately for each of the HAM model periods, which are:

- AM peak (08:00 – 09:00)
- Average inter-peak hour (10:00 – 16:00)
- PM peak (17:00 – 18:00)

The reported statistics use the standard Passenger Car Unit (PCU) of measurement. 1 PCU = 1 Car.

The following statistics are reported across the full modelled area:

- **Travel distance** – the total distance (in PCU kilometres) travelled by all trips assigned to the network.
- **Travel time** – the total time (in PCU hours) taken for all trips assigned to the network.
- **Delay** – the total delay (which is total time minus free-flow⁴ time) (in PCU hours) experienced by all trips assigned to the network.

⁴ Free Flow Speed is the time it would take to drive at the posted speed limit if there were no obstructions or congestion.

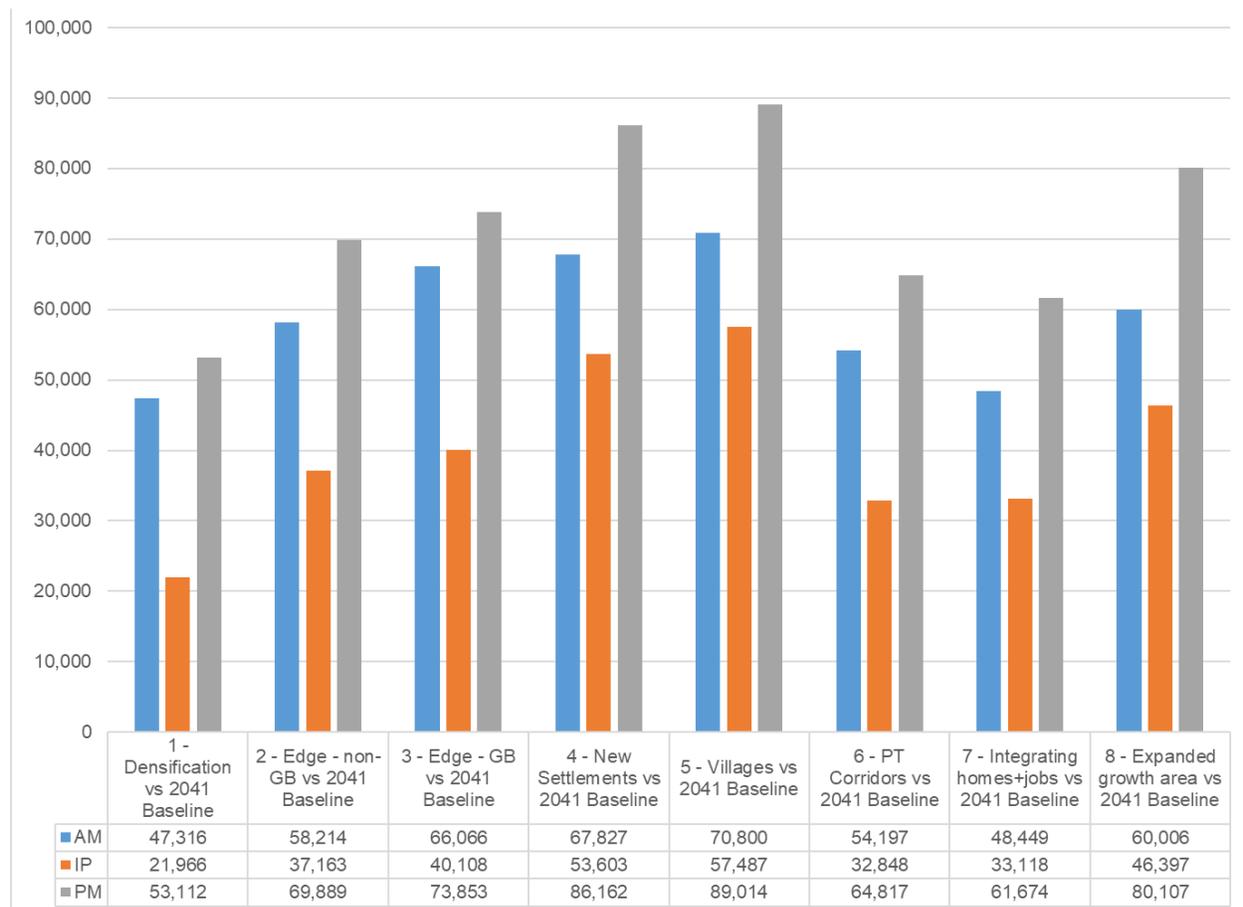
The figures below show each of the Spatial Options against the 2041 Baseline to illustrate the differences between Options.

It is important to note that the model tests a neutral day and therefore, does not take into account any unexpected events (such as car accidents on the road or bad weather conditions) which may occur.

4.3.1 Travel Distance

This metric shows the change in the distances travelled as a result of the distribution of growth in each of the eight strategic spatial options. The total distance travelled is derived by multiplying the number of vehicles on the road network in the model area by the average length of their trips (measured in kilometres). This metric enables the increase in vehicle trips generated by each of the eight spatial options to be quantified and assessed.

Figure 6: Change in travel distance (Total pcu-kms) (Spatial Options vs 2041 Baseline)



Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

As shown in Figure 6, all the options result in an increase in the total distance travelled. It is interesting to see that the profile for all the spatial options is very similar with each showing that the PM Peak has the highest increase and the inter peak the lowest, with the AM peak for all options higher than the inter peak but lower than the PM peak.

However, when the detailed information for each option is assessed we can see the following:

Best Performing Options

Options 1 Densification, 6 PT Corridors and 7 Integrating homes and Jobs perform the best in terms of the least vehicle kilometres travelled.

Option 1 Densification is shown to generate the lowest number of additional vehicle kilometres across all time periods. This is due to the proximity of the development in this option to the edge of the existing urban area of Cambridge, therefore putting the residents of these dwellings close to centres of employment where the residents of the proposed developments might be looking to work. The inter peak level is very low indicating that the development provides the required facilities close to dwellings thus reducing the distances needed to access day to day requirements.

Option 6 PT Corridors generates circa 8,000 more vehicle Kilometres in the AM peak and circa 11,000 more in the PM peak which highlights the greater distance of the development in this option from Cambridge, but this level of increased vehicle kilometres is relatively small and therefore indicates that this scenario offers a realistic prospect to further reduce vehicle kilometres with the introduction of the right package of mitigation.

Option 7 Integrating homes and Jobs generates circa 1,000 more vehicle Kilometres in the AM peak and circa 8,000 more in the PM peak which highlights the greater distance from Cambridge of the development in this option but this level of increased vehicle kilometres is relatively small and therefore indicates that this scenario offers a realistic prospect to further reduce vehicle kilometres with the right package of mitigation especially as the AM peak figures are so close to that of option 1 Densification.

Medium Performing Options

The remaining options show bigger increases in vehicle kilometres than the options above.

Option 2 Edge – non-GB is shown to generate circa 1,000 more vehicle kilometres in the AM peak and 16,000 more in the PM peak than option 1 Densification. This indicates that this strategic spatial option relies on car travel more than option 1 Densification and therefore the level of mitigation required to reduce the need to travel by car for this option would be significantly higher than for option 1 densification.

Option 3 Edge – GB is shown to generate more trips in the AM peak than option 2 Edge - non-GB (circa 8,000) but the difference in the PM peak is much less marked (circa 4,000) which is due to the increased distance from Cambridge of the development in this option. Therefore addition mitigation will be needed for this option to ensure that the trips that need to be made have viable alternatives to the private car. However, it is considered that the level of mitigation required would be deliverable given the scale of the developments included in this option.

Option 4 New Settlements is shown to have a similar level of vehicle kilometres in the AM peak period as the Edge of Cambridge options (options 2 and 3) but the inter and PM peaks show significant increases over either of the Edge options. This indicates that there are potentially trips accessing the new settlements by car that were going elsewhere in the 2041 Baseline due to the facilities on offer in the new settlement. The level of mitigation needed is likely to be greater than for options 2 and 3 but is still considered to be deliverable due to the scale of development proposed in the New Settlement option.

Option 8 Expanded Growth Area indicates a lower level of vehicle kilometres than either of the edge options (options 2 and 3) in the AM peak but a higher level in the PM peak (circa 7,000). However, it is important to note that there is no additional mitigation included in the model over that in the 2041 Baseline which is key for this option as it is aligned along the line of the proposed East West Rail scheme. These results indicate that this option would still be deliverable even without the introduction of East West Rail with the right package of mitigation to reduce reliance on the private car.

Poorly Performing Options

Option 5 Villages shows the largest increase in all three time periods indicating that the dispersal of development leads to increased vehicle kilometres. The dispersed nature of the development in this option would make it difficult to provide active and public transport links to cater for the trips the option would generate, as the individual sites are quite small and therefore the level of mitigation could render the sites in this option unviable.

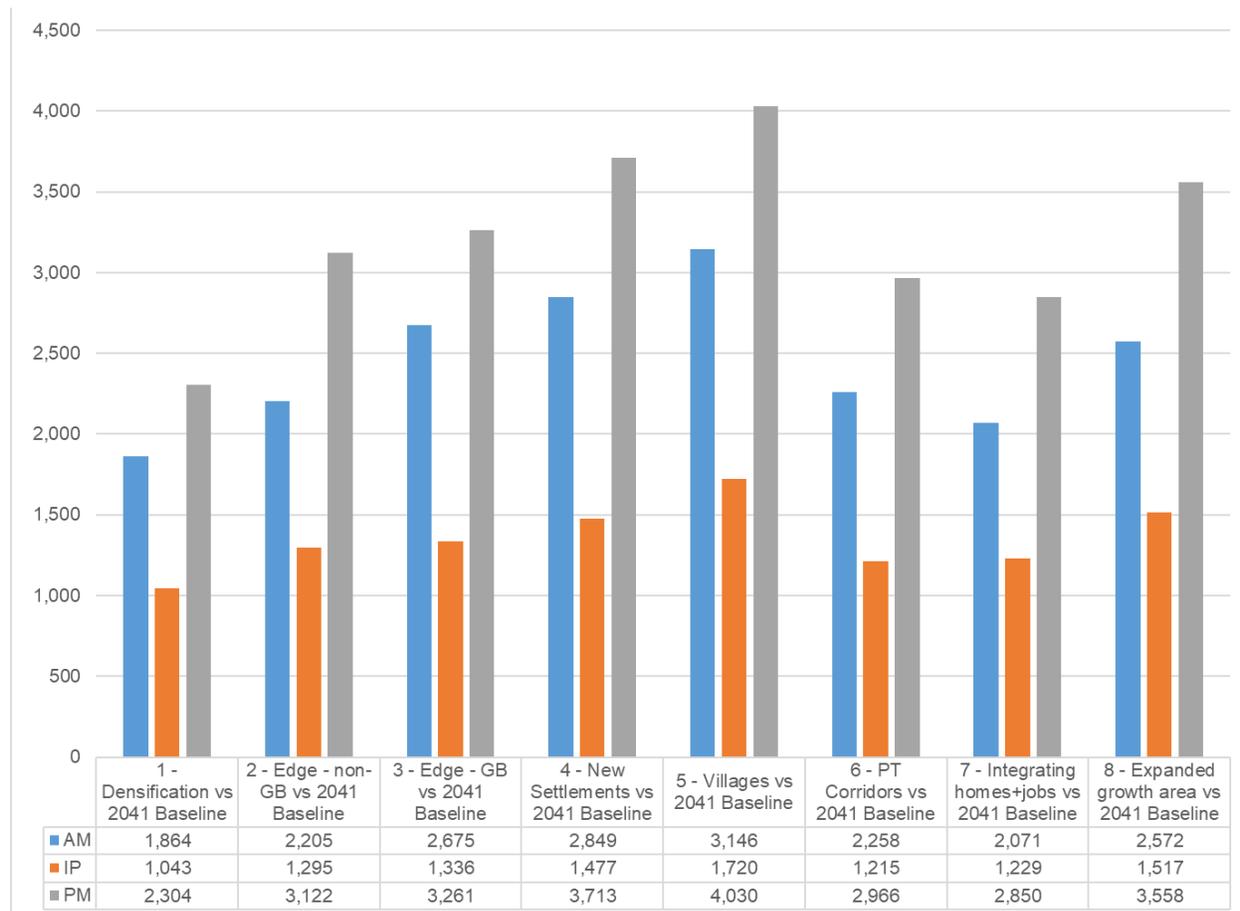
Distanced Travelled Conclusion

From this it is possible to see that option 1 Densification would require the least amount of additional mitigation whilst villages would require the most to reduce the total number of vehicle kilometres travelled and encourage use of active modes and public transport. The level of mitigation required to facilitate the delivery of option 5 villages is likely to be of such a scale that it would render the development sites within this option unviable.

4.3.2 Travel Time

This metric shows the change in the travel time as a result of the distribution of growth in each of the eight strategic spatial options. The travel distance is divided by the speed to give the travel time.

Figure 7: Change in total travel time (Total - pcu.hrs) (Spatial Options vs 2041 Baseline)



Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

As shown in Figure 7, all the options result in an increase in the total time travelled, measures in PCU/hours. It is interesting to see that the profile for all the spatial options is very similar with each showing that the PM Peak has the highest increase and the inter peak the lowest with the AM peak for all options being higher than the inter peak but lower than the PM peak. However, when the detailed information for each option is assessed we can see the following:

Best Performing Options

Options 1 Densification and 7 Integrating homes and Jobs perform the best in terms of the least additional total travel time.

Option 1 Densification is shown to generate the lowest level of additional travel time across all time periods, which is due to the fact that the level of additional vehicle kilometres generated as set out in Figure 6 is the lowest of any of the eight strategic spatial options. The travel time is also affected by the proximity of the development in this option to Cambridge and the major employment areas.

Option 7 Integrating homes and Jobs generates circa 300 more PCU/hrs in the AM peak and circa 500 more in the PM peak than the option 1 densification. This level of change

indicates that this scenario offers a realistic prospect to further reduce travel time with the right package of mitigation especially as the AM peak figures are so close to that of option 1 Densification.

Medium Performing Options

The remaining options show bigger increases in travel time than the options above.

Option 2 Edge – non-GB is shown to generate circa 300 more hours travelled in the AM peak and 800 more in the PM peak than option 1 Densification. This indicates the need to provide additional mitigation to reduce the need to travel by car for this option.

Option 3 Edge – GB is shown to generate circa 800 more hours travelled in the AM peak and 1,000 more in the PM peak than option 1 Densification. This is similar to that indicated for Option 2.

Option 4 New Settlements is shown to have a similar level of vehicle kilometres in the AM peak as the Edge options (options 2 and 3) but the PM peak shows an increase over either of the Edge options. This indicates that there are potentially trips accessing the new settlements by car that were going elsewhere in the 2041 Baseline, due to the facilities on offer in the new settlement. The level of mitigation needed is likely to be greater than for the Edge options but still considered to be deliverable due to the scale of development proposed in the New Settlement option.

Option 6 PT Corridors the level of vehicle hours indicated as a result of this option is less than for either of the edge options (options 2 and 3) indicating that this option although generating more trips, results in less time spent travelling.

Option 8 Expanded Growth Area indicates a higher level of travel time than the other edge (option 2 and 3) and PT corridor (option 6) options, but the level of travel time could be mitigated due to the mass of development proposed for this option. It is important to note that there is no additional mitigation included in this test which is key for the option as this is aligned along the line of the proposed East West Rail scheme. These results indicate that this option would still be deliverable even without the introduction of East West Rail with the right package of mitigation to reduce reliance of the private car.

Poorly Performing Options

Option 5 Villages shows the largest increase in all three time periods indicating that the dispersal of development leads to increased travel time, whilst it would be possible to mitigate this impact if the right mitigation package were put forward. However, the dispersed nature of the development in this option would make it difficult to provide active and public transport links to cater for the trips in this option as the individual sites are quite small and therefore the level of mitigation could render the sites in this option unviable..

Distance Travelled Conclusion

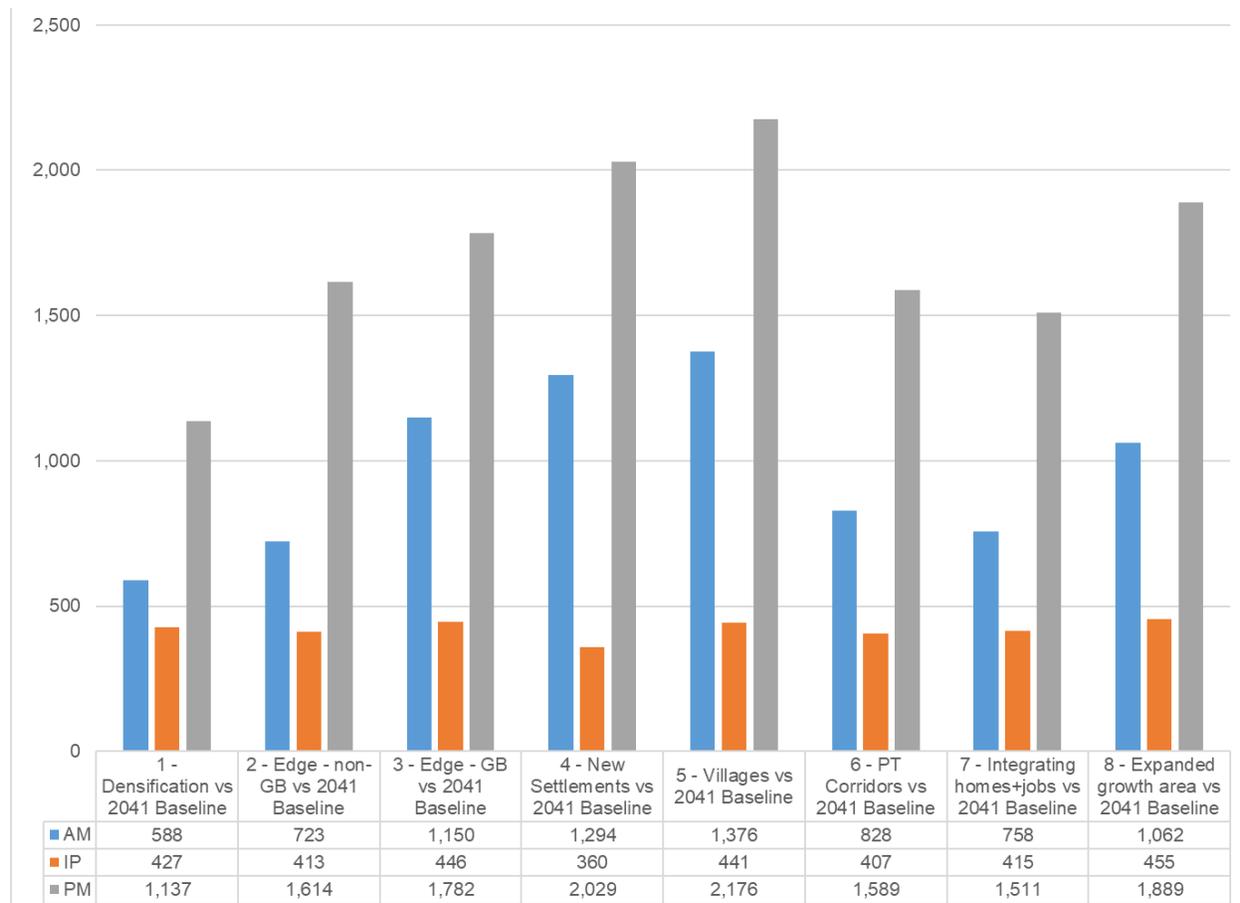
From this it is possible to see that option 1 Densification would require the least amount of additional mitigation whilst option 5 villages would require the most to reduce the travel time and encourage use of active modes and public transport. However, the level of

mitigation required to facilitate the delivery of option 5 villages is likely to be of such a scale that it would render the development sites within this option unviable.

4.3.3 Delay

This metric shows the change in the delay as a result of the eight spatial options. This is calculated by taking the actual vehicle-hours experienced in the model minus the vehicle-hours that would be experienced at the free flow speed.

Figure 8: Change in total delay (Total - pcu.hrs) (Spatial Options vs 2041 Baseline)



Source: GCSP Local Plan_DRAFT CSRM Outputs_v0.4

From Figure 8 we can see that all the options lead to an increase in delay over and above that seen in the 2041 Baseline, with the Villages option (option 5) showing the largest increase in delay in all time periods, the New Settlements option (option 4) next and Edge of Cambridge Green Belt option (option 3) third. As with the earlier metrics none of these results indicate that there is an option that could not be mitigated with the right package of interventions.

Best Performing Options

Options 1 Densification and 7 Integrating homes and Jobs perform the best in terms of the least additional total delay.

Option 1 Densification is shown to generate the lowest level of additional delay across all time periods. This is due to the fact that the level of additional vehicle kilometres

generated as set out in Figure 6 above is the lowest of any of the spatial options tested. Therefore this option generates the lowest number of additional trips than any of the other options.

Option 7 Integrating homes and Jobs generates circa 200 more PCU/hrs in the AM peak and circa 400 more in the PM peak than the densification option. This level of change indicates that this scenario offers a realistic prospect to further reduce delay with the right package of mitigation, especially as the AM peak figures are so close to that of option 1 Densification.

Medium Performing Options

The remaining options show bigger increases in delay than the options above.

Option 2 Edge – non-GB is shown to generate circa 150 more hours delay in the AM peak and 500 more in the PM peak than option 1 Densification. This indicates the need to provide additional mitigation to reduce the need to travel by car for this option.

Option 3 Edge – GB is shown to generate circa 600 more hours delay in the AM peak and 600 more in the PM peak than option 1 Densification. This is similar to that indicated for Option 2.

Option 4 New Settlements is shown to have a similar level of hours delay in the AM peak period as the Edge options but PM peak shows an increase over either of the Edge options. This indicates that there are potentially trips accessing the new settlements by car that were going elsewhere in the 2041 Baseline due to the facilities on offer in the new settlement. The level of mitigation needed is likely to be greater than for the Edge options but still considered to be deliverable due to the scale of development proposed in the New Settlement option.

Option 6 PT Corridors shows a level of delay less than for either of the edge options in the AM and PM Peak periods indicating that this option although generating more trips results in less time spent travelling.

Option 8 Expanded Growth Area indicates a higher level of delay than the other medium performing options but that this level of impact could still be mitigated due to the mass of development proposed for this option. It is important to note that there is no additional mitigation included in this test which is key for the option as this is aligned along the line of the proposed East West Rail scheme. These results indicate that this option could be made to work in transport terms even without the introduction of East West Rail.

Poorly Performing Options

Option 5 Villages shows the largest increase in all three time periods indicating that the dispersal of development leads to increased delay across the day. Whilst it would be possible to mitigate this impact if the right mitigation package were put forward it is very likely that the scale of this mitigation would render this spatial option unviable.

Delay Conclusion

From this it is possible to see that option 1 Densification would require the least amount of additional mitigation, whilst Option 5 Villages would require the most to reduce the level of delay to that shown by the Baseline. However, the level of mitigation required to facilitate the delivery of Option 5 Villages is likely to be of such a scale that it would render the development sites within this option unviable.

5 Strategic Spatial Option Tests Conclusion

The Strategic Spatial Options have been assessed against a consistent set of transport metrics.

It is important to remember that the tests in this report do not include any additional mitigation (over that assumed to be in place by 2041 as set out in Section 3.3.3).

The following section summarises the results of all the transport metrics and sets out which of the spatial options tested perform best, and also assesses whether the level of additional mitigation required for each spatial option is likely to be deliverable.

Best Performing Options

Overall, the Best Performing options were Options 1 (Densification) and 7 (Integrating homes and jobs).

Option 1 Densification performs best consistently over all transport metrics with the highest non-car mode share together with the lowest distance travelled, time travelled and delay. The projected mode share of 57.6% by non-car modes suggests that the level of additional mitigation for this option would be reasonable and in keeping with the scale of development assumed, and therefore is likely to be deliverable.

Option 7 Integrating homes and jobs was shown to have a non-car mode share of just 45.9% and therefore this option was in the medium performing category for mode share. This option also performs very well in terms of highway model outputs, with the highway metrics showing low levels of additional travel distance, time and delay, meaning that the co-location of homes and jobs leads to reduced impacts on the highway network compared to many of the other options tested. The results indicate that this option would require more mitigation than option 1 Densification. The focus of this mitigation should be on increasing the share of trips made by non-car modes as it would be necessary to try and reduce reliance on the car for those trips that are made if this option were taken forward.

In conclusion it is possible to say that both of these options could be made to work if the right package of mitigation were brought forward and the level of mitigation likely to be required would be in keeping with the scale of the development proposed.

Medium Performing Options

Of the remaining options all but one indicated that they would generate lower non-car mode shares than Option 1 Densification. However, when looking at the proportion of this mode share that utilises active modes the following Options 2 Edge - non-GB, Option 3 Edge – GB, Option 4 New Settlements, Option 6 PT Corridors, Option 8 Expanded Growth Areas were all shown to be higher than the Baseline. All of these options were shown to generate more distance travelled, travel time and delay than the best performing options above, but it is still considered possible to mitigate the impact of these spatial options on the transport networks. The level of mitigation required for these options, whilst greater

than for either of the best performing options, is still considered to be in keeping with the scale of development within these options and, therefore, should be deliverable.

Poorly Performing Options

The only option shown to generate a lower active travel mode share than the Baseline is Option 5 Villages. This option was shown to have the largest car mode share of all the options tested and was also shown to lead to the largest increase in vehicle kilometres, travel time and delay. For this option it would be possible to mitigate the impact seen, but it is likely that the scale of mitigation required could be out of keeping with the size of the development sites within this option and therefore this might render the development sites unviable.

6 Spatial Option Sensitivity Tests

The results of this report will be used to help inform the selection of a preferred option (which could be an amalgam of one or more options tested in this report), with specific site allocations, that will be taken forward in the Local Plan.

As set out above, the tests set out in Chapter 4 of this report include certain assumptions, including around growth levels, transport schemes, and commuting patterns. Therefore a range of sensitivity tests are planned in order to understand the sensitivity of the transport networks in the Greater Cambridge area to the core test assumptions. These tests will help nuance and refine understanding of which options perform better or worse in transport terms.

The results of these sensitivity tests will be reported in the next iteration of this Transport Evidence Report.

The list of sensitivity tests is set out in Table 10 below:

Table 10 List of Sensitivity Tests

Test	Description	Growth Scenario	Commuting assumption
1a	Full build out of Spatial Option 2 Edge non-GB	Maximum	Fixed In-commuting
1b	Full build out of Spatial Option 4 New Settlements	Maximum	Fixed In commuting
2a	Spatial Option 2 Edge non-GB + CAM	Maximum	Fixed In commuting
2b	Spatial Option 2 Edge non-GB + EWR	Maximum	Fixed In commuting
2c	Spatial Option 2 Edge non-GB + CAM & EWR	Maximum	Fixed In commuting
3a	Medium growth Spatial Option 2 Edge non-GB	Medium	EEFM
3b	Medium growth Spatial Option 4. New Settlements	Medium	EEFM
3c	Minimum Growth	Minimum	EEFM
4a	In/Out commuting Spatial Option 2 Edge non-GB	Maximum	EEFM
4b	In/Out commuting Spatial Option 4 New Settlements	Maximum	EEFM
5a	Housing scenario excluding 10% buffer Spatial Option 2 Edge non-GB	Maximum	Fixed In commuting
5b	Housing scenario excluding 10% buffer Spatial Option 4 New Settlements	Maximum	Fixed In commuting

Spatial Options 2 Edge non-Green Belt and Option 4 New Settlements are being used to provide a consistent set of sensitivity tests. Within the analysis of these sensitivity tests, inferences will be made as to the effects of each sensitivity assumption for the other spatial options. Descriptions of the sensitivity tests that are to be undertaken are as follows:

Full Build Out – Sensitivity Tests 1a and 1b

The level of development involved in several of the strategic spatial options is greater than would come forward in the life-time of this local plan (e.g. a number of options include new settlements which take a long time to be built out). This issue is particularly relevant to Options 2 and 4, which is why these options were selected for sensitivity testing. To understand the impact of this development once built out in full, this sensitivity test will assume that all development included in the options is built out by 2041. To be consistent with the tests in Chapter 4 it will retain the Fixed In-commuting approach described at 3.5.2.

CAM and EWR – Sensitivity Tests 2a, 2b and 2c

The list of transport schemes included in the 2041 Baseline did not include either the Cambridge Autonomous Metro (CAM) or East West Rail (EWR) as neither of these schemes are sufficiently well defined. To this end sensitivity tests will be undertaken using the latest publicly available information on these schemes with a view to understanding the impact of CAM and EWR on the performance of the transport networks for each of the strategic spatial options. To be consistent with the tests in Chapter 4 it will retain the Fixed In-commuting approach described at 3.5.2.

Growth levels – Sensitivity Tests 3a, 3b and 3c

As noted in previous chapters, the tests set out in Chapter 4 tested the maximum growth option. The next set of sensitivity tests will look at the impact of the medium and minimum levels of development on the trip making and mode share of the strategic spatial options, so as to provide a comprehensive understanding of growth and spatial options. In line with the commuting assumptions made when identifying these growth options, the level of in-commuting is assumed to revert to that indicated by EEFM (see Greater Cambridge Local Plan Housing & Employment Relationships Report for more detail on commuting assumptions associated with the growth options).

In and out-commuting – Sensitivity Tests 4a and 4b

As set out at 3.5.2, the tests included in Chapter 4 assume a fixed in-commuting approach to ensure that all workers for the additional jobs above the minimum growth option travel from within the Greater Cambridge area. To understand the impact of this assumption on the maximum growth option, sensitivity tests 4a & 4b look at the impact of unconstrained in-commuting.

10% Housing Buffer - Sensitivity Tests 5a and 5b

To address the national planning policy requirement to prepare a flexible local plan which is responsive to rapid change, all the growth level options include a 10% housing buffer on top of the housing growth level identified in the Greater Cambridge Local Plan Housing & Employment Relationships Report. The final sensitivity tests look at the impact of excluding that 10% buffer from the housing numbers. To be consistent with the tests in Chapter 4 these will retain the Fixed In-commuting approach described at 3.5.2.

Final

Greater Cambridge Local Plan strategic
spatial options assessment: Viability
Assessment

Greater Cambridge Shared Planning



November 2020

Quality Assurance

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Limitation

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- Appendix 6 – Commercial appraisals

Non-technical summary

Introduction to evidence base

- ES 1 AspinallVerdi have been appointed by South Cambridgeshire District Council and Cambridge City Council (referred to as GCSP) to provide a viability evidence base for the Greater Cambridge Local Plan.
- ES 2 The purpose of this report is to set out the inputs, assumptions and results of the viability testing of strategic spatial options. The testing does not consider specific sites so we can only provide a broad analysis of viability through making assumptions about potential infrastructure and abnormal works required to bring the type and quantum of development identified forward.
- ES 3 Market evidence has been used to inform the capital values, rents and yields in the assessment but are subject to change once further details are known about scheme specifics. The viability appraisals assessment assumes that affordable housing will be delivered on site along with a number of other known policy costs.

Understanding the viability testing results

- ES 4 In the testing it is assumed that any surplus generated in the results could fund additional policy costs, (potential policy costs illustrated in Table 5-4) or developer contributions. As more information becomes available on potential sites and planning policies, we will be able to refine our assumptions further and as a consequence the viability conclusions shown here will likely change.

Residential

- ES 5 The residential viability results show that development is viable across all scenarios tested and there are viability surpluses to fund additional planning policies and/or infrastructure. See chapter 6 for a full breakdown of results.
- ES 6 As these appraisals are strategic, we have not been able to include information about site specific constraints i.e. contamination, flood risk, more complex land values etc. We have also not been able to customise our development timings; therefore, for those potential sites that require significant upfront infrastructure to unlock the development, viability is likely to decrease from what is shown in these initial assessments. We understand that in reality some major sites such as new settlements in Great Cambridge have not been able to viably provide full policy contributions in recent years. This is likely due to site specific circumstances. Specifically, they are likely to have front loaded costs such as schools or infrastructure which will have a significant

impact on the finance costs in our cashflow. Once we have better understanding of these costs and the associated timings viability may decrease in later iterations of our testing.

Employment uses

Our results show that all employment uses tested are viable, apart from rural office parks, with differing levels of surplus psm of development. Rural office parks are only marginally unviable, small changes to rents or investment yield would render this scenario viable. See chapter 6 for a full breakdown of results.

1 Introduction

Introduction to evidence base

- 1.1 AspinallVerdi have been appointed by South Cambridgeshire District Council and Cambridge City Council (referred to as GCSP) to provide a viability evidence base for the Greater Cambridge Local Plan.
- 1.2 This report provides a high-level assessment to give an early indication to the GCSP whether the strategic spatial options are viable and also to give an indication of the relative viability of different spatial choices, in terms of their ability to deliver affordable housing and other infrastructure.

Initial findings

- 1.3 Given that the assessment is based on strategic spatial options and not site specific the assessment is high level in nature. At this stage, we can only provide a broad analysis of viability through making assumptions about potential infrastructure and abnormal works required to bring the type and quantum of development identified forward.
- 1.4 Market evidence has been used to inform the capital values, rents and yields in the assessment but are subject to change once further details are known about scheme specifics.
- 1.5 Planning Practice Guidance on viability provides a clear methodology to determine the land value for this type of assessment i.e. Existing Use Value (EUV) plus Premium. The EUV for greenfield sites is relatively straight forward to determine as this is based on agricultural land values. The EUV for brownfield sites is more challenging because we do not know at this stage the nature of the existing uses. Furthermore, site remediation costs for brownfield sites is not possible to determine accurately for the same reason as the EUV. We can only make broad assumptions on the EUV and remediation costs for brownfield sites based on the typical nature of the sites found across the area.
- 1.6 At this stage, we have not tested the viability of other residential uses i.e. build to rent, older persons accommodation, student accommodation etc. as this has not been captured in the strategic spatial options document produced by the GCSP. These will be assessed at the next stage of the Local Plan process when there is a greater understanding of emerging planning policy and allocations.

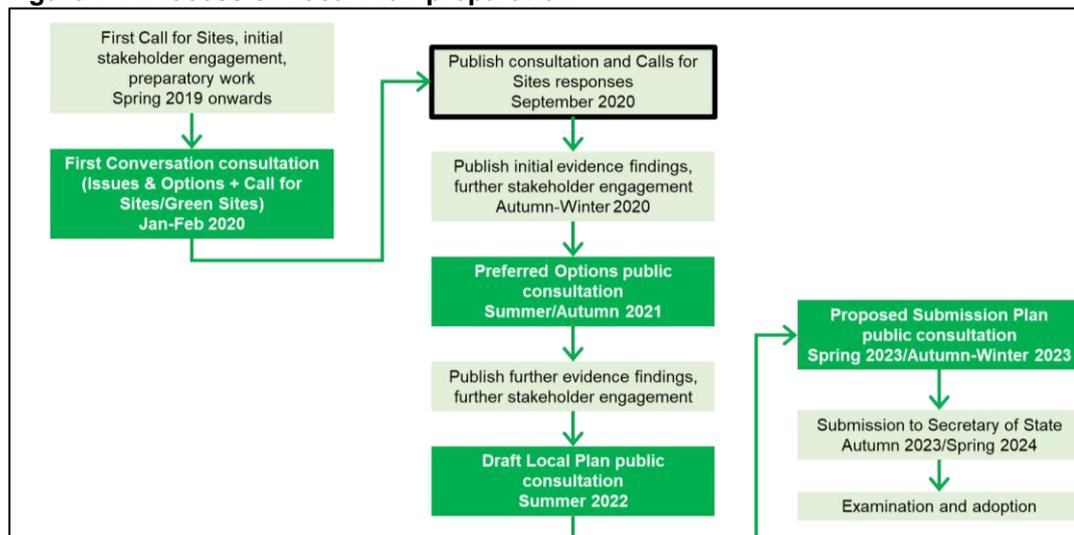
Assessment of strategic (non-site specific) spatial options

- 1.7 The GCSP completed a public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and

eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.

- 1.8 The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.
- 1.9 The initial evidence findings will be reported to the Joint Local Plan Advisory Group autumn 2020, and help to inform further engagement with stakeholders.
- 1.10 Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out in Figure 1-1.

Figure 1-1 Process of Local Plan preparation



Source: GCSP

The strategic options

- 1.11 The three growth level options tested through this report are:
 1. Minimum – Standard Method homes-led
 2. Medium – central scenario employment-led
 3. Maximum – higher employment-led
- 1.12 The spatial scenarios tested through this report are:
 1. Densification of existing urban areas
 2. Edge of Cambridge – outside the Green Belt
 3. Edge of Cambridge – Green Belt
 4. Dispersal – new settlements

5. Dispersal – villages
6. Public transport corridors
7. Supporting a high-tech corridor by integrating homes and jobs
8. Expanding a growth area around transport nodes

Approach to study

1.13 The viability assessment is based on the 'viability standards' outlined in the revised National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG), the Local Housing Delivery Group publication 'Viability Testing Local Plans', 2012; the Royal Institution of Chartered Surveyors (RICS) 'Financial Viability in Planning 1st Edition', 2012.; and the RICS Financial viability in planning: conduct and reporting. 1st Edition, May 2019.

1.14 The remainder of this report is structured as follows:

Section 2 – National Planning Policy Context This section sets out the statutory requirements for the Local Plan and developer contributions viability including the NPPF, and PPG.

Section 3 – Methodology This section sets out our methodology to establish the viability of the various land uses and development typologies used in the testing. We also set out the professional guidance used when undertaking the economic viability appraisals and the approach to determine land value

Section 4 – Developing viability typologies This section sets out each of the scenarios that we have used in the viability testing and how they have been devised from GCSP strategic spatial options.

Section 5 – Appraisal inputs & assumptions This section sets out our viability inputs and assumptions that have been used in the development appraisals. Also, the assessment of greenfield and brownfield land values that have been used in the viability testing.

Section 6 – Viability testing results This section sets out our viability testing results across all the scenarios.

Declaration

1.15 In accordance with the RICS Financial viability in planning: conduct and reporting 1st edition, May 2019 we declare the following:

Objectivity, impartiality and reasonableness

- 1.16 Our financial viability assessment has been undertaken with objectivity, impartiality and without interference. In doing so we have made reference to all appropriate sources of information to form our conclusions and recommendations.

Conflict of interests

- 1.17 We have undertaken a conflict of interest check in relation to this instruction and we are not aware of any deemed conflicts in relation to this instruction. We are not acting on behalf of any party in relation to scheme specific viability testing for South Cambridgeshire District Council and Cambridge City Council.

Not formal valuations

- 1.18 This report and the accompanying appraisals have been prepared in line with RICS valuation guidance. However, it is first and foremost a supporting document to support options for the delivery of the draft Local Plan. The appraisals are not a formal 'Red Book' (RICS Valuation, Global Standards 2017) valuation and should not be relied upon as such.

Novel Coronavirus (COVID-19)

- 1.19 The outbreak of the Novel Coronavirus (COVID-19), declared by the World Health Organisation as a "Global Pandemic" on 11 March 2020, has impacted global financial markets. Travel restrictions have been implemented by many countries.
- 1.20 Market activity is being impacted in many sectors. As at the date of the report, AspinallVerdi consider that we can attach less weight to previous market evidence for comparison purposes, to inform opinions of value. Indeed, the current response to COVID-19 means that we are faced with an unprecedented set of circumstances on which to base a judgement.
- 1.21 Our appraisals are therefore reported on the basis of "material valuation uncertainty" as per Valuation Practice Statement 3 and Valuation Practice Guidance Applications 10 of the RICS Red Book Global. Consequently, less certainty – and a higher degree of caution – should be attached to our appraisals than would normally be the case. Given the unknown future impact that COVID-19 might have on the real estate market, we recommend that the GCSP keep the appraisals under frequent review.

MHCLG – planning system reform consultations

- 1.22 On the 06 August 2020, the government opened two consultations where they have suggested major changes to the UK planning system in the coming years. The two consultations are due to close in October and we currently do not know when any changes are likely to be implemented.
- 1.23 The first proposes changes to our current system to speed up housing delivery in the short term. The second looks longer term and proposes a complete overhaul to the existing system. We summarise both these White Paper documents as follows:

Changes to the current planning system consultation¹

- 1.24 The government consultation document outlines a number of changes to the existing planning system. The four main points are listed below.
- changes to the standard method for assessing local housing need.
 - securing of “First Homes” through developer contributions in the short term until the transition to a new system.
 - supporting small and medium-sized builders by temporarily lifting the small sites threshold below which developers do not need to contribute to affordable housing.
 - extending the current Permission in Principle to major development.
- 1.25 The potential change with the greatest impact on this viability study would be the increase in the threshold for small sites which need to contribute towards affordable housing. Generally, the changes proposed in the government consultation document are likely to improve the viability of development nationally.

Planning for the future consultation²

- 1.26 The government consultation document outlines considerable long-term changes to the UK planning system. The outcome of this consultation will likely mean changes to primary legislation rather than just the NPPF.
- 1.27 A number of significant changes are proposed not least including the way local authorities’ evidence and create local plans. Amongst other things the way viability is considered in the planning system will be transformed with proposals including the removal of S106 agreements and CIL. These would be replaced with a single consolidated ‘Infrastructure Levy’ which would include all planning gain developer contributions – including affordable housing.

¹ MHCLG, Changes to the current planning system consultation, August 2020

² MHCLG, Planning for the Future – White Paper, August 2020

- 1.28 The changes proposed in the 'Planning for the Future' consultation could have a significant impact on the GCSP and this viability assessment. We don't know what plans may look like under the new system but viability assessments such as this will likely change considerably.

2 National planning policy context

- 2.1 Our economic viability appraisal has been carried out having regard to the NPPF and PPG. The NPPF and PPG outlines policy/guidance concerning viability assessments of Local Plans and determination of planning applications. We set out the pertinent points of these documents in relation to this study:

National Planning Policy Framework (NPPF) (February 2019)

- 2.2 The NPPF sets out the Government's planning policies for England and how these are expected to be applied. It was first published on 27 March 2012 and the Ministry of Housing, Communities & Local Government (MHCLG) issued a revised version in July 2018 which was updated again in February 2019 to reflect the introduction of the standard method for assessing local housing need.

Plans should be deliverable

- 2.3 The NPPF requires local plans to be deliverable, paragraph 16 of the revised NPPF states: *'Plans should:*

Plans should:

- a) be prepared with the objective of contributing to the achievement of sustainable development;*
- b) be prepared positively, in a way that is aspirational but deliverable;*
- c) be shaped by early, proportionate and effective engagement between planmakers and communities, local organisations, businesses, infrastructure providers and operators and statutory consultees;*
- d) contain policies that are clearly written and unambiguous, so it is evident how a decision maker should react to development proposals;*
- e) be accessible through the use of digital tools to assist public involvement and policy presentation; and*
- f) serve a clear purpose, avoiding unnecessary duplication of policies that apply to a particular area (including policies in this Framework, where relevant).'³*

³ MHCLG, February 2019, National Planning Policy Framework, paragraph 16
13

Planning contribution/obligations

- 2.4 The setting of development contributions should not place the delivery of the plan at risk:
- 'Plans should set out the contributions expected from development. This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure). Such policies should not undermine the deliverability of the plan.'⁴*
- 2.5 The NPPF states that planning obligations must only be sought where they meet all of the following tests:
- 'a) necessary to make the development acceptable in planning terms;*
- b) directly related to the development; and*
- c) fairly and reasonably related in scale and kind to the development.'*⁵

Affordable housing

- 2.6 The NPPF sets a 10 units threshold for seeking affordable housing contributions, except in designated rural areas:
- 'Provision of affordable housing should not be sought for residential developments that are not major developments, other than in designated rural areas (where policies may set out a lower threshold of 5 units or fewer).'*⁶
- 2.7 The NPPF defines major development as follows:
- 'For housing, development where 10 or more homes will be provided, or the site has an area of 0.5 hectares or more. For non-residential development it means additional floorspace of 1,000m² or more, or a site of 1 hectare or more, or as otherwise provided in the Town and Country Planning (Development Management Procedure) (England) Order 2015.'*⁷
- 2.8 Where affordable housing is sought, local planning authorities should seek at least 10% provision where there is identified need:
- 'Where major development involving the provision of housing is proposed, planning policies and decisions should expect at least 10% of the homes to be available for affordable home ownership, unless this would exceed the level of affordable housing required in the area, or significantly prejudice the ability to meet the identified affordable housing needs of specific groups.'*

⁴ Ibid, paragraph 34

⁵ Ibid, paragraph 56

⁶ Ibid, paragraph 63

⁷ Ibid, page 68

Exemptions to this 10% requirement should also be made where the site or proposed development:

- a) provides solely for Build to Rent homes;*
- b) provides specialist accommodation for a group of people with specific needs (such as purpose-built accommodation for the elderly or students);*
- c) is proposed to be developed by people who wish to build or commission their own homes; or*
- d) is exclusively for affordable housing, an entry-level exception site or a rural exception site.⁸*

Planning Practice Guidance (PPG)

2.9 Alongside the NPPF, updates to the PPG 'Viability and plan-making' were also applied. The guidance is now much more prescriptive on the methodology for viability assessments for planning purposes both at plan making and application stage.

Viability to be resolved at planning making stage

2.10 The PPG builds on the NPPF in that viability matters should be resolved at the plan making stage rather than decision-making stage, thus placing further weight on viability assessments early in the process:

'Policy requirements, particularly for affordable housing, should be set at a level that takes account of affordable housing and infrastructure needs and allows for the planned types of sites and development to be deliverable, without the need for further viability assessment at the decision making stage.'⁹

Setting of policy requirements for contributions

2.11 The PPG explains that Plans should set out the contributions expected from development. The contributions should *'include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure).'*¹⁰ In addition to those stated by the PPG contributions may be sought sports, open space, play and community facilities.

2.12 When setting policies these will need to be informed through evidence based on the infrastructure and affordable housing need for the area. There is also a need for clarity of policy requirements so that these can be reflected in the land value:

⁸ Ibid, paragraph 64

⁹ MHCLG, 09 May 2019, Planning Practice Guidance, Paragraph: 002 Reference ID: 10-002-20190509

¹⁰ Ibid, Paragraph: 001 Reference ID: 10-001-20190509

*'These policy requirements should be informed by evidence of infrastructure and affordable housing need, and a proportionate assessment of viability that takes into account all relevant policies, and local and national standards, including the cost implications of the Community Infrastructure Levy (CIL) and section 106. Policy requirements should be clear so that they can be accurately accounted for in the price paid for land. To provide this certainty, affordable housing requirements should be expressed as a single figure rather than a range. Different requirements may be set for different types or location of site or types of development.'*¹¹

- 2.13 In setting planning policy requirements local authorities need to have regard to the impact these have on development viability: *'The role for viability assessment is primarily at the plan making stage. Viability assessment should not compromise sustainable development but should be used to ensure that policies are realistic, and that the total cumulative cost of all relevant policies will not undermine deliverability of the plan.*¹²

- 2.14 The PPG also places an emphasis on addressing education requirements when considering viability at plan-making stage:

'When considering viability it is recommended that plan makers and local authorities for education work collaboratively to identify which schools are likely to expand, and where new schools will be needed as a result of planned growth.

*It is important that costs and land requirements for education provision are known to inform site typologies and site-specific viability assessments, with an initial assumption that development will provide both funding for construction and land for new schools required onsite, commensurate with the level of education need generated by the development.'*¹³

- 2.15 Ultimately the PPG is clear that total cumulative costs of policies should not render development unviable:

*'The total cumulative cost of all relevant policies should not be of a scale that will make development unviable. Local planning authorities should set out future spending priorities for developer contributions in an Infrastructure Funding Statement.'*¹⁴

¹¹Ibid, Paragraph: 001 Reference ID: 10-001-20190509

¹² Ibid, Paragraph: 002 Reference ID: 10-002-20180724

¹³Ibid, Paragraph: 029 Reference ID: 10-029-20190509

¹⁴ Ibid

3 Methodology

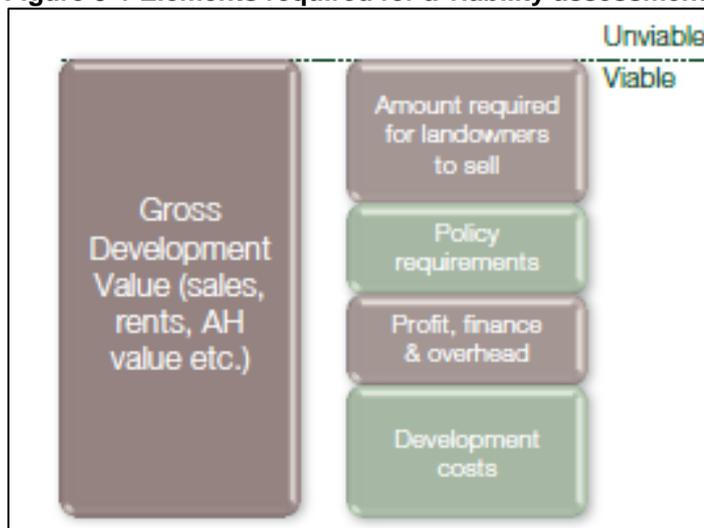
3.1 In this section of the report, we set out our methodology to establish the viability of the various land uses and development typologies to use in the testing. We also set out the professional guidance that we have had regard to in undertaking the economic viability appraisals.

Viability modelling best practice

3.2 The general principle is that affordable housing, and other planning obligations will be levied on the increase in land value resulting from the grant of planning permission. However, there are fundamental differences between land economics and every development scheme is different. Therefore, in order to derive planning contributions and understand the 'appropriate balance,' it is important to understand the micro-economic principles which underpin the viability analysis.

3.3 The uplift in value is calculated using a Residual Land Value (RLV) appraisal Figure 3-1 illustrates the principles of a RLV appraisal.

Figure 3-1 Elements required for a viability assessment



Source Harman Report¹⁵ (June 2012)

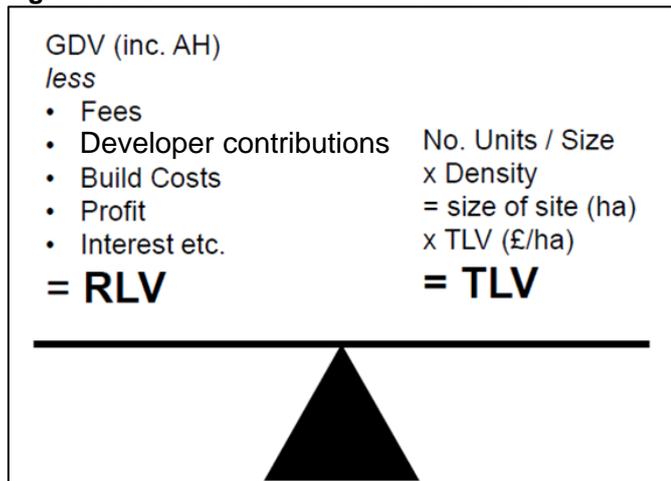
3.4 Our specific appraisals for each of the land uses and typologies are set out in the relevant section below.

3.5 In order to advise on the ability of the proposed uses/scheme to support affordable housing, other policy obligations we have benchmarked the residual land values from the viability analysis against existing or alternative land use relevant to the particular typology – the Threshold Land Value (TLV).

¹⁵ Local Housing Delivery Group, Local Government Association / Home Builders Federation / NHBC, 20 June 2012, Viability Testing Local Plans, Advice for planning practitioners, Edition 1 (the 'Harman' report) page 30

- 3.6 A scheme is viable if the total of all the costs of development including land acquisition, planning obligations, and profit are less than the Gross Development Value (GDV) of the scheme. Conversely, if the GDV is less than the total costs of development (including land, S106s, and profit) the scheme will be unviable.
- 3.7 If the balance is positive, then the policy is viable. If the balance is negative, then the policy is not viable and developer contributions and affordable housing rates should be reviewed.
- 3.8 This approach is summarised on the diagram in Figure 3-2.

Figure 3-2 Balance between RLV and TLV



Source: AspinallVerdi

What to test?

- 3.9 It is not necessary to test every proposed development site for the viability testing at Local Plan making stage. Testing can be on the ‘type of sites’ which are reflective of the development proposed over the plan period – this is known as testing of ‘typologies.’ Where there are key sites (strategic sites) that are fundamental to the delivery of the plan these need to be considered separately. The PPG explains this as follows:

‘Assessing the viability of plans does not require individual testing of every site or assurance that individual sites are viable. Plan makers can use site typologies to determine viability at the plan making stage. Assessment of samples of sites may be helpful to support evidence. In some circumstances a more detailed assessment may be necessary for particular areas or key sites on which the delivery of the plan relies.’¹⁶

¹⁶ MHCLG, 05 May 2019, PPG, Paragraph: 004 Reference ID: 10-004-20190509

- 3.10 Once the spatial options have been developed further and develop into sites than engagement with the landowners/promoters will need to be undertaken to understand site constraints and opportunities.

What is meant by a typology approach to viability?

- 3.11 Typologies for the viability testing are to be based on the proposed development in the plan to ensure the testing represents the type of development coming forward. In doing so it is appropriate to consider '*shared characteristics such as location, whether brownfield or greenfield, size of site and current and proposed use or type of development.*'¹⁷
- 3.12 Property prices are now a commonly used method to vary typologies – such an approach is explained in the Harman report:

'Account should also be taken of significant variations in strength of the market across a local authority area, reflected by sales values and sales rate. If a significant proportion of sites within a typology fall into a stronger or weaker market area then additional typologies should be considered.

*There is a balance to be struck here between representation of the main 'viability characteristics' of the land supply pipeline and limiting the number of typologies to a manageable number, for clarity of analysis.'*¹⁸

Development appraisal inputs

- 3.13 In devising the inputs to use in the appraisals, it is acceptable to use standardised inputs, rather than relying on site specifics: '*All viability assessments, including any undertaken at the plan-making stage, should reflect the recommended approach in national planning guidance, including standardised inputs, and should be made publicly available.*'¹⁹

Gross Development Value

- 3.14 The Gross Development Value is the cumulative value of the completed development. For plan wide viability assessments '*...average figures can be used, with adjustment to take into account land use, form, scale, location, rents and yields, disregarding outliers in the data.*'²⁰

Development costs

¹⁷ Ibid, Paragraph: 004 Reference ID: 10-003-20180724

¹⁸ Harman, June 2012, Viability Testing of Local Plans: Advice for planning practitioners, page 42

¹⁹ MHCLG, National Planning Policy Framework (NPPF), February 2019. Paragraph 57

²⁰ Ibid, Paragraph: 011 Reference ID: 10-011-20180724

- 3.15 The PPG explains, as with values, cost should also reflect local market conditions, it also places an emphasis to identify development costs at plan-making stage: Local market development costs could relate to dealing with local ground conditions, environmental mitigation, flood risk, design requirements, sustainability etc. The PPG states ‘As far as possible, costs should be identified at the plan making stage. Plan makers should identify where costs are unknown and identify where further viability assessment may support a planning application.’²¹ This element of the work will be undertaken in more detail in later iterations of the viability assessment when draft policies and proposed site allocations are available.

Benchmark (threshold) land value

- 3.16 Benchmark land value, also referred to as threshold land value, has been subject to much debate in recent years due to trying to establish the most appropriate method to determine it for planning purposes. The two most common approaches have been Existing Use plus and Market Value adjusted for policy. The latter, although a more market facing approach, has faced criticism²² because practitioners have not been adjusting PPG values fully for policy. The PPG now provides a clear single method (Existing Use plus premium) in determining land value:

*‘To define land value for any viability assessment, a benchmark land value should be established on the basis of the **existing use value (EUV)** of the land, **plus a premium** for the landowner. The premium for the landowner should reflect the minimum return at which it is considered a reasonable landowner would be willing to sell their land. The premium should provide a reasonable incentive, in comparison with other options available, for the landowner to sell land for development while allowing a sufficient contribution to fully comply with policy requirements. Landowners and site purchasers should consider policy requirements when agreeing land transactions. This approach is often called ‘existing use value plus’ (EUV+)’²³*

- 3.17 The PPG also sets out the factors that should be considered when establishing the land value:
- *‘be based upon existing use value*
 - *allow for a premium to landowners (including equity resulting from those building their own homes)*
 - *reflect the implications of abnormal costs; site-specific infrastructure costs; and professional site fees’*

*Viability assessments should be undertaken using benchmark land values derived in accordance with this guidance. **Existing use value should be informed by market evidence of current uses, costs and values. Market evidence can also be used as a cross-check of benchmark***

²¹ MHCLG, 05 May 2019, PPG, Paragraph 014 Reference ID: 10-014-20190509

²² Sayce, S, et al, January 2017, Viability and the planning system: the relationship between economic viability testing, land values and affordable housing in London

²³ MHCLG, 05 May 2019, PPG, Paragraph: 013 Reference ID: 10-013-20190509

land value but should not be used in place of benchmark land value. There may be a divergence between benchmark land values and market evidence; and plan makers should be aware that this could be due to different assumptions and methodologies used by individual developers, site promoters and landowners.

This evidence should be based on developments which are fully compliant with emerging or up to date plan policies, including affordable housing requirements at the relevant levels set out in the plan. Where this evidence is not available plan makers and applicants should identify and evidence any adjustments to reflect the cost of policy compliance. This is so that historic benchmark land values of non-policy compliant developments are not used to inflate values over time.

In plan making, the landowner premium should be tested and balanced against emerging policies. In decision making, the cost implications of all relevant policy requirements, including planning obligations and, where relevant, any Community Infrastructure Levy (CIL) charge should be taken into account.²⁴

3.18 Despite the clarity the PPG brings, there is still uncertainty on how the premium is calculated. This was highlighted in the research undertaken by Sarah Sayce: *‘Overall, the ‘EUV plus’ approach was favoured by the majority of respondents, despite the recognition that **the premium element can be difficult to assess in some circumstances.***²⁵

3.19 The PPG explains *‘The premium should provide a reasonable incentive for a land owner to bring forward land for development while allowing a sufficient contribution to fully comply with policy requirements.*

*Plan makers should establish a reasonable premium to the landowner for the purpose of assessing the viability of their plan. This will be an iterative process informed by professional judgement and must be based upon the best available evidence informed by cross sector collaboration.*²⁶

3.20 In helping to inform the professional judgement, a balance needs to be struck between the competing interests (developers, landowners and the aims of the planning) *‘to secure maximum benefits in the public interest through the granting of planning permission.*²⁷

3.21 In considering suitable premiums to apply we are mindful of the following:

²⁴ MHCLG, 09 May 2019, PPG, Paragraph: 014 Reference ID: 10-014-20190509

²⁵ Sayce, S, et al, January 2017, viability and the planning system: the relationship between economic viability testing, land values and affordable housing in London, page 6

²⁶ MHCLG, 09 May 2019, PPG, Paragraph: 016 Reference ID: 10-016-20190509

²⁷ MHCLG, 24 July 2018, PPG, 3.21 Paragraph: 010 Reference ID: 10-010-20180724

- **The Harman Report** ²⁸ - was published in response to the introduction of viability becoming more prominent in the planning system post the introduction of the NPPF. Although the Harman Report pre-dates the current iteration of the PPG on viability it does recommend the EUV plus approach to determine the land value for planning purposes. The Harman report also advocates that when assessing an appropriate Benchmark Land Value, consideration should be given to *'the fact that future plan policy requirements will have an impact on land values and owners' expectations.'* ²⁹ Harman, does acknowledge that reference to market values will provide a useful 'sense check' on the Benchmark Land Values that are being used in the appraisal model; however, *'it is not recommended that these are used as the basis for input into a model.'* ³⁰ It also acknowledges that for large greenfield sites, *'land owners are rarely forced or distressed sellers, and generally take a much longer term view over the merits or otherwise of disposing of their asset.'* ³¹ It refers to these 'prospective sellers' as ***'potentially making a once in a lifetime decision over whether to sell an asset that may have been in the family, trust or institution's ownership for many generations.'*** ³² In these circumstances, Harman states that for these greenfield sites that ***'the uplift to current use value sought by the landowner will invariably be significantly higher than in an urban context and requires very careful consideration.'*** ³³
- **HCA Area Wide Viability Model** - although now a dated document, the HCA Area Wide Viability Model (Annex 1 Transparent Viability Assumptions) provides guidance on the size of the premium. The guidance states that *'Benchmarks and evidence from planning appeals tend to be in a range of 10% to 30% above EUV in urban areas. For greenfield land, benchmarks tend to be in a range of 10 to 20 times agricultural value'*. ³⁴
- **Inspector's Post-Hearing Letter to North Essex Authorities** – the Inspector's letter is in relation to, amongst other things, the viability evidence of three proposed garden communities in North Essex. The three Garden Communities would provide up to 43,000 dwellings in total. The majority of the land for the Garden Communities is in agricultural use, and the Inspector recognised that the EUV for this use would be around £10,000 per gross acre. In this case, the Inspector was of the opinion that around a **x10 multiple** (£100,000 per gross acre) would provide sufficient incentive for a landowner to sell. But given *'the necessarily substantial requirements of the Plan's policies'* a price *'below £100,000/acre could be capable of providing a competitive return to a willing landowner'*. ³⁵

²⁸ Local Housing Delivery Group Chaired by Sir John Harman, 20 June 2012, Viability Testing Local Plans, Advice for planning practitioners

²⁹ Ibid, page 29

³⁰ Ibid

³¹ Ibid, page 30

³² Ibid

³³ Ibid

³⁴ HCA, August 2010, Area Wide Viability Model (Annex 1 Transparent Viability Assumptions)

³⁵ Planning Inspectorate, 15 May 2020, Examination of the Shared Strategic Section 1 Plan - North Essex Authorities, Paragraph 204

The Inspector, however, judged that *'it is extremely doubtful that, for the proposed GCs, a land price below £50,000/acre – half the figure that appears likely to reflect current market expectations – would provide a sufficient incentive to a landowner. The margin of viability is therefore likely to lie somewhere between a price of £50,000 and £100,000 per acre.'*³⁶

Conclusion on approach to land value

3.22 Current guidance is clear that the land value assessment needs to be based on Existing Use plus Premium and not a Market Value approach. Although the assessment of the Existing Use can be informed by comparable evidence the uncertainty lies in how the premium is calculated. Whatever is the resulting land value (i.e. Existing Use plus Premium) the PPG is clear that this must reflect the cost of complying with policies: *'the total cost of all relevant policy requirements including contributions towards affordable housing and infrastructure, Community Infrastructure Levy charges, and any other relevant policies or standards. These costs should be taken into account when defining benchmark land value.'*³⁷ Furthermore, there is a need to ensure that the maximum benefits in the public interested are secured once any future granting of planning permission is made.

Viability modelling approach

3.23 We have undertaken viability testing using a bespoke Microsoft Excel model. The model calculates the Residual Land Value (RLV) for each scenario with results displayed in a series of tables.

3.24 As mentioned above, a scheme is viable if the RLV is positive for a given level of profit. We describe this situation herein as being 'fundamentally' viable. This does not mean that a scheme will come forward for development as the RLV for a particular scheme has to exceed the landowner's TLV. In Development Management terms every scheme will have a different RLV and every landowner's motivations will be different (benchmark land value). For Plan Making purposes it is important to benchmark the RLVs from the viability analysis against existing or alternative land use relevant to the particular typology.

How to interpret the viability appraisals

3.25 The results of the appraisals should be interpreted as follows:

- If the 'balance' is positive, then the policy is viable. We describe this as being 'viable for plan-making purposes herein'.

³⁶Ibid, Paragraph 205

³⁷ MHCLG, 24 July 2018, PPG, Paragraph: 012 Reference ID: 10-012-20180724

- If the 'balance' is negative, then the policy is not viable for plan-making purposes and the developer contributions and/or Affordable Housing targets should be reviewed.

3.26 This is illustrated in Table 3-1 of our hypothetical appraisals. In this case the RLV at £12.151m is £8.919m higher than the assumed threshold land value of £3.232m meaning the balance is positive.

Table 3-1 Example appraisal viability summary

RESIDUAL LAND VALUE						
Residual Land Value (gross)						13,954,832
SDLT			13,954,832	@	5.0%	(687,242)
Acquisition Agent fees			13,954,832	@	1.0%	(139,548)
Acquisition Legal fees			13,954,832	@	0.5%	(69,774)
Interest on Land			13,954,832	@	6.50%	(907,064)
Residual Land Value						12,151,204
<i>RLV analysis:</i>	<i>41,472</i>	<i>£ per plot</i>	<i>1,327,094</i>	<i>£ per ha</i>	<i>537,068</i>	<i>£ per acre</i>
THRESHOLD LAND VALUE						
Residential Density			32.0	dph		
Site Area (Resi)			9.16	ha	22.63	acres
<i>Density analysis:</i>			2,764	sqm/ha	12,040	sqft/ac
Threshold Land Value	11,031	£ per plot	353,000	£ per ha	142,857	£ per acre
Gross to net land area	70%					
						3,232,153
BALANCE						
Surplus/(Deficit)			974,094	£ per ha	394,211	£ per acre
						8,919,051

Source: AspinallVerdi (August 2020)

3.27 In addition to the above, we have also prepared a series of sensitivity scenarios for each of the typologies. Examples of the sensitivity results are set out in Table 3-2 and Table 3-3. This is to assist in the analysis of the viability (and particularly the viability buffer).

3.28 In each sensitivity table there are two variables, in the two examples in Table 3-2 and Table 3-3, the variable across the top is the percentage of affordable housing. Down the left hand side, we have assumed differing levels of Section 106 (£per dwelling) in the first sensitivity output and changes in GDV in the second sensitivity output. Each coloured cell represents the scheme surplus/deficit for a given sensitivity scenario. In each sensitivity testing cell table, you will find the corresponding scheme surplus/deficit from our appraisal, which we have circled in red in for reference.

- The example in Table 3-2 assumes baseline position of 25% affordable housing and £0 S106 per dwelling - this produces a surplus of £2.74m. This same surplus is circled in the sensitivity results in Table 3-3, because they represent the same assumption in the appraisal. We can see through the sensitivity testing in Table 3-2 that when the S106 per dwelling increases surplus (scheme viability decreases). In the second scenario (Table 3-3) when GDV decreases, as to be expected, scheme viability decreases and the surplus available for affordable housing decreases.

Table 3-2 Example 1 of development appraisal sensitivity tables

Balance (RLV - TLV)	2,741,046	AH - % on site						
		10%	15%	20%	25%	30%	35%	40%
-		4,583,360	3,969,255	3,355,151	2,741,046	2,126,854	1,512,355	897,856
1,000		4,340,819	3,726,343	3,111,844	2,497,345	1,882,846	1,267,896	652,888
2,000		4,096,834	3,482,335	2,867,437	2,252,428	1,637,421	1,021,983	406,350
3,000		3,851,971	3,236,963	2,621,915	2,006,282	1,390,649	774,597	158,223
4,000		3,606,214	2,990,581	2,374,948	1,758,887	1,142,512	525,722	(91,511)
Site Specific S106	5,000	3,359,248	2,743,176	2,126,802	1,510,227	892,994	275,339	(342,882)
	6,000	3,111,091	2,494,717	1,877,499	1,260,266	642,077	23,430	(596,021)
	7,000	2,862,004	2,244,771	1,627,024	1,008,814	389,743	(230,023)	(850,834)
	8,000	2,611,971	1,993,761	1,375,360	756,055	135,975	(485,040)	(1,107,340)
	9,000	2,360,499	1,741,673	1,122,368	501,972	(119,246)	(741,639)	(1,365,560)
	10,000	2,107,986	1,488,490	867,970	246,548	(375,937)	(999,838)	(1,625,512)
	11,000	1,854,488	1,233,968	612,342	(10,235)	(634,117)	(1,259,658)	(1,887,217)
	12,000	1,599,966	978,136	355,466	(268,395)	(893,804)	(1,521,116)	(2,150,694)
	13,000	1,343,930	721,168	97,326	(527,949)	(1,155,016)	(1,784,233)	(2,415,965)
	14,000	1,086,869	463,048	(162,095)	(788,916)	(1,417,773)	(2,049,029)	(2,683,260)
	15,000	828,769	203,759	(422,827)	(1,051,312)	(1,682,093)	(2,315,522)	(2,952,409)
	16,000	569,604	(56,973)	(685,123)	(1,315,206)	(1,947,995)	(2,583,734)	(3,223,425)
	17,000	308,881	(319,023)	(948,745)	(1,580,646)	(2,215,499)	(2,853,683)	(3,496,329)
	18,000	47,077	(582,284)	(1,213,709)	(1,847,562)	(2,484,625)	(3,125,391)	(3,771,141)
	19,000	(215,823)	(846,773)	(1,480,035)	(2,115,973)	(2,755,391)	(3,398,900)	(4,080,352)
	20,000	(479,837)	(1,112,508)	(1,747,739)	(2,385,899)	(3,027,817)	(3,674,343)	(4,404,753)

Source: AspinallVerdi (August 2020)

Table 3-3 Example 2 of development appraisal sensitivity tables

Balance (RLV - TLV)	2,741,046	AH - % on site						
		10%	15%	20%	25%	30%	35%	40%
80%		(3,902,766)	(4,074,394)	(4,246,135)	(4,417,876)	(4,590,020)	(4,762,188)	(4,934,810)
85%		(1,742,486)	(2,007,758)	(2,273,223)	(2,538,688)	(2,804,233)	(3,070,087)	(3,335,941)
90%		380,241	(1,864)	(384,017)	(766,170)	(1,148,322)	(1,530,868)	(1,913,419)
95%		2,486,582	1,988,343	1,490,103	994,964	493,412	(5,211)	(503,834)
% of GDV	100%	4,583,360	3,969,255	3,355,151	2,741,046	2,126,854	1,512,355	897,856
	105%	6,673,905	5,944,283	5,214,540	4,484,574	3,754,608	3,024,642	2,294,676
	110%	8,760,071	7,914,863	7,069,655	6,224,448	5,378,896	4,533,311	3,687,726
	115%	10,843,260	9,882,632	8,922,005	7,961,378	7,000,448	6,039,439	5,078,431
	120%	12,924,289	11,848,362	10,772,435	9,696,184	8,619,903	7,543,621	6,467,340

Source: AspinallVerdi (August 2020)

3.29 As you can see from the above, the typologies are very sensitive to small changes to key inputs and particularly affordable housing, benchmark land value and profit.

Stakeholder engagement

3.30 As this is only a high-level strategic options assessment, we have not undertaken stakeholder engagement outside of GCSP. We will undertake detailed stakeholder engagement, to include telephone calls and a stakeholder workshop, as part of the next stage of our work. At this strategic stage we do not know the specific people we will speak to, but we would hope to engage with:

- Local, regional and national developers
- Landowners
- Agents (commercial, land and residential)
- Planning agents
- Stakeholders
- Internal representatives at the Councils

4 Developing viability scenarios

4.1 We now set out the scenarios to use in our viability testing. The scenarios are based on the three growth level options and the eight spatial scenarios identified by GCSP in Chapter 1.

Residential typologies

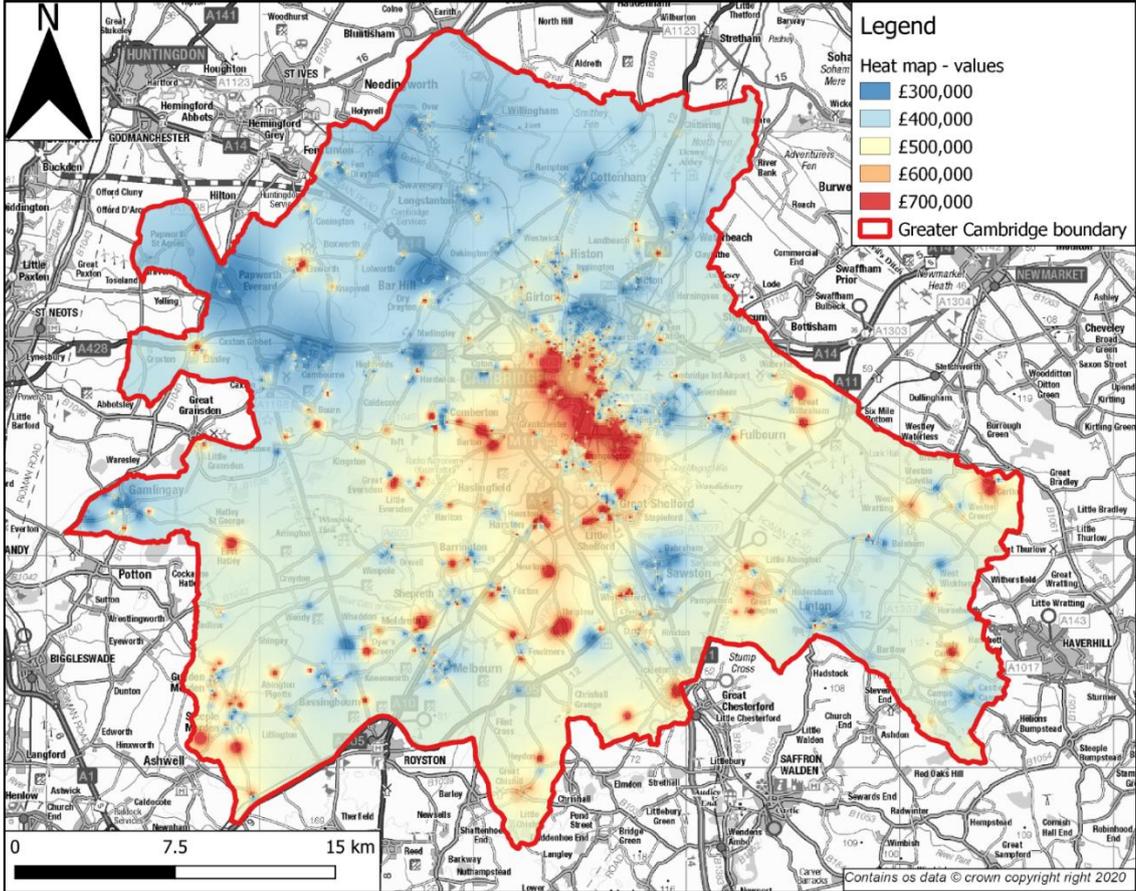
4.2 In developing the residential typologies, we have:

- Reviewed the three growth level options and the eight spatial scenarios identified by GCSP, considering:
 - Existing land uses
 - Number of units
 - Development density
- Analysis of different sale values based on the Property Market Report in Appendix 1.
- Iterative processes of analysis between the above bullet points to assess whether sites are coming forward in 'single area of value' or multiple areas of value.

Value zones

4.3 To establish the zones to use in the testing we have analysed values across the GCSP area. Our detailed analysis of the residential market is set out in Chapter 2 of the Property Market Report in Appendix 1. As illustrated in the heatmap in Figure 4-1 and supported by the detailed analysis in the Property Market Report, there is some price variation across the GCSP area on a price per unit basis. The lowest value areas identified in our analysis shown in Figure 4-1 are in South Cambridgeshire, with the highest values in certain parts of Cambridge City.

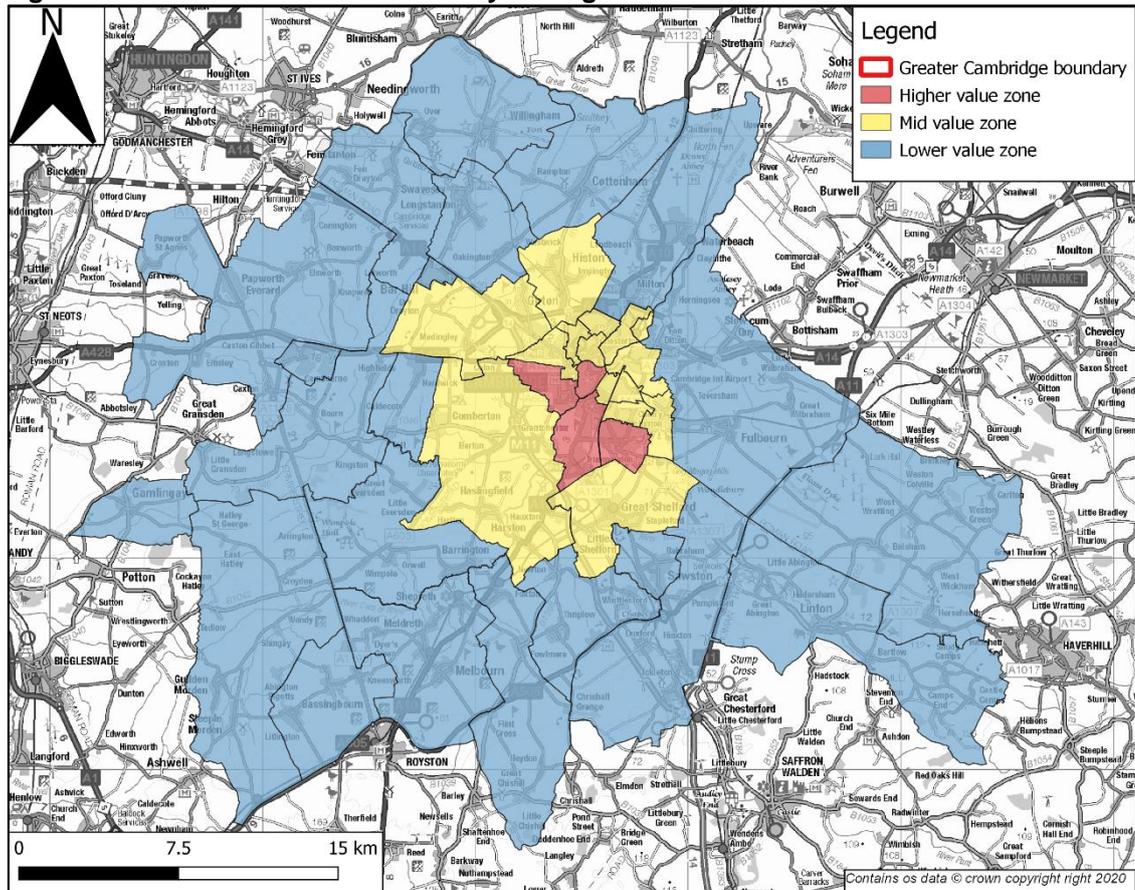
Figure 4-1 Value heatmap



Source: Figure 2-3, Property Market Report in Appendix 1 (September 2020)

4.4 Based on the evidence of sale values, we concluded in Chapter 2 of the Property Market Report in Appendix 1 that there is justification to vary the viability testing across three value zones – see Figure 4-2 for our proposed zones.

Figure 4-2 Value zones used in viability testing



Source: Figure 2-4, Property Market Report in Appendix 1 (September 2020)

- 4.5 These zones are only at draft stage and may change once we know the pattern of the proposed development and further consultation is undertaken with stakeholders. In establishing the value zones in Figure 4-2 ward boundaries have been used, as not only do they provide a clear definable boundary they represent the 'best fit' for the variation in property prices.
- 4.6 The lower value zones comprise those wards to the in South Cambridgeshire; the mid value zone is around the edge of Cambridge; and the higher value zone is the core of Cambridge City. The electoral wards for each value area are set out in Table 4-1.

Table 4-1 Value zone by electoral ward

Value zone	Wards
Higher value area	Trumpington; Newnham; Queen Edith's; Market
Mid Value zone	Harston & Comberton; Girton; Shelford; Histon & Impington; Milton & Waterbeach; Castle; East Chesterton; Arbury; West Chesterton; King's Hedges; Coleridge; Cherry Hinton; Abbey; Petersfield; Romsey

Value zone	Wards
Lower value area	Caxton & Papworth; Balsham; The Mordens; Bassingbourn; Gamlingay; Caldecote; Melbourn; Barrington; Foxton; Whittlesford; Duxford; Linton; Over & Willingham; Milton & Waterbeach; Cottenham; Fen Ditton & Fulbourn; Sawston; Hardwick; Swavesey; Longstanton; Cambourne; Bar Hill

Source: AspinallVerdi (2020)

- 4.7 The values adopted in each of these zones are set out in Table 4-2 – details of how these values are derived are set out in Chapter 2 of the Property Market Report in Appendix 1.

Table 4-2 Proposed sale values in viability testing

Typology	Unit Size sqm	Unit Price	£psm
Higher value zone			
Studio	40	£280,000	£7,000
1 bed flat	50	£330,000	£6,600
2 bed flat	75	£455,000	£6,067
3 bed flat	86	£500,000	£5,814
Mid value zone			
Studio	40	£265,000	£6,625
1 bed flat	50	£300,000	£6,000
2 bed flat	70	£365,000	£5,214
3 bed flat	86	£410,000	£4,767
4 bed flat	99	£450,000	£4,545
2 bed house	75	£400,000	£5,333
3 bed house	97	£500,000	£5,155
4 bed house	150	£670,000	£4,467
Lower value zone			
2 bed house	75	£350,000	£4,667
3 bed house	97	£425,000	£4,381
4 bed house	150	£550,000	£3,667

Source: Chapter 2, Property Market Report in Appendix 1 (September 2020)

Residential typologies

- 4.8 The residential typologies that we have devised are set out in Table 4-3. These typologies reflect the three growth level options and the eight spatial scenarios set out in Chapter 1. The residential typologies have been informed by our professional judgement based on comparable developments. These typologies were issued to the GCSP for review and agreed before our testing. The typologies are also compliant with technical and minimum space standards.³⁸ And though certain elements like density have been inputted as a starting point we have used sensitivity testing to vary these.
- 4.9 The large scenarios i.e. Edge of Cambridge A and B, D and E; New Settlement A and B; have had dwelling number determined by how many units can be delivered over the plan period. In reality, the overall sizes of the developments are likely to be larger (i.e. up to 9,000 dwellings) with some delivered after the plan period. Based on current build out rates it is extremely unlikely that a single scheme of 9,000 units could be delivered over the plan period. The strategic nature of the assessment means testing the whole site (i.e. the elements beyond the plan period) will not provide any meaningful analysis. In the assessment, values and costs are assessed on either a £psm, per unit or £ per hectare and results displayed on £ per unit basis. Therefore, increasing the site area to yield more units will generate the same results. Meaningful analysis of increasing the number of units will start to occur once the site testing evolves e.g. once infrastructure costs become “lump sums” and these costs can then be spread across the number of units.

³⁸ Department for Communities and Local Government (now The Ministry of Housing, Communities and Local Government's, March 2015, Technical housing standards – nationally described space standard

Table 4-3 Residential typologies

Typology	Greenfield/ brownfield	Unit types	No of Dwellings	Gross DPH	Gross site area	Gross to net	Net DPH	Net site area	Value zone
Urban A	Brownfield	Flats and Houses	700	53	13.33	70%	75	9.33	Mid
Urban B	Brownfield	Flats	50	143	0.35	95%	150	0.33	Higher
Urban C	Brownfield	Flats	700	225	3.11	75%	300	2.33	Mid
Edge of Cambridge A	Greenfield	Houses	3,870 ³⁹	20	193.50	50%	40	96.75	Mid
Edge of Cambridge B	Greenfield	Houses	1,935 ⁴⁰	20	96.75	50%	40	48.38	Mid
Edge of Cambridge C	Greenfield	Houses	500	28	17.86	70%	40	12.50	Mid
Edge of Cambridge D	Brownfield	Houses	3,870 ⁴¹	20	193.50	50%	40	96.75	Mid
Edge of Cambridge E	Brownfield	Houses	1,935 ⁴²	20	96.75	50%	40	48.38	Mid
New Settlement A	Greenfield	Houses	5,120 ⁴³	20	256.00	50%	40	128.00	Lower
New Settlement B	Greenfield	Houses	2,560 ⁴⁴	20	128.00	50%	40	64.00	Lower
Dispersal villages A	Greenfield	Houses	50	27	1.85	90%	30	1.67	Lower
Dispersal villages B	Brownfield	Houses	50	27	1.85	90%	30	1.67	Lower
Dispersal villages C	Greenfield	Houses	250	26	9.52	75%	35	7.14	Lower
Dispersal villages D	Brownfield	Houses	250	26	9.52	75%	35	7.14	Lower

Source: AspinallVerdi (September 2020)

³⁹ Based on delivery rate of 500 units per annum. Plan adopted Autumn 2025 followed by lead in of 7.5 years with build up to end Q2 2041.

⁴⁰ Same as above with delivery rate of 250 per annum.

⁴¹ Based on delivery rate of 500 units per annum. Plan adopted Autumn 2025 followed by lead in of 7.5 years with build up to end Q2 2041.

⁴² Same as above with delivery rate of 250 per annum.

⁴³ Based on delivery rate of 500 units per annum. Plan adopted Autumn 2025 followed by lead in of 5 years with build up to end Q2 2041.

⁴⁴ Same as above with delivery rate of 250 per annum.

4.10 As part of the review of the typologies with GCSP we created Table 4-4 to demonstrate how the generic typologies reflect the eight spatial scenarios set out in Chapter 1. The numbers in each column relate to the eight spatial scenarios set out in Chapter 1. Each of the eight spatial scenarios have a minimum (min), medium (med) and maximum (max) delivery rate which has also been captured in the analysis in Table 4-4. Due to the broad description of the three growth level options and the eight spatial scenarios, some of our typologies overlap across multiple spatial scenarios.

Table 4-4 Spatial options covered by devised typologies
Typology Strategic spatial options and minimum, medium and maximum housing delivery numbers

Typology	1			2			3			4			5			6			7			8			
	Min	Med	Max																						
Urban C	x	x	x					x																	
Urban A & B	x	x	x	x	x	x										x	x	x			x		x	x	
Edge – brownfield D & E		x	x	x	x	x															x				x
Edge - greenfield A - C		x						x	x	x															
New settlement A & B					x	x					x	x	x							x	x	x	x	x	x
Dispersal village A - D															x	x	x			x	x	x	x	x	x

Source: AspinallVerdi (September 2020)

Non-residential typologies

4.11 Here we outline our typologies for non-residential testing. At this early stage of testing, we have only focused on employment uses as these are discussed in the strategic option document:

- Science Park (R&D space)
 - 5,000 sqm Net Internal Area (NIA) – 85% of Gross Internal Area (GIA)
 - Site coverage 40%
 - Brownfield and greenfield
- Cambridge town centre Office
 - 5,000 sqm NIA – 85% gross to net
 - Site coverage 70%
 - Brownfield
- Cambridge fringe office park
 - 2,000 sqm NIA – 85% gross to net
 - Site coverage 40%
 - Brownfield and greenfield
- Rural office park
 - 2,000 sqm NIA – 85% gross to net
 - Site coverage 40%
 - Greenfield
- Industrial Class E (light industrial)/B2
 - 200 sqm GIA
 - Site coverage 40%
 - Greenfield and brownfield
- Industrial B2/B8
 - 5,000 sqm GIA
 - Site coverage 40%
 - Brownfield and greenfield

5 Appraisal inputs & assumptions

- 5.1 This section of the report sets out the inputs and assumptions that we have used in the development appraisals. In Table 5-1, we outline the values used across all uses, then build costs and then finally land values.
- 5.2 It is important to bear in mind that many of these assumptions are only a starting point and we will be varying inputs through our sensitivity testing. Throughout the plan making process the Councils will be considering the policies referenced in this table, and what policy approaches should be included in the new Greater Cambridge Local Plan. Therefore, these assumptions will be updated as plan making progresses.

Table 5-1 Strategic options appraisal inputs and assumptions

Input	Assumption	Source/comment								
Mix/tenure										
Market unit mix	<p>We have used the H/9 to inform our policy and have attributed the additional 10% to 3 bed properties to reflect development in the area e.g. Northstowe development:</p> <ul style="list-style-type: none"> • 30% 2 bed properties, • 40% 3 bed properties, • 30% 4 bed properties <p>For Urban A scenario we have assumed a mix of flats and houses. We have therefore assumed that 2 bed units would be delivered as flats.</p> <p>For flatted development we have relied upon the mix outlined for the NECAAP area.</p> <table border="1"> <tbody> <tr> <td>Studio</td> <td>5%</td> </tr> <tr> <td>1 Bed</td> <td>30%</td> </tr> <tr> <td>2 Bed</td> <td>50%</td> </tr> <tr> <td>3 Bed</td> <td>15%</td> </tr> </tbody> </table>	Studio	5%	1 Bed	30%	2 Bed	50%	3 Bed	15%	<p>The GCSP have advised we consider Policy H/9 of the South Cambridgeshire adopted local plan, and Phase 1 of the Northstowe development</p> <p>Policy H9: Housing mix</p> <p>30% 1 or 2 bed properties, 30% 3 bed properties, 30% 4 bed plus properties</p> <p>With 10% flexibility allowance that can be added to any of the above categories.</p> <p>Northstowe Phase 1 S/0388/12 – dwelling mix in outline application – received deemed consent for condition 13 which secures the housing mix as</p> <p>25% 2 bed properties, 46% 3 bed properties, 22% 4 bed properties and 7% 5 bed plus.</p>
Studio	5%									
1 Bed	30%									
2 Bed	50%									
3 Bed	15%									

Input	Assumption	Source/comment
Affordable unit mix	40% affordable housing mix to be calculated using figures above	See above
Affordable tenure split	75% social/affordable rents 25% intermediate housing	South Cambridgeshire District Council 2010 and Cambridge City SPD 2008 75% social/affordable rents 25% intermediate housing

- Unit sizes
- Higher value zone – *Urban B (flatted only)*
- Studio – 40 sqm
 - 1 bed flat – 50 sqm
 - 2 bed flat – 75 sqm
 - 3 bed flat – 86 sqm
- Mid value zone – *Urban A and C; Edge of Cambridge A-E*
- Studio – 40 sqm
 - 1 bed flat – 50 sqm
 - 2 bed flat – 70 sqm
 - 3 bed flat – 86 sqm
 - 4 bed flat - 99 sqm
 - 2 bed house – 75 sqm
 - 3 bed house – 97 sqm
 - 4 bed house – 150 sqm
- Lower value zone – *New Settlement A and B; Dispersal Villages A-D*
- 2 bed house – 75 sqm
 - 3 bed house – 97 sqm
 - 4 bed house – 150 sqm

Based on evidence in Property Market Report in Appendix 1 and benchmarked against minimum space standards.

Number of bedrooms(b)	Number of bed spaces (persons)	1 storey dwellings	2 storey dwellings	3 storey dwellings	Built-in storage
1b	1p	39 (37) ^d			1.0
	2p	50	58		1.5
2b	3p	61	70		2.0
	4p	70	79		
3b	4p	74	84	90	2.5
	5p	86	93	99	
	6p	95	102	108	
4b	5p	90	97	103	3.0
	6p	99	106	112	
	7p	108	115	121	
	8p	117	124	130	
5b	6p	103	110	116	3.5
	7p	112	119	125	
	8p	121	128	134	
6b	7p	116	123	129	4.0
	8p	125	132	138	

Input	Assumption	Source/comment
	For affordable units we have assumed the same sizes for units apart from 4 beds where we have followed minimum space standards.	
Values		
Sale Values	<p>Higher value zone – <i>Urban B (flatted only)</i></p> <ul style="list-style-type: none"> • Studio - £280,000 • 1 bed flat - £330,000 • 2 bed flat - £455,000 • 3 bed flat - £500,000 <p>Mid value zone – <i>Urban A and C; Edge of Cambridge A-E</i></p> <ul style="list-style-type: none"> • Studio - £265,000 • 1 bed flat - £300,000 • 2 bed flat - £365,000 • 3 bed flat - £410,000 • 4 bed flat - £450,000 • 2 bed house - £400,000 • 3 bed house - £500,000 • 4 bed house - £670,000 <p>Lower value zone – <i>New Settlement A and B; Dispersal Villages A-D</i></p> <ul style="list-style-type: none"> • 2 bed house - £350,000 • 3 bed house - £425,000 • 4 bed house - £550,000 	Based on the evidence in Property Market Report in Appendix 1.
Affordable transfer values	<p>Social/affordable rent – 50% of OMV</p> <p>Intermediate – 70% of OMV</p>	We have been provided with information from GCSP housing department. We are in the process of confirming this with RPs active in the local market.
Commercial rents	Science Park (R&D space)	Based on the evidence in Property Market Report in Appendix 1.

Input	Assumption	Source/comment
	<ul style="list-style-type: none"> £36 psf (£387 psm) 12 month rent free Cambridge (CBD) Office £46 psf (£495 psm) 12 month rent free Cambridge fringe office park £36 psf (£388 psm) 12 month rent free Rural office park £25 (£269 psm) 12 month rent free Industrial Class E (light industrial)/B2 £13.50 6 month rent free Industrial B2/B8 £12.50 6 month rent free 	
Commercial yields	Science Park (R&D space) <ul style="list-style-type: none"> 5.25% Cambridge (CBD) Office <ul style="list-style-type: none"> 5% Cambridge fringe office park Office B1(a) <ul style="list-style-type: none"> 5.5% Rural office park <ul style="list-style-type: none"> 6.5% Industrial Class E (light industrial)/B2 <ul style="list-style-type: none"> 6% Industrial B2/B8 <ul style="list-style-type: none"> 5.5% 	Based on the evidence in Property Market Report in Appendix 1.
Costs		
Residential Build cost	Cambridge City build costs <ul style="list-style-type: none"> £1,227 psm (generally houses) <ul style="list-style-type: none"> Edge of Cambridge A-E; Urban A £1,376 psm (generally flats) <ul style="list-style-type: none"> Urban A and B £1,568 psm (6 storey or above flats) 	BCIS last 5 years rebased for the local area. We vary this by area depending on where the typology is coming forward i.e. in Cambridge City or South Cambridgeshire.

Input	Assumption	Source/comment
	<ul style="list-style-type: none"> ○ <i>Urban C</i> South Cambridgeshire build costs <ul style="list-style-type: none"> £1,191 psm (generally houses) ○ <i>New Settlement A and B; Dispersal Villages A-D</i> 	
Commercial build costs	Science Park (R&D space) <ul style="list-style-type: none"> • <i>Research facilities £2,289 psm</i> Cambridge (CBD) Office <ul style="list-style-type: none"> • <i>Offices (air-con) generally £1,912 psm</i> Cambridge fringe office park <ul style="list-style-type: none"> • <i>Offices (air-con) generally £1,912 psm</i> Rural office park <ul style="list-style-type: none"> • <i>Offices (air-con) generally £1,856 psm</i> Industrial Class E (light industrial)/B2 <ul style="list-style-type: none"> • <i>Warehouse/stores £812 psm</i> Industrial B2/B8 <ul style="list-style-type: none"> • <i>Warehouse/stores £812 psm</i> 	BCIS median last 5-15 years rebased for the local area. Where there is insufficient sample size for the 5 year period we have extended the analysis. We vary this by area depending on where the typology is coming forward i.e. in Cambridge City or South Cambridgeshire.
External works for services and infrastructure	20% of build costs for New Settlements A and B 15% of build costs for all other typologies	External works will vary, depending on typology i.e. higher for greenfield. Based on analysis of comparable schemes. This cost allowance includes landscaping, internal road, utilities connections, garages etc.
Infrastructure	£0 - £30,000 per dwelling. <i>Urban A & C: £30,000</i> <i>Urban B: £0 (covered by externals allowance)</i> <i>Edge of Cambridge (greenfield): £20,000</i> <i>Edge of Cambridge (brownfield): £15,000</i> <i>New Settlement: £30,000</i> <i>Dispersal villages: £10,000</i>	We vary infrastructure costs by typology. Small brownfield sites will have no infrastructure cost, whereas greenfield new settlements will have significantly higher e.g. £30,000 per dwelling. Our infrastructure allowance includes costs for roads, rail, and other major pieces of infrastructure. Our figures are based on our experience of similar schemes. These costs are only indicative and will require updating when more information becomes available for Stantec's infrastructure study.

Input	Assumption	Source/comment
		Some scenarios may see significantly higher infrastructure costs which will have a negative impact on viability
Site abnormalities	£110,000 per net developable acre	Site abnormalities will vary significantly from site to site. We have assumed our allowance includes the cost for demolition and remediation. We have had regard to HCA (now Homes England) guidance on dereliction, demolition and remediation costs, March 2015, along with comparable schemes.
Water efficiency – limit water to 110 litres/person/day	£9 per dwelling	Cost reflects limit water usage to 110 litres/person/day. Based Department of Communities and Local Government Housing Standards Review Cost Impact, September 2014 by EC Harris.
Statutory Planning Fees	Based on national formula.	Fees as per the calculator set out in the Planning Portal website.
Planning Application Professional Fees, Surveys and reports	Calculated as a three times multiplier to national formula above.	Considered reasonable allowance for planning-related fees, other fees covered through professional fees allowance.
Professional fees	10% of BCIS build cost	Typically ranges between 8% - 12%, based comparable schemes.
Contingency	5% of BCIS build cost	Typically ranges between 3% - 5%, based comparable schemes.
Biodiversity offset	£42,545 per gross hectare of development land	Cost calculated on gross site area. We have relied upon calculation set out in the Biodiversity net gain and local nature recovery strategies (2019).
Developer contributions (psm or per dwelling)	Treated as viability output	Results show the trade-off between developer contributions and affordable housing in our sensitivity analysis.
Sale Agents Costs	1.0%	Source: Page 35 Harman report and comparable schemes.
Sale Legal Costs	0.5%	Ditto

Input	Assumption	Source/comment
Marketing and Promotion	1.5%	Ditto
Profit on market housing	20.0% on GDV	<i>'For the purpose of plan making an assumption of 15-20% of gross development value (GDV) may be considered a suitable return to developers in order to establish the viability of plan policies. Plan makers may choose to apply alternative figures where there is evidence to support this according to the type, scale and risk profile of planned development.'</i> ⁴⁵
Profit on affordable housing	6.0% on GDV	<i>'A lower figure may be more appropriate in consideration of delivery of affordable housing in circumstances where this guarantees an end sale at a known value and reduces risk. Alternative figures may also be appropriate for different development types.'</i> ⁴⁶
Profit on Commercial	20% on Cost	Commercial developers assess profit on cost, on the basis that the investment is sold on practical completion of build – figure based comparable schemes.
Interest	7.5% (inclusive of finance fee)	Based on comparable schemes.
SDLT on land value	5.0%	Viability model treats SDLT as a fixed percentage at higher HMRC rate, in reality, the rates are variable depending on land value.
Agents fee on land value	1.0%	Based on comparable schemes.
Legal fee on land value	0.5%	Ditto
Commercial letting agents costs	10% of first years rent	Typically ranges input, based on industry norms and comparable schemes.
Commercial letting legal costs	5% of first years rent	Ditto

⁴⁵ MHCLG, 05 May 2019, PPG, Paragraph: 018 Reference ID: 10-018-20190509

⁴⁶ Ibid Paragraph: 018 Reference ID: 10-018-20190509

Input	Assumption	Source/comment
Commercial Investment Sale Agents Costs	1% of GDV	Ditto
Commercial Investment Sale Legal Costs	0.5% of GDV	Ditto
Benchmark Land Value		
<i>Benchmark Land Value</i>	Brownfield: £480k per gross acre Greenfield: £100k per gross acre	<p>In accordance with the PPG on viability, we have based our land value assessment on the Existing Use plus Premium method.⁴⁷ We have assumed that brownfield sites coming forward will be low grade employment land or similar.</p> <p>There are no recent transactions for comparable land listed on CoStar or EGi. We have therefore considered low quality industrial units/land in the wider Cambridgeshire area. EGi lists the following transactions</p> <p>Plot 202, Lancaster Way Business Park, Lancaster Way, Ely, CB6 3NW. 1.75 acre sold Feb 2018 for £700,000. £400,000 per gross acre.</p> <p>Development plot Lancaster Way Business Park, Lancaster Way CB6 3NW. 1.56 acre sold April 2019 for £678,600. £435,000 per gross acre.</p> <p>Plots 7 and 8, Lakes Business Park, Potton Road, Fenstanton, PE28 9QR. 1.6 acre sold Feb 2019 for £618,000. £386,250 per acre.</p> <p>Based on published evidence, we have assumed an existing use value for brownfield sites of £400,000 per gross acre. A 20% premium has been applied, which equates to a brownfield benchmark land value of £480k per gross acre (£1.186 million per gross ha).</p>

⁴⁷ MHCLG, 09 May 2019, PPG: Viability, Paragraph: 013 Reference ID: 10-013-20190509

Input	Assumption	Source/comment
		Agricultural land values across Cambridgeshire range between 6k -11k per gross acres based on RICS Farmland Directory H1 2019. When we apply an x10 multiplier for the landowner premium (see evidence in Chapter 3), this provided a range of £60k - £110k per gross acre. Based on the evidence available we have used a greenfield benchmark land value of £100k per gross acre.
		The benchmark land values used in this assessment are subject to change once further details are known about site specifics and their associated infrastructure costs.

Source: AspinallVerdi (September 2020)

Timescales

- 5.3 We have based our timescales on our experience of similar schemes. For the large scenarios i.e. Edge of Cambridge A and B, D and E; New Settlement A and B; we have based our timescales on delivery rates set out by the GCSP the strategic spatial options report.
- 5.4 We have assumed that infrastructure will be delivered over 18 months commencing 6 months into the lead period. This is realistic as it allows the site to be 'opened up' prior to construction.

Table 5-2 Residential timescales

Typology	Unit types	No of Dwellings	Lead in time	Construction period	Sales period
Urban A	Flats and Houses	700	18 months	60 months	60 months (commencing 12 months after start of construction)
Urban B	Flats	50	18 months	18 months	18 months (commencing on practical completion)
Urban C	Flats	700	18 months	60 months	60 months (commencing 18 months after start of construction)

Typology	Unit types	No of Dwellings	Lead in time	Construction period	Sales period
Edge of Cambridge A	Houses	3,870	18 months	93 months	93 months (commencing 6 months after start of construction)
Edge of Cambridge B	Houses	1,935	18 months	93 months	93 months (commencing 6 months after start of construction)
Edge of Cambridge C	Houses	500	18 months	48 months	48 months (commencing 6 months after start of construction)
Edge of Cambridge D	Houses	3,870	18 months	93 months	93 months (commencing 6 months after start of construction)
Edge of Cambridge E	Houses	1,935	18 months	93 months	93 months (commencing 6 months after start of construction)
New Settlement A	Houses	5,120	18 months	123 months	123 months (commencing 6 months after start of construction)
New Settlement B	Houses	2,560	18 months	123 months	123 months (commencing 6 months after start of construction)
Dispersal villages A	Houses	50	18 months	18 months	18 months (commencing 6 months after start of construction)
Dispersal villages B	Houses	50	18 months	18 months	18 months (commencing 6 months after start of construction)
Dispersal villages C	Houses	250	18 months	36 months	36 months (commencing 6 months after start of construction)
Dispersal villages D	Houses	250	18 months	36 months	36 months (commencing 6 months after start of construction)

Source: AspinallVerdi (September 2020)

5.5 Commercial timescales are outlined in Table 5-3.

Table 5-3 Commercial timescales

Typology	Lead in time	Construction period	Sales period
Science Park (R&D space)	12 months	24 months	Sold fully let on practical completion (PC)
Cambridge TC Office	12 months	24 months	Sold fully let on PC
Cambridge fringe office park	12 months	18 months	Sold fully let on PC
Rural office park	12 months	18 months	Sold fully let on PC

Typology	Lead in time	Construction period	Sales period
Industrial Class E (light industrial)/B2	12 months	12 months	Sold fully let on PC
Industrial B2/B8	12 months	18 months	Sold fully let on PC

Source: AspinallVerdi (September 2020)

Potential policy costs inputs & assumptions

5.6 At this stage draft policies have not evolved to a level that we can review, affordable housing which will be a significant policy cost is set out in Table 4-3 and is assumed will be delivered on site. Any surplus generated, we assume will fund other potential policy costs (illustrated in Table 5-4). These additional policy contributions could increase costs by approximately £27,500 per dwelling.

Table 5-4 Potential policy costs inputs & assumptions

Element	Cost	Comment
Housing accessibility	M4(2) all dwellings – @ £521 per dwelling M4(3) – @ £10,307 per dwelling on schemes of 20 or more units applied to 5% of affordable housing dwellings.	Cost is based on the DCLG Housing Standards Review, Final Implementation Impact Assessment, March 2015, paragraphs 153 and 157.
Climate Change	£2,557 per dwelling - 20% reduction in CO2 £4,847 per dwelling – 31% reduction in CO2 £10,000 per dwelling zero carbon	20% & 31% reduction based on MHCLG The Future Homes Standard 2019 Consultation on changes to Part L (conservation of fuel and power) and Part F (ventilation) of the Building Regulations for new dwellings: Impact Assessment. We are aware that buildings regulations are changing, however at the present time the cost of these changes are not yet reflected in the BCIS build costs samples, which is why we are including these as a separate cost. Zero carbon based on research by Centre for Sustainable Energy 'Cost of carbon reduction in new buildings Final report', December 2018.

Element	Cost	Comment
Renewable/low carbon energy	£3,500 per dwelling	<p>Cost reflects renewable / low carbon energy production equipment to provide at least 10% of predicted energy requirements. This could be a combination of passive solar design, solar thermal (solar hot water), solar electricity (photovoltaics or 'PV'), heat pumps and combined heat and power (Micro-CHP). There has been no recent published research on the costs for achieving 10% renewable energy. In 2006, the Energy Saving Trust published research 'Meeting the 10 per cent target for renewable energy in housing – a guide for developers and planners', which indicated a cost of between £2,500 and £5,000 per dwelling – our figure used is a mid-point in the range stated. Cost consultant's Currie & Brown⁴⁸ state that the cost of a 2kWp PVs as £2,940 and Air Source Heat Pump (ASHP) for a semi-detached house as £4,200. Again, our figure falls in the range of the two technology solutions. There could potentially be an element of double counting with the cost of achieving climate change CO2 reduction as this contributes positively to carbon emissions reductions through displacement of grid electricity, or by direct partial consumption at the point of generation. Such contributions support the gradual decarbonisation of the electricity grid and, combined with smart local supply/demand solutions and/or energy storage technologies, provide a robust approach towards more resilient energy strategies. In that respect it was important to consider PV generation within the research work. Renewable heat generation also has an important role to play reducing energy required for hot water generation.⁴⁹ Including an additional cost for renewable energy could therefore be considered a conservative approach to the viability testing but ensures both elements are met.</p>

⁴⁸ Currie & Brown, December 2018, Centre for Sustainable Energy Cost of carbon reduction in new buildings, page 16 & page 25

⁴⁹ Currie & Brown, September 2019, Tunbridge Wells Borough Council Energy Policy Viability Report, page 13

Element	Cost	Comment															
Electric charging points	£1,000 per dwelling housing schemes assumed wallbox £10,000 per multi car park charge point for flatted schemes – assumed for every 4 dwellings.	The estimated cost of providing a facility on site provided by Energy Saving Trust. ⁵⁰ Cost supported through recent advice by Swindon Borough Council and for their Whole Plan Wide Viability study we are advising on.															
Water efficiency cost	<table border="1"> <thead> <tr> <th></th> <th>Apartments</th> <th>Houses</th> </tr> </thead> <tbody> <tr> <td>Code Level 1 and 2</td> <td>-</td> <td>†</td> </tr> <tr> <td>Code Level 3 and 4 (105 l/p/d)</td> <td>£6</td> <td>£9</td> </tr> <tr> <td>Code Level 5 and 6 (80 l/p/d)</td> <td>£900</td> <td>£2,201 - £2,697</td> </tr> <tr> <td>Rainwater only</td> <td>£887</td> <td>£2,181 - £2,674</td> </tr> </tbody> </table>		Apartments	Houses	Code Level 1 and 2	-	†	Code Level 3 and 4 (105 l/p/d)	£6	£9	Code Level 5 and 6 (80 l/p/d)	£900	£2,201 - £2,697	Rainwater only	£887	£2,181 - £2,674	<p>Code Level 3 and 4 (105l) are already included in our testing. Other costs are additional options.</p> <p>Water standards costs (extra over usual industry practice), with reference to Code for Sustainable Homes levels (Housing Standards Review Cost Impacts report, DCLG 2014).</p>
	Apartments	Houses															
Code Level 1 and 2	-	†															
Code Level 3 and 4 (105 l/p/d)	£6	£9															
Code Level 5 and 6 (80 l/p/d)	£900	£2,201 - £2,697															
Rainwater only	£887	£2,181 - £2,674															

⁵⁰ <https://www.energysavingtrust.org.uk/scotland/grants-loans/domestic-charge-point-funding>

6 Viability testing results

- 6.1 We set out below a summary of our viability findings for all the scenarios tested. We have only included affordable housing, biodiversity net gain, water efficiency (at standards set out in the current plan) and an infrastructure allowance in our appraisal. Any surplus shown could fund additional policy costs (potential policy costs illustrated in Table 5-4). Should GCSP wish to include, some or all of these policies they can assess whether this is likely to be viable based on the surplus and the indicative costs. In this assessment there is sufficient viability buffer to absorb some future plan policies and infrastructure costs. But the viability of all scenarios is likely to reduce and some may begin to be unviable if policy costs are too great. Although the PPG is clear that land values should reflect all costs there may become a 'tipping point' there will not be a sufficient enough premium over the existing use value.
- 6.2 It is important to note that the overpayment for sites is not a reason not to provide policy contribution. Price paid information of specific development sites should not be used to inform benchmark land values.
- 6.3 If any of the cost allowances assumed for infrastructure are too low, then any additional costs will have to be deducted from the surplus shown below and may compromise the amount of policy that can be delivered. As these appraisals are strategic, we have not been able to include information about site specific constraints i.e. contamination, flood risk, more complex land values etc. We have also not been able to customise our development timings; therefore, for those potential sites that require significant upfront infrastructure to unlock the development, viability is likely to decrease than what is shown in this assessment.

Residential

- 6.4 The residential appraisal results are set out in Appendix 2 – 5. The appraisal results include a series of sensitivity tables. In the results below, we have summarised the sensitivity tables of change in percentage of affordable housing v change in S106 cost per unit. The other sensitivity tables included in the appendices are:
- Change in percentage of affordable housing v change in developer contribution cost per unit.
 - Change in percentage of affordable housing v change in developer contribution cost £psm.
 - Change in percentage of affordable housing v change in build costs.
 - Change in percentage of affordable housing v change in sale values.
 - Change in percentage of affordable housing v change in benchmark land value.

- Change in percentage of affordable housing v change in dwellings per hectare.⁵¹
 - Change in percentage of affordable housing v change in profit.
- 6.5 At this early strategic stage, a number of our scenarios have similar inputs and underlying assumptions. Until more information is known around the sites and infrastructure it is difficult to vary further. This means that results for scenarios are similar in some cases.

Urban

- 6.6 A summary of the viability results is shown in Table 6-1 – the appraisals are contained in Appendix 2. All of our results are shown on a surplus per dwelling basis. Our testing shows that all scenarios are viable with 40% affordable housing. All scenarios produce a significant surplus above the benchmarked land value. Depending on the policies devised by the GCSP additional policy costs (shown in Table 5-4) may need to be deduced from the surplus.
- 6.7 For typologies Urban A and C we have assumed these would be delivered on the NECAAP. We understand that this site is likely to require significant infrastructure to enable development. But at this stage these costs are unknown. We have Included an assumption of £30,000 per unit in these scenarios.

⁵¹ Density is varied on net dph basis. As density is increased the amount of land required on a gross and net basis reduces. This in turn decreases the overall land value and improves viability. For example, the scenarios 'Edge of Cambridge A' includes 3,870 units at a site gross to net of 50%. The net density is 40dph meaning the gross site size is 193.5 ha with a site cost of £47.8m. If the net density is increased to 50dph the gross site size is 154.8 ha with a site cost of £38.25m.

Table 6-1 Urban typologies – results surplus per dwelling

Typology	Number of units	Affordable housing level				
		30%	35%	40%	45%	50%
Surplus per dwelling⁵²						
Urban A	700	£75,000	£75,000	£70,000	£65,000	£60,000
Urban B	50	£112,500	£112,500	£105,000	£105,000	£97,500
Urban C	700	£34,000	£32,000	£28,000	£26,000	£24,000

Source: AspinallVerdi (September 2020)

Edge of Cambridge

6.8 A summary of the viability results is shown in Table 6-2 – the appraisals are contained in Appendix 3). All of our results are shown on a surplus per dwelling basis. Our testing shows that all scenarios are viable with 40% affordable housing. We have included an allowance of £15,000 unit for brownfield and £20,000 per unit for greenfield for infrastructure. Again, all scenarios produce a significant surplus above the benchmarked land value with this surplus available to fund additional policy costs (shown in Table 5-4).

Table 6-2 Edge of Cambridge typologies – results surplus per dwelling

Typology	Number of units	Affordable housing level				
		30%	35%	40%	45%	50%
Surplus per dwelling						
Edge of Cambridge A	3,870	£105,000	£97,500	£97,500	£90,000	£82,500
Edge of Cambridge B	3,870	£105,000	£97,500	£90,000	£90,000	£82,000
Edge of Cambridge C	500	£112,500	£112,500	£105,000	£105,000	£97,500
Edge of Cambridge D	3,870	£65,000	£65,000	£60,000	£55,000	£50,000
Edge of Cambridge E	1,935	£65,000	£65,000	£60,000	£55,000	£50,000

Source: AspinallVerdi (September 2020)

⁵² In a number of our scenarios the amount of surplus reported is the same even when affordable housing is varied. This is due to the scale we use to vary the surplus in our sensitivity testing. This level of detail is sufficient at this stage and will be refined in later iterations of the report.

New Settlements

- 6.9 A summary of the viability results is shown in Table 6-3– the appraisals are contained in Appendix 4. All of our results are shown on a surplus per dwelling basis. Our testing shows that all scenarios are viable with 40% affordable housing. We have included an allowance of £30,000 per unit for infrastructure. Again, all scenarios produce a significant surplus above the benchmarked land value with this surplus available to fund additional policy costs (shown in Table 5-4).
- 6.10 We understand that in reality some major sites such as new settlements in Greater Cambridge have not been able to viably provide full policy contributions in recent years. This is likely due to site specific circumstances similar to those noted in paragraph 6.3 in the introduction of this section. Specifically, they are likely to have front loaded costs such as schools or infrastructure which will have a significant impact on the finance costs in our cashflow. Once we have better understanding of these costs and the associated timings viability may decrease in later iterations of our testing.

Table 6-3 New settlements typologies – results surplus per dwelling

Typology	Number of units	Affordable housing level				
		30%	35%	40%	45%	50%
Surplus per dwelling						
New Settlement A	5,120	£57,000	£54,000	£51,000	£48,000	£42,000
New Settlement B	2,560	£57,000	£54,000	£51,000	£48,000	£42,000

Source: AspinallVerdi (September 2020)

Dispersal Villages

- 6.11 A summary of the viability results is shown in Table 6-4 – the appraisals are contained in Appendix 5. All of our results are shown on a surplus per dwelling basis. We have included an allowance of £30,000 per unit for infrastructure. All scenarios produce a significant surplus above the benchmarked land value with this surplus available to fund additional policy costs (shown in Table 5-4).

Table 6-4 Dispersal villages typologies – results surplus per dwelling

Typology	Number of units	Affordable housing level				
		30%	35%	40%	45%	50%
Surplus per dwelling						

Typology	Number of units	Affordable housing level				
		30%	35%	40%	45%	50%
Dispersal villages A	50	£90,000	£85,000	£80,000	£75,000	£75,000
Dispersal villages B	50	£37,500	£32,500	£27,500	£25,000	£20,000
Dispersal villages C	250	£85,000	£80,000	£80,000	£75,000	£70,000
Dispersal villages D	250	£47,500	£42,500	£40,000	£35,000	£30,000

Source: AspinallVerdi (September 2020)

Employment uses

- 6.12 Our viability testing results for science park (R&D space), industrial and office uses are set out in Appendix 6. Our results show that all uses tested are viable, apart from rural office parks, with differing levels of surplus psm of development. Rural office parks are only marginally unviable, small changes to rents or investment yield would render this scenario viable.

Table 6-5 Commercial testing results

Typology	Greenfield/ Brownfield	Surplus per sqm of development
Science Park (R&D space)	Greenfield	£800 psm
Science Park (R&D space)	Brownfield	£500 psm
Cambridge TC Office	Brownfield	£2,250 psm
Cambridge fringe office park	Greenfield	£1,200 psm
Cambridge fringe office park	Brownfield	£900 psm
Rural office park	Greenfield	Unviable
Industrial Class E (light industrial)/B2	Greenfield	£450 psm
Industrial Class E (light industrial)/B2	Brownfield	£150 psm
Industrial B2/B8	Greenfield	£400 psm
Industrial B2/B8	Brownfield	£100 psm

Source: AspinallVerdi (September 2020)

Conclusions

- 6.13 Our testing has shown that development is generally viable across all residential scenarios testing with varying levels of surplus produced. Commercial testing is also generally viable with only greenfield rural offices proving unviable. These results are a useful tool in demonstrating which strategic locations are likely to be the most viable. It also provides the GCSP with an understanding of what additional policy costs they can look to included while not rendering development unviable (indicative costs for these additional polices are included in Table 5-4).
- 6.14 It is important to note that these results are not the final position on viability and only provide a broad indication to help inform potential allocations and policies. Once polices and site allocations are determined testing will have to be refined producing a new set of results. Viability in many cases may reduce as we gain more understanding of site-specific costs and can include more in-depth assumptions in regards to timing.
- 6.15 There is still a significant amount of work that needs to be undertaken that could have significant bearing on both our evidence and subsequent results. Collaboration with other consultants in the project team e.g. Stantec, WSP etc. will provide more information in regards to infrastructure and energy, carbon reduction and renewable energy costs. We will also have to take in-depth consultations both with stakeholder and the Councils to ensure our testing is as robust as possible. Ultimately this an iterative process and we are only at the beginning of refining our evidence and numbers.

Final

Property Market Report

Greater Cambridge Shared Planning



November 2020

Quality Assurance

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Date	November 2020
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Date	November 2020

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Appendices

Appendix 1 – Residential Sale Value Evidence

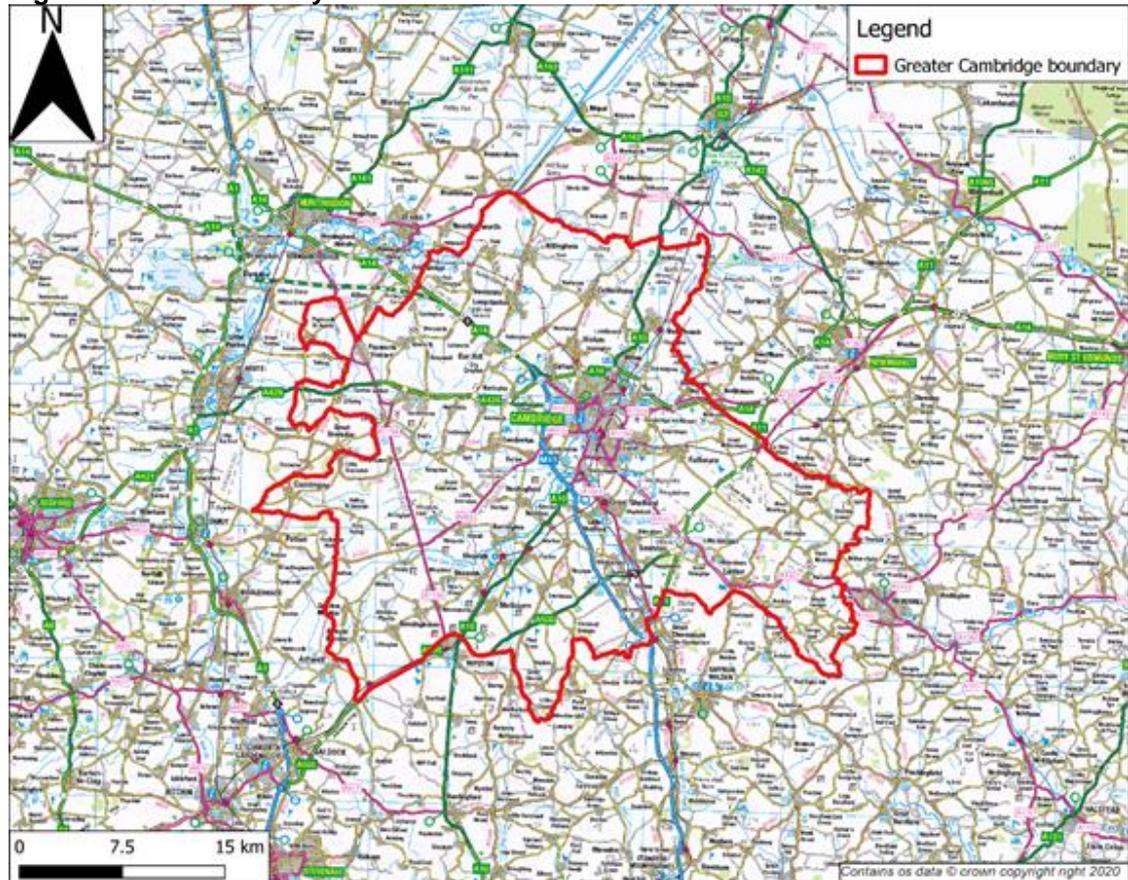
1 Introduction

- 1.1 This market report has been used to inform our assessment for the Greater Cambridge Local Plan development viability testing; and the viability assessment of the North East Cambridgeshire AAP (NECAAP). This report draws on data from recognised published data such as CoStar, EGi, Land Registry, Rightmove.co.uk, Zoopla, Energy Performance Certificates (EPCs), published reports and agent consultations.
- 1.2 Our market assessment considers the following markets:
- General needs residential
 - Build to rent (BTR)
 - Older person's accommodation
 - Student accommodation
 - Serviced apartments
 - Hotels
 - Retail (comparison and convenience)
 - Science parks
 - Office
 - Industrial and Distribution

Study area

- 1.3 This market report considers the Greater Cambridge area. As set out in Figure 1-1 the Greater Cambridge area comprises the urban area of Cambridge City and the more rural area of South Cambridgeshire.

Figure 1-1 Site Boundary



Source: AspinallVerdi, 2020

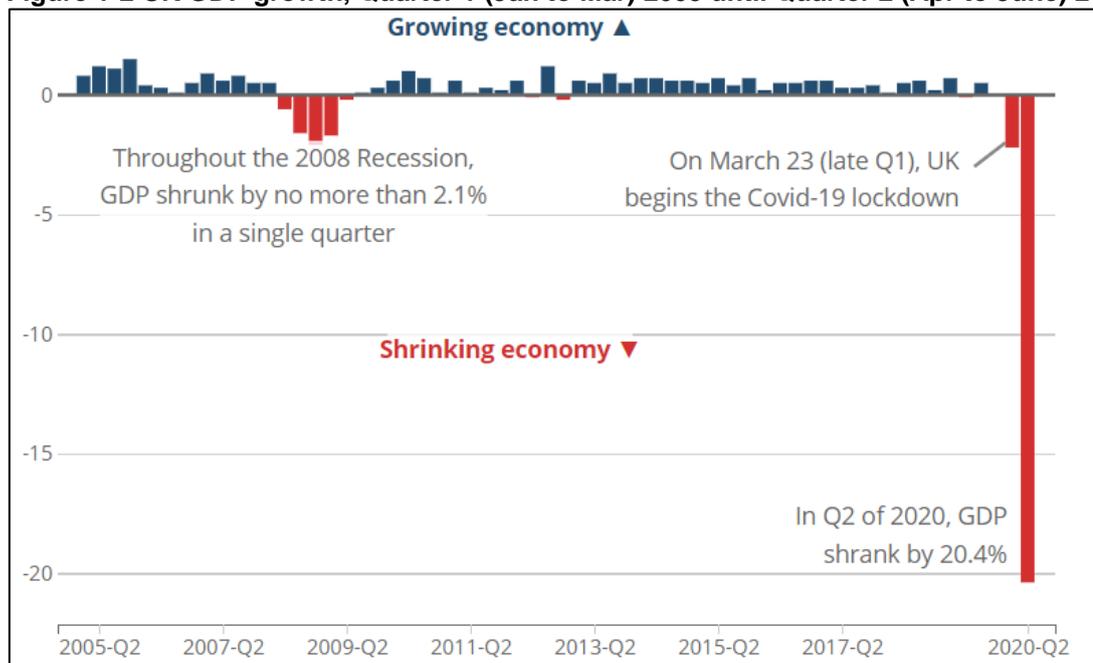
Novel Coronavirus (Covid-19)

- 1.4 On the 11 March 2020 the World Health Organisation declared the coronavirus a worldwide pandemic. On the 23 March, 2020 the UK entered a period of “lockdown” which resulted in measures such as the government asking people to work from home (unless key workers), furlough scheme to protect workers, restrictions in leaving the house, school closures, social distancing measures and travel restrictions, In June the government announced the easing of restrictions but these are subject “local lockdowns” depending on the spread of the virus. It is too early to tell what impact coronavirus will have on the UK property market but it is likely to be significant given many sectors have had to pause trading and turnover has decreased leading to the UK economy shrinking.

Impact on the local economy

- 1.5 The pandemic has a significant impact on the UK economy, Figure 1-2 shows that since lockdown the UK economy (gross domestic product (GDP)) has shrunk for two consecutive quarters and has now entered a technical recession for the first time in 11-years.

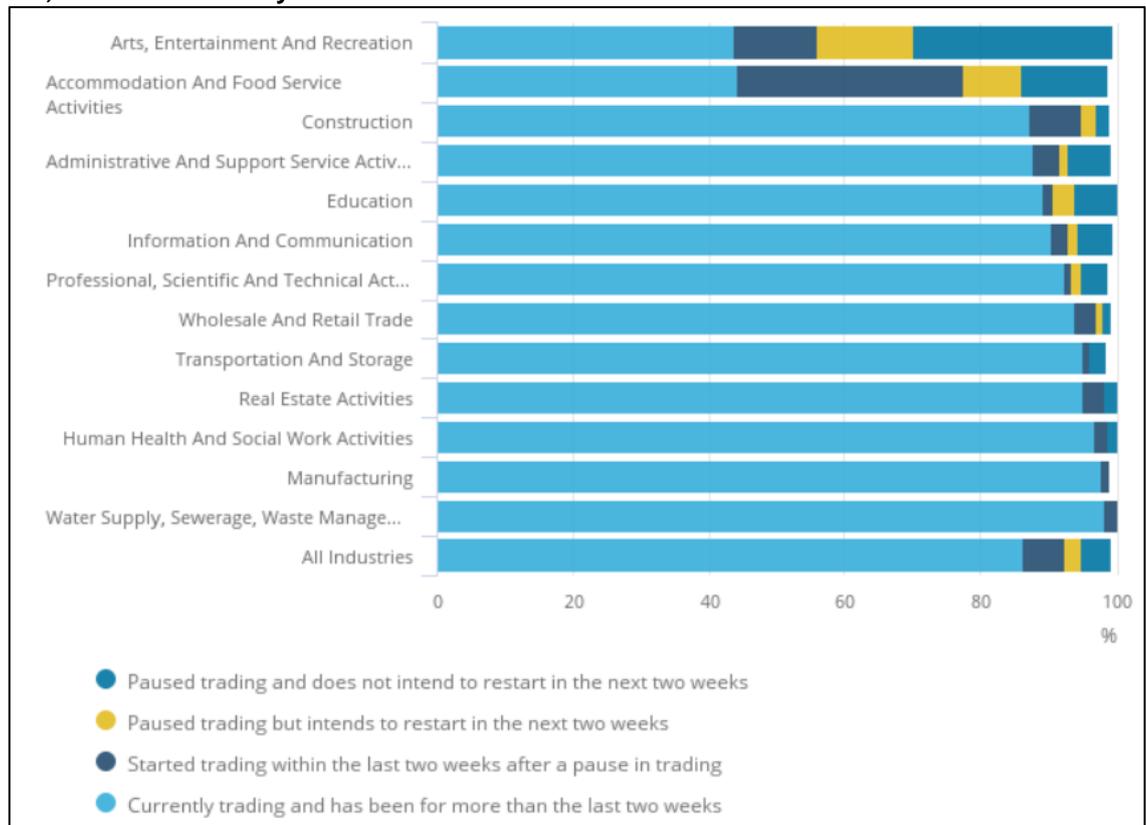
Figure 1-2 UK GDP growth, Quarter 1 (Jan to Mar) 2005 until Quarter 2 (Apr to June) 2020



Source: Office for National Statistics

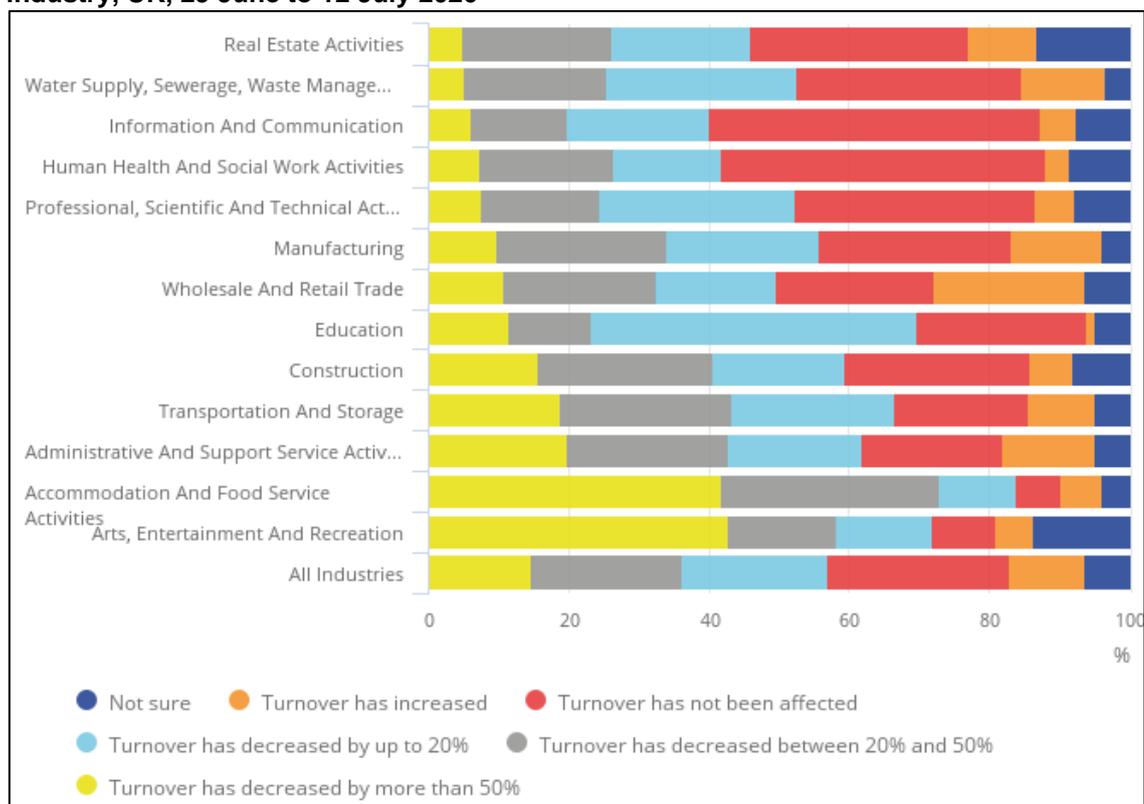
- 1.6 As shown in Figure 1-3, all sectors have been affected by the pandemic through pausing in trading. The arts and the service sectors, then followed by construction, have been particularly hard hit and continually being affected despite easing of restrictions. Due to the pandemic, a large percentage of businesses in all sectors are seeing a reduction in turnover (see Figure 1-4).

Figure 1-3 Percentage of businesses, current trading status, broken down by industry, UK, 29 June to 12 July 2020



Source: Office for National Statistics – Business Impact of Coronavirus (Covid-19) Survey

Figure 1-4 Effect on turnover, businesses who are continuing to trade, broken down by industry, UK, 29 June to 12 July 2020



Source: Office for National Statistics – Business Impact of Coronavirus (Covid-19) Survey

Impact on the property market

- 1.7 We are only now seeing some data on the impact coronavirus is having on the property market but not insignificant quantum to draw robust analysis - this is because the market has effectively been held in abeyance and with the time-lag of recording data the full impacts will not be known for a number of months to come.

Conclusion

- 1.8 Overall though there is increased uncertainty in the markets we are still able to take an assessment to inform our viability testing. But it is important to note that this market report will need to be periodically updated as more data becomes available and the impact of coronavirus on property markets becomes clearer.

2 Residential Market Assessment

- 2.1 For context, we firstly provide an overview of market conditions at a national, regional and local scale. We then analyse second-hand sales evidence and new-build development data in terms of achieved and asking prices to ensure the value assumptions and inputs adopted within the financial appraisals are robust.

Residential market overview

- 2.2 Since the global financial crisis, the residential market in England & Wales has generally been in a period of growth. The growth was initially seen in London, which responded to the quickest to the financial crisis. This growth then rippled out to the southeast and regions. But this growth in values has not been spread equally across England & Wales. Those regions that have performed well are located within an hour's commute to London, commonly known as the 'golden hour' for commuters. As London has faced affordability issues, those locations within an hour commute have become more attractive as they often better value money for those wishing to buy, or upsize.

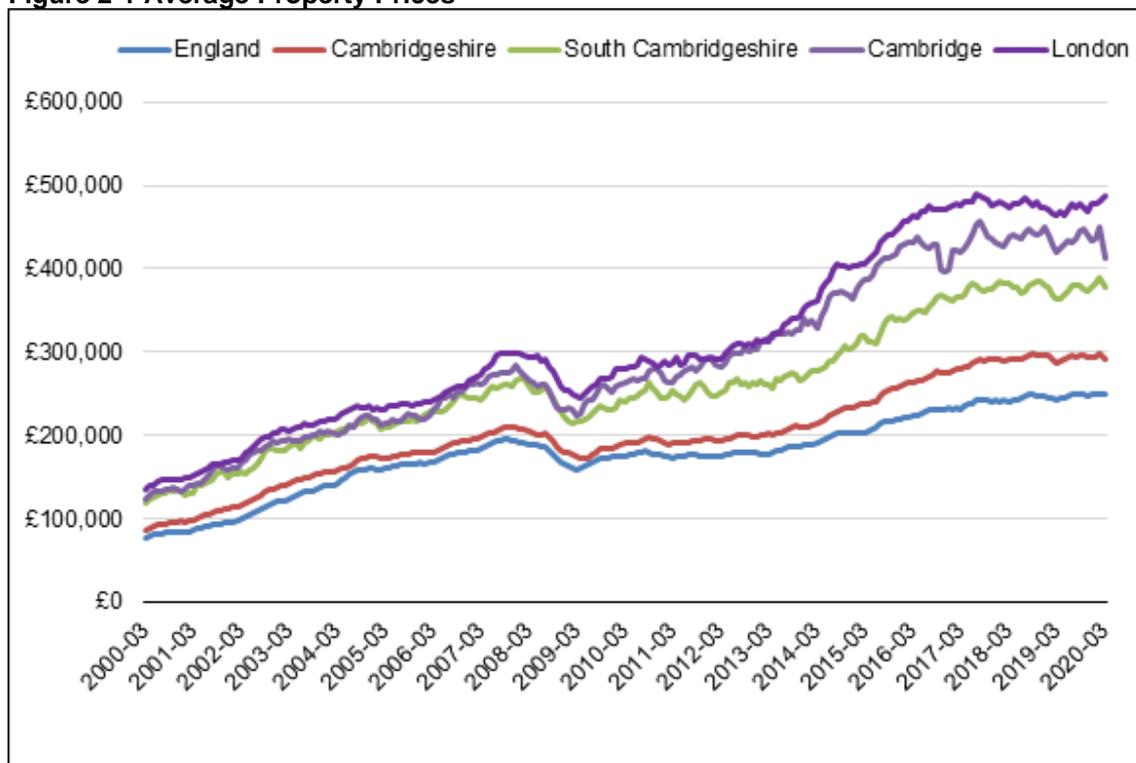
Greater Cambridge market overview

- 2.3 Drivers for the residential market in Cambridge include:
- the historic nature of the city not only makes the city attractive to live in but constrains development,
 - the global leading university attracts high-quality students and academics, and
 - the high concentration of global leading pharmaceuticals and tech companies create high-value jobs.
 - Greater Cambridge falls within the one-hour commute time to London which helps drive residential demand

Average property prices

- 2.4 The strong nature of the Greater Cambridge market is illustrated in the very high average values achieved. Figure 2-1 shows the average property prices (new and re-sales) recorded on the Land Registry. The analysis shows that average prices in the two local authority areas (South Cambridgeshire and Cambridge City) have constantly out-performed that of the wider county and England. With average prices for Cambridge much closer to that of London than the England average.
- 2.5 Land Registry report that current average prices in South Cambridgeshire are £378,000 and Cambridge £413,000. These values compare to £248,000 for England and £488,000 for London.

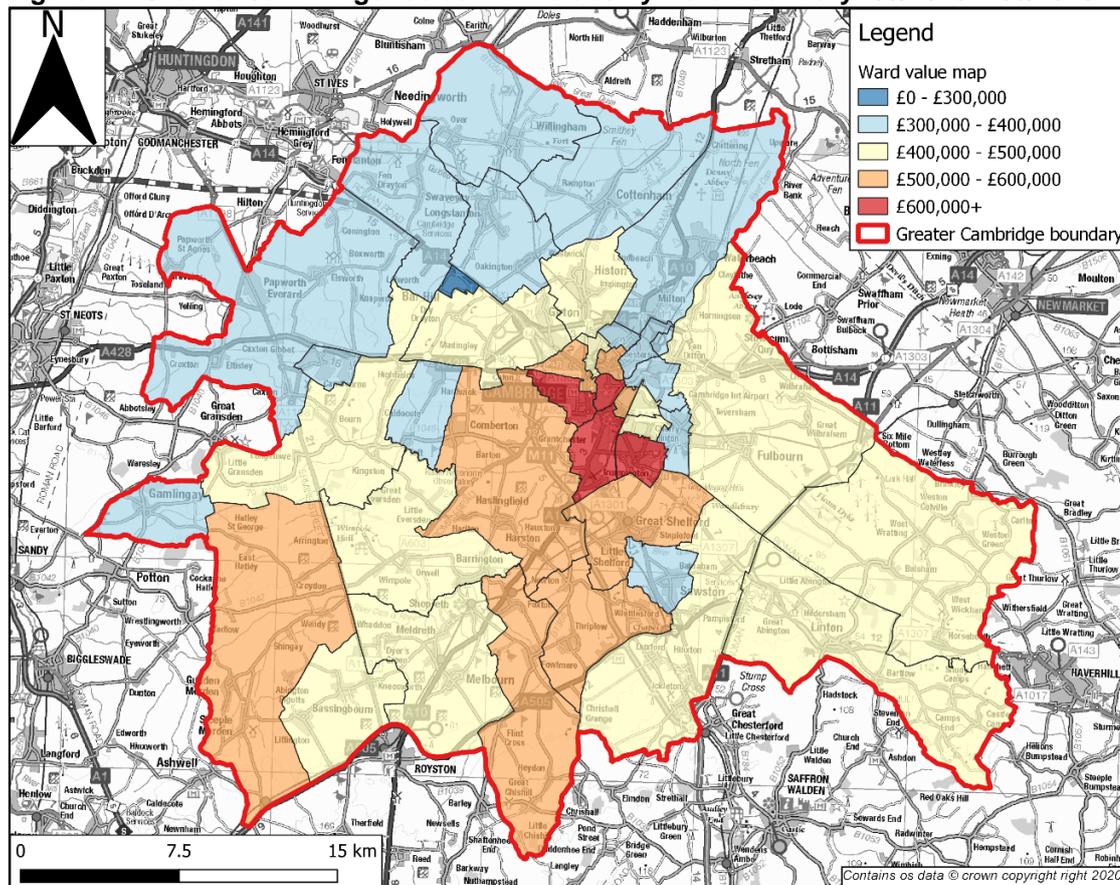
Figure 2-1 Average Property Prices



Source: Land Registry, accessed August 2020

- 2.6 Analysis has been undertaken of Land Registry data of sold prices for re-sales on a price per unit basis over the last two years across Greater Cambridge (Cambridge City & South Cambridgeshire).
- 2.7 The map in Figure 2-2 shows property prices grouped in value bands analysed against ward boundaries. The analysis shows higher values on a price per unit concentrated mainly in Cambridge City, with a corridor of medium value extending southward from Cambridge city to parts of Melbourn. There is also a clear band of lower value extending east and north from Milton. This is despite there being several new build developments in the lower value areas such as the Northstowe development by Taylor Wimpey/David Wilson and Trinity fields in Cambourne. Even though there is likely to be a 'new build premium' for these developments average prices are still significantly lower than central Cambridge.

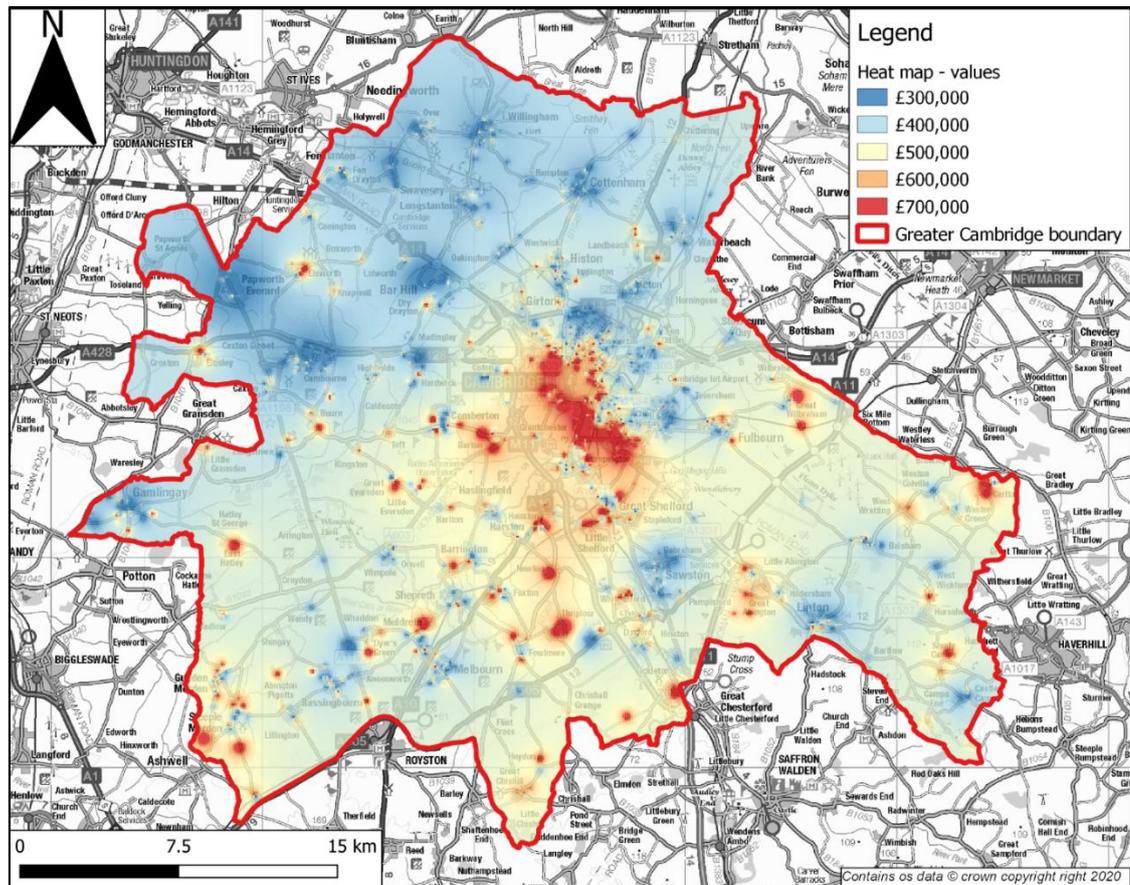
Figure 2-2 Greater Cambridge residential values by ward boundary: 05/2018 – 05/2020



Source: Land Registry Sale Value data, Basemap ArcGIS online, August 2020

2.8 The map in Figure 2-3 is the same Land Registry data expressed as a “heatmap.” The data is not “fixed” against ward boundary boundaries thus allowing for finer grain analysis of the areas of higher, mid and lower values. The red/orange colours represent higher average prices and the blue colours represent the lower values. The analysis shows an emphasis on the lower-value area to the north for Greater Cambridge, but also reveal ‘pockets’ of lower value in Cambridge city and the medium value areas to the south. There are further ‘pockets’ of lower-value areas dispersed across Greater Cambridge but the most significant concentration of lower value property prices is to the north and east of Cambridge. There are ‘pockets’ of higher value dispersed among the lower value areas to the north and east, these higher value areas are achieved in smaller villages in rural areas. The heatmap also further illustrates that, despite the volume of new developments in areas such as Cambourne and Northstowe, the prices being achieved are comparatively lower value. This is due to the very higher property prices being achieved in Cambridge and the fact that Cambourne and Northstowe are newer, less established settlements, with fewer amenities.

Figure 2-3 - Greater Cambridge residential values expressed as a heatmap: 05/2018 – 05/2020

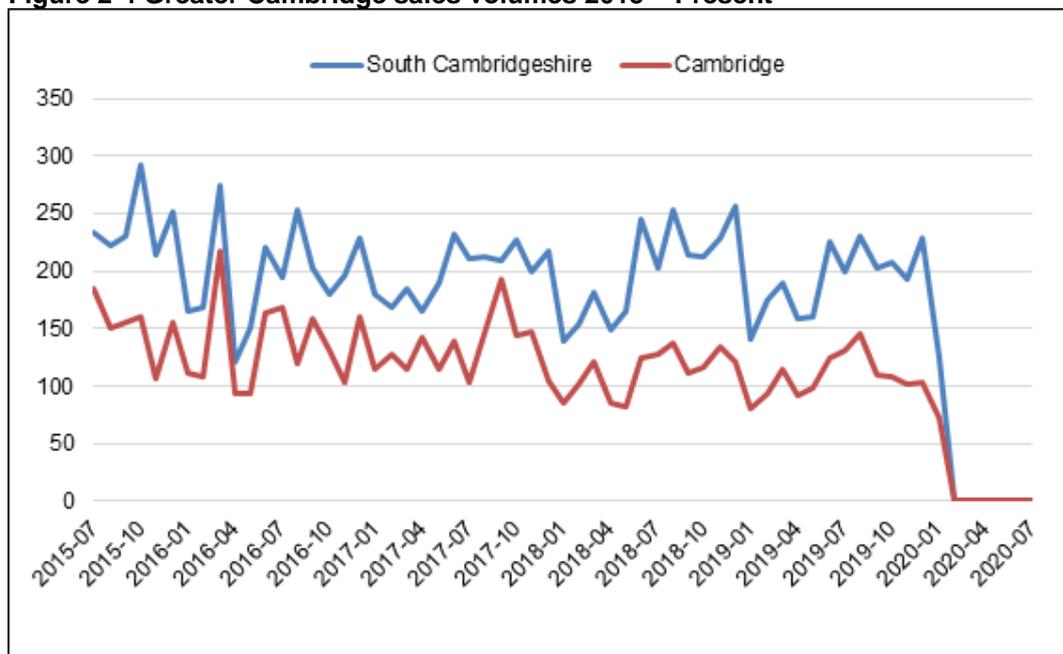


Source: Land Registry Sale Value data, Basemap ArcGIS online, August 2020

Impact of Covid-19 on values

2.9 As demonstrated in Figure 2-4, since the enforcement of lockdown sales have fallen significantly. As such, there is not a sufficient volume of reliable data at this current time to draw conclusions on the impact the virus is having on the residential market. As Land Registry is updated over the coming months, we may see sales being recorded during the lockdown period but as yet there is no data. To support the housing market, the government announced on the 08 July 2020 that from that date until 31 March 2021 there will be an SDLT (Stamp Duty Land Tax) holiday for properties up to the value of £500,000.

Figure 2-4 Greater Cambridge sales volumes 2015 – Present

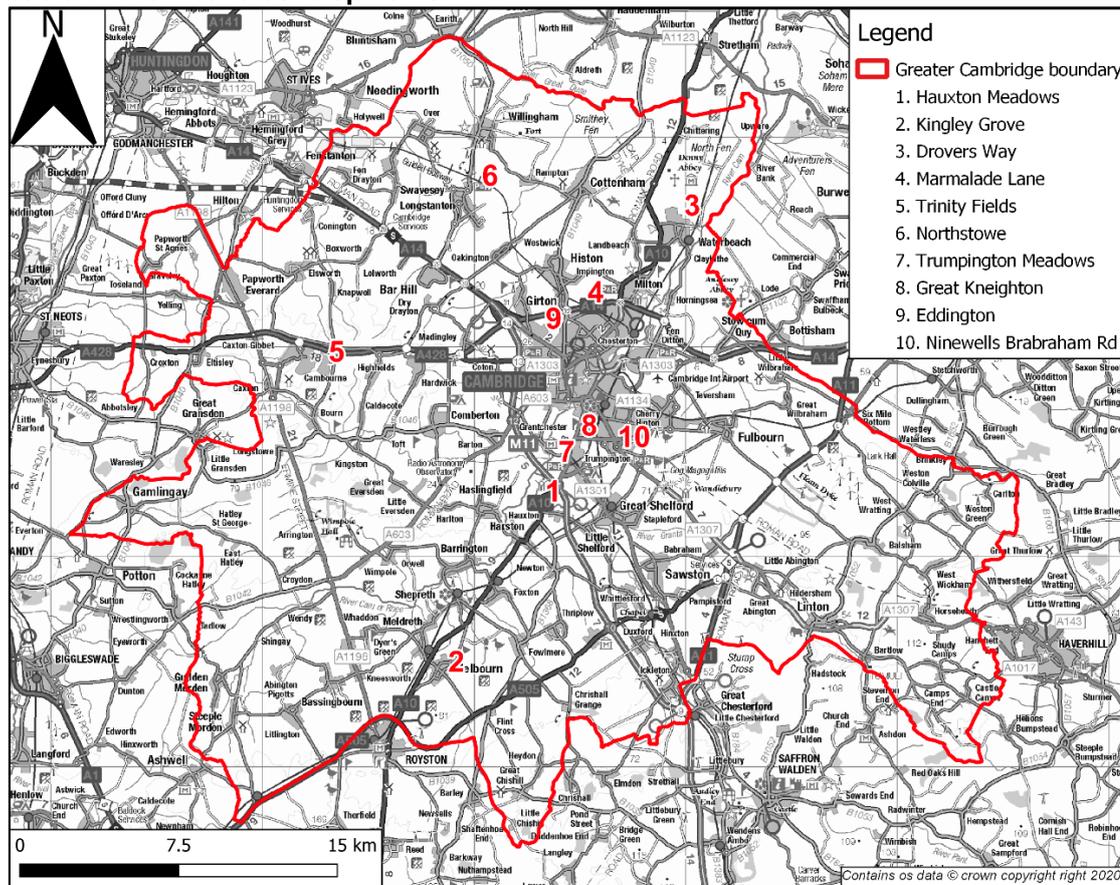


Source: Land Registry, accessed August 2020

New build sale prices

2.10 We now undertake a detailed analysis of new build sale values recorded on Land Registry. This data has been analysed on a £ psm basis through cross-referencing with EPC data. The EPC certificate data provides evidence of the unit sizes but does not record the number of bedrooms per property. Evidence of the number of beds has been taken from the Councils' planning portal, Rightmove, Zoopla and Prime Location; although, it has not been possible to reconcile all property types. Where the number of beds for the property is known, this has been recorded. Where the number of beds is not known this has been left 'blank' in our analysis. The tables of the new build sold prices summarise sale values for each typology and number of beds. We also display tables including all properties sold for the unit typology – this includes those where the number of beds is not known i.e. total sales per typology. The data covers approximately two years of sales (March 2018 – March 2020), the full analysis is contained in Appendix 1. Table 2-1 shows the spatial distribution of these new build developments.

Table 2-1 new build developments



Source: AspinallVerdi and Land Registry

South Cambridgeshire

2.11 Table 2-2 shows new build sold prices for Hauxton Meadows (south of Trumpington and M11), which is a Redrow development that has delivered a mix of 200 terraced, semi-detached and detached homes. Of the transactions identified, the majority were detached units (75%) which recorded large variation in values of £3,254 - £5,703 psm. Semi-detached properties have a lesser variance of between £4,245 - £4,303 psm.

Table 2-2 - Analysis of new build sold prices - Hauxton Meadows

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	9	109	£359,950	£479,950	£3,779	£5,538
Detached	45	136	£359,950	£827,950	£3,254	£5,703
Semi-Detached	6	122	£517,950	£524,950	£4,245	£4,303

Source: Land Registry, South Cambridgeshire District Council planning portal, accessed July 2020

- 2.12 Table 2-3 shows new build sold prices for the Kingley Grove development at Melbourn. It is a Hopkins Homes development that delivered 2, 3, 4 and 5-bedroom properties. The number of sales for both semi-detached and detached properties are similar, with £psm for the former being between £3,937 and £4,583, and for the latter between £3,066 and £4,344 psm.

Table 2-3 - Analysis of new build sold prices - Kingley Grove

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	4	85	£279,995	£455,000	£4,063	£4,667
Detached	11	180	£500,000	£859,995	£3,066	£4,344
Semi-Detached	10	81	£274,995	£419,995	£3,937	£4,583

Source: Land Registry, South Cambridgeshire District Council planning portal, accessed July 2020

- 2.13 Table 2-4 shows new build sold prices for the Drovers Way development in Waterbeach. It is a development by Bovis Homes, delivering 57 terraced, semi-detached and detached properties. The majority of sales have been detached units which range from £2,883 to £4,565 psm, whereas the semi-detached units achieved values range from £3,479 to £6,000 psm.

Table 2-4 - Analysis of new build sold prices - Drovers Way

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	11	92	£271,995	£612,500	£3,294	£4,667
Detached	38	126	£385,995	£699,995	£2,883	£4,565
Semi-Detached	24	79	£278,995	£431,000	£3,479	£6,000

Source: Land Registry, South Cambridgeshire District Council planning portal, accessed July 2020

- 2.14 Table 2-5 shows new build sold prices for Marmalade Lane, northeast of Cambridge. It is a cohousing development by K1 cohousing that delivered 42 1, 2, 3 and 4 bedroom properties. Marmalade Lane is seen as Cambridge's first cohousing community. The development is described as being designed to help residents get to know the neighbours easier and enjoy a sense of community. The majority of transactions have been flatted properties (70%) which range in value for £2,199 to £5,462 psm whereas £psm for terraced properties range from £2,970 to £3,863 psm.

Table 2-5 - Analysis of new build sold prices – Marmalade Lane

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	7	119	£382,100	£515,000	£2,970	£3,863
Flat	17	78	£257,849	£359,700	£2,199	£5,462

Source: Land Registry, South Cambridgeshire District Council planning portal, accessed July 2020

- 2.15 Table 2-6 shows new build sold prices for the Trinity Fields development in the settlement of Cambourne. The development consists of 2, 3, 4 & 5-bedroom houses and was built by Taylor Wimpey. £psm paid for terraced properties range from £2,724 to £4,068 whereas prices achieved for semi-detached properties were higher at £3,014 to £4,519 psm. Detached properties achieved the highest £psm variance of between £2,554 - £4,314 psm.

Table 2-6 - Analysis of new build sold prices - Trinity Fields

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	4	68	£201,600	£268,500	£2,724	£4,068
Detached	64	144	£290,000	£605,000	£2,554	£4,314
Semi-Detached	27	90	£274,995	£364,995	£3,014	£4,519
Flat	5	52	£200,000	£205,000	£3,846	£3,942

Source: Land Registry, South Cambridgeshire District Council planning portal, accessed July 2020

- 2.16 Table 2-7 shows new build sold prices for the Northstowe development. This development delivered a mix of 1, 2, 3, 4, & 5 bedroom properties and was built by Barratt Homes, David Wilson Homes and Taylor Wimpey. Prices achieved are generally lower than those from developments located in Cambridge City. Terraced properties achieved values from £2,963 to £4,508. £psm for semi-detached properties range from £2,744 to £4,524. The majority of sales were detached units which achieved values from £2,730 to £4,488 psm.

Table 2-7 - Analysis of new build sold prices – Northstowe

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	40	85	£250,000	£444,995	£2,963	£4,508
Detached	172	133	£262,995	£618,995	£2,730	£4,488
Semi-Detached	49	86	£274,995	£379,995	£2,744	£4,524
Flat	30	65	£199,995	£264,995	£3,125	£4,674

Source: Land Registry, South Cambridgeshire District Council planning portal, accessed July 2020

Cambridge City

- 2.17 Approximately 33% of recent new build sales in Greater Cambridge has occurred in Cambridge City. The majority of new build sales in the city have been in large new neighbourhoods such as Trumpington Meadows.
- 2.18 Table 2-8 shows new build sold prices for the Trumpington Meadows development, 3 miles from Cambridge city centre. The development consisted of 1, 2, 3, 4 and 5-bedroom flats and houses and was built by Barratt Homes. The prices recorded at Trumpington Meadows range from £3,080 - £6,948 psm with the majority being for flatted housing.

Table 2-8 - Analysis of new build sold prices (including number of beds) - Trumpington Meadows

Typology	No. of beds	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Flat	1	8	52	£299,995	£339,995	£5,263	£6,812
Flat	2	44	76	£350,000	£535,000	£4,756	£6,948
Flat	3	4	101	£449,995	£629,995	£4,091	£6,429
Flat	4	3	138	£425,000	£479,995	£3,080	£3,478
Detached	3	2	110	£599,995	£599,995	£5,455	£5,455
Detached	4	2	138	£599,995	£669,995	£4,348	£4,855
Detached	5	2	157	£719,995	£799,995	£4,645	£5,063
Semi Detached	4	10	135	£630,000	£779,995	£4,565	£5,923
Semi Detached	5	2	158	£740,000	£779,995	£4,684	£4,937
Terraced	3	1	107	£599,995	£599,995	£5,607	£5,607
Terraced	4	6	138	£599,995	£624,995	£4,348	£4,529

Source: Land Registry, Cambridge City Council planning portal, accessed July 2020

- 2.19 Table 2-9 shows new build sold prices for Great Kneighton, Cambridge. It is a new neighbourhood development by Countryside and Bovis Homes with a mix of 1, 2, 3,4 - and 5-bedroom properties. The data shows that the majority of units recently sold are flats and terraced. In contrast, semi-detached properties represent the smallest number of sales. £psm paid for flatted properties has the widest range while semi-detached has the narrowest range. Also, it is noticeable that semi-detached properties have the highest average unit size which is not typically seen in South Cambridgeshire but is common across Cambridge City. The scheme also has some of the highest achieved pieces in greater Cambridge with max sold prices for terraced and detached properties at £1,500,000 and £1,328,250 respectively.

Table 2-9 - Analysis of new build sold prices - Great Kneighton

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	61	168	£550,000	£1,500,000	£3,737	£5,280
Detached	25	205	£589,995	£1,328,250	£3,779	£5,263
Semi Detached	15	229	£675,000	£1,250,000	£3,597	£4,966
Flat	46	79	£213,000	£850,000	£3,550	£7,051

Source: Land Registry, Cambridge City Council planning portal, accessed July 2020

- 2.20 Table 2-10 shows the new build sold prices for Eddington, Cambridge. It is a new neighbourhood located in the northeast of the city centre. It is a development by The University of Cambridge which will deliver 3,000 Studio, 1, 2, 3, 4 and 5-bedroom properties. The data in Table 2-10 shows that the units sold at the scheme are comparable in size to the units at the other developments in the city. The scheme also has some of the highest max £psm prices in Cambridge City.

Table 2-10 - Analysis of new build sold prices - Eddington, Cambridge

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	7	165	£589,995	£1,099,950	£4,307	£6,522
Detached	12	124	£574,995	£1,020,000	£4,380	£6,348
Semi Detached	3	137	£599,995	£689,995	£4,380	£5,036
Flat	47	70	£295,000	£855,000	£4,654	£8,021

Source: Land Registry, Cambridge City Council planning portal, accessed July 2020

- 2.21 Table 2-11 shows new build sold prices for Ninewells. It is Hill Group development which delivered a mix of 1, 2, 4 and 5-bed properties. £psm paid for terraced, detached and semi-detached units are between £5,000 psm and £6,284. Flatted properties achieved the largest range of £psm between £4,878 - £8,182. Average sizes for all typologies are generally within the range of the previous schemes identified.

Table 2-11 - Analysis of new build sold prices – Ninewells Brabraham Road

Typology	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Terraced	20	182	£675,000	£1,250,000	£4,234	£6,284
Detached	12	176	£690,000	£1,250,000	£4,481	£6,092
Semi Detached	3	209	£905,000	£1,235,000	£4,750	£5,000
Flat	11	69	£349,950	£526,350	£4,878	£8,182

Source: Land Registry, Cambridge City Council planning portal, accessed July 2020

New build quoting prices

- 2.22 Comparable analysis of new build available properties has been undertaken to gain an understanding of the location of new build schemes and their quoting prices – this is set out in Table 2-12. There is a large volume of new build housing schemes currently on the market.
- 2.23 The analysis of quoting prices shows that new build units range from 1 bed flats to 5 bed detached houses. Most of the 1-bed flats are being advertised in Cambridge city with prices ranging between £195,000 - £380,000. 2-bed flats and houses are more prevalent across the entire area with prices ranging between £235,000 - £689,950 with the lower priced flat being located on a small 8-unit scheme in Meldreth. There are other types of 2 bed properties including terraced, semidetached and detached across Greater Cambridge. Prices for these range between £274,000 and £420,000. 3-bedroom properties also differ in type with flats, semidetached, terraced and bungalows all being marketed. Prices for these range between £325,000 and £799,950. The 4-bed properties range in price between £400,000 and £1,150,000, and 5-bed properties range between £465,000 and £975,000. The large range of data is an account of a large amount of development in Greater Cambridge. With activity from volume housebuilders as well as smaller local and regional developers.

Table 2-12 - New build quoting prices

Address	Developer	Typology	Quoting prices
Cambridge City			
Great Kneighton, Cambridge	Countryside, Bovis Homes, Crest Nicholson	-	1 bed flat: £325,000
			2 bed flat: £375,000 - £419,950
			3 bedroom flat: £499,950 – 649,950
			5 bedroom detached: £875,000 - £950,000
Trumpington Meadows, Cambridge	Barratt Homes	-	1 bed flat: £329,995
			2 bed flat: £382,995 - £554,995
			3 bedroom detached: £565,995
			4 bed detached: £559,995 - £570,995
			5 bed semi: £759,995
Ironworks, CB1	Hill Residential	Development of 118 dwellings – mix of; studio, 1, 2, 3 and 4- bedroom properties	1 bed flat: £299,950 - £344,950
			2 bed flat: £439,950 - £444,950
			3 bed semi: £519,995
			4 bed detached: £580,995 - £595,995

Address	Developer	Typology	Quoting prices
Darwin Green, Huntingdon Road, Cambridge	Barratt Homes	Development of 1, 2, 3 and 4 bedroom properties	1 bed flat: £319,995 2 bed flat: £381,995 - £394,995 2 bed terraced: £619,950 4 bed semi: £749,950
Athena, Eddington Avenue, Cambridge	Hill residential	Development of 249 dwellings – mix of studio, 1, 2, 3, 4 and 5- bedroom properties	Studio: £319,950 1 bed flat: £339,950 - £359,950 2 bed flat: £444,950 - £689,950 3 bedroom terraced: £699,950 - £799,950 4 bed terraced: £899,950 - £1,149,950 5 bed semi: £759,995
Ellesmere Road, Cambridge	Trafalgar Homes	Development of 8 x 1 bedroom properties	1 bed flat: £195,000 - £225,000
Lovell Lodge, Milton Road, Cambridge	-	Development of 14 dwellings – mix of studio, 1 and 2 bedroom properties	Studio: £250,000 1 bed flat: £300,000 - £320,000 2 bed flat: £475,000
Coldhams Place, Cambridge	-	Development of 14 x 3 bedroom properties	3 bedroom terraced: £495,000 - £585,000
Station Square, Cambridge	Weston homes	Development of 89 dwellings – mix of 1 and 2 bedroom properties	1 bed flat: £380,000 2 bed flat: £665,000 - £695,000
Marleigh, Newmarket Road, Cambridge	Marshall & Hill residential	Development of 1,300 dwellings – mix of; 1, 2, 3, 4 and 5 beds	1 bed flat: £284,950 - £294,950 2 bed flat: £369,950 - £377,950 2 bed coach: £424,950 - £434,950 3 bed semi: £524,950 4 bed semi: £639,950
South Cambridgeshire			
Trinity Fields, Brace Dein, Upper Cambourne	Taylor Wimpey		3 bed semi: £360,000 - £524,950 4 bed detached: £540,000

Address	Developer	Typology	Quoting prices
Bloor Homes At Swavesey, Off Fen Drayton Road, Swavesey	Bloor Homes		2 bed semi: £297,000 - £377,950 3 bed bungalow: £415,000 4 bed detached: £430,000 - £455,000
Meridian Fields, Hardwick, Cambridge	Hill Residential		2 bed semi: £369,950 - 3 bed semi: £434,950 - £499,950 4 bed detached: £529,950
The Birdlings, West Street, Comberton	Beechwood Estates & Development	Development of 90 dwellings	4 bed detached: £660,000 5 bed detached: £975,000
Croft End, Hurdleditch Road, Cambridgeshire	Croudace Homes		2 bed detached: £375,000 - £420,000 3 bed semi: £425,000 - £450,000 3 bed detached: £500,000 4 bed detached: £575,000 - £750,000
Sycamore View, Westacre, Meldreth,	Bushmead Homes		2 bed detached: £367,500 2 bed semi: £351,750 3 bed detached: £446,250 4 bed detached: £575,000 - £682,500
Victoria Place, Meldreth		Comprising 8 dwellings mix of 1 and 2 bed apartments	1 bed flat: £200,000 2 bed flat: £235,000
Victoria Heights, Victoria Way, Melbourn	Granary Developments		3 bed detached: £600,000 4 bed detached: £750,000 - £1,150,000
Kingley Grove, Melbourn	Hopkins Homes		2 bed detached: £300,000 3 bed semi: £420,000 - £490,000 4 bed detached: £540,000 - £680,000 5 bed detached: £835,000 - £870,000

Address	Developer	Typology	Quoting prices
The Grove, Rockmill End, Willingham, Cambridgeshire	Kier Living	Comprising 2 bedroom bungalows and 2, 3, 4 & 5 bedroom houses,	2 bed semi: £274,995 3 bed detached: £357,995 4 bed detached: £474,995 - £479,995
The Boulevards, Station Road, Longstanton, Northstowe	Linden Homes	Comprising 2, 3, 4, and 5 bedroom houses	2 bed terraced: £280,000 - £295,00 3 bed terraced: £325,000 - £350,000 3 bed semi: £340,000 4 bed semi: £365,000 - £440,000
Varsity Grange Pathfinder Way Northstowe	Taylor Wimpey	Comprising 3, 4 & 5 bedroom homes	4 bed detached: £455,000 - £480,000
Winstone at Northstowe, Crabtree Road,	David Wilson homes	Comprising 2, 3, 4 and 5 bedroom homes	2 bed flat: £252,495 3 bed terraced: £332,995 - £385,995 3 bed semi: £374,995 - £413,995 4 bed detached: £413,995 - £581,995 5 bed detached: £624,995
Bower Place, Oakington Road, Cottenham	Bellway Homes	50 dwellings - development of 3, 4 and 5- bedroom homes	2 bed terraced: £300,000 3 bed semi: £347,000 - £375,000 3 bed detached: £383,000 - £385,000 4 bed semi: £400,000 - £430,995 4 bed detached: £415,000 - £614,995 5 bed detached: £465,000 - £749,995
Burlington Place,, Station Road, Foxton	Hill Residential	Mix of 2, 3 and 4 bed homes	2 bed semi: £399,950 3 bed semi: £479,950 4 bed detached: £599,950
Station Road, Histon	-		1 bed flat: £269,995 - £279,995

Address	Developer	Typology	Quoting prices
The Orchards, Linton Road, Great Abington	Hill Residential	45 dwellings - mix of new 2, 3, 4 and 5 bed houses and bungalow	4 bed bungalow: £599,950 4 bed bungalow: £699,950
Farriers Yard, Balsham, Cambridge	Hill Residential	Farriers Yard mix of 3, 4 and 5 beds homes.	4 bed semi: £549,950 - £579,950 5 bed detached: £750,000

Source: Developer websites, Rightmove, accessed August 2020, AspinallVerdi

Residential agent consultation

2.24 Telephone consultations have been undertaken with local estates agents active across the Greater Cambridge area, to supplement the desk-based research. The telephone consultations were undertaken in August 2020. We have chosen to target agents based in Cambridge, Cottenham and Cambourne due to their status as the main settlements in Greater Cambridge. Below are the summarised responses:

- The Stamp duty holiday announced by the government as part of its Covid-19 economic boosting measure has helped to keep the market stable.
- Cambridge city is the highest value area by a significant margin due to its employment offer and the presence of the University of Cambridge. House Prices have been increasing in recent years and the market is healthy despite the Covid-19 pandemic, however, it will take a few more months for the full effects of the pandemic to be realised
- The Orchard park/ Arbury areas are considered to be lower value areas.
- Especially in Cambridge, the Covid-19 pandemic has led to properties with gardens and other outdoor space become more desirable
- Chesterton and Waterbeach are increasingly more desirable with the market being healthy in these areas. Demand is coming from mostly young families.

2.25 Agents gave a broad indication of what values they could achieve for new build properties across the Greater Cambridge area – see Table 2-13. In some cases, these bandings are large as there is a significant variation in specification over the area. Some specific developments may exceed the higher banding but the bulk of new development is within the range.

Table 2-13 - Proposed sale prices across Greater Cambridge

Address	Typology	Agents quoting unit prices
Cambridge	1 bed flatted	£200,000-£350,000
	2 bed flatted	£375,000-£550,000

	3 bed flat	£430,000-£600,000
	3 bed semi-detached	£450,000-£650,000
	3 bed detached	£475,000-£700,000
	4 bed detached	£600,000+
	5 bed detached	£750,000+
Cambourne	2 bed semi-detached	£300,000-£400,000
	3 bed semi-detached	£400,000-£500,000
	4 bed detached	£520,000+
Cottenham	2 bed semi-detached	£250,000+
	3 bed semi-detached	£325,000+
	3 bed detached	£350,000+
	4 bed semi detached	£400,000+
	4 bed detached	£420,000+

Source: Residential agents Greater Cambridge, August 2020

Residential market conclusions

- 2.26 The values to be adopted in our testing are set out in Table 2-14. We have decided to test three distinct value zones as shown in Figure 2-5. The NECAAP will fall in the mid-value zone analysis. These values will be subject to review once more details on the type of proposed developments are known.

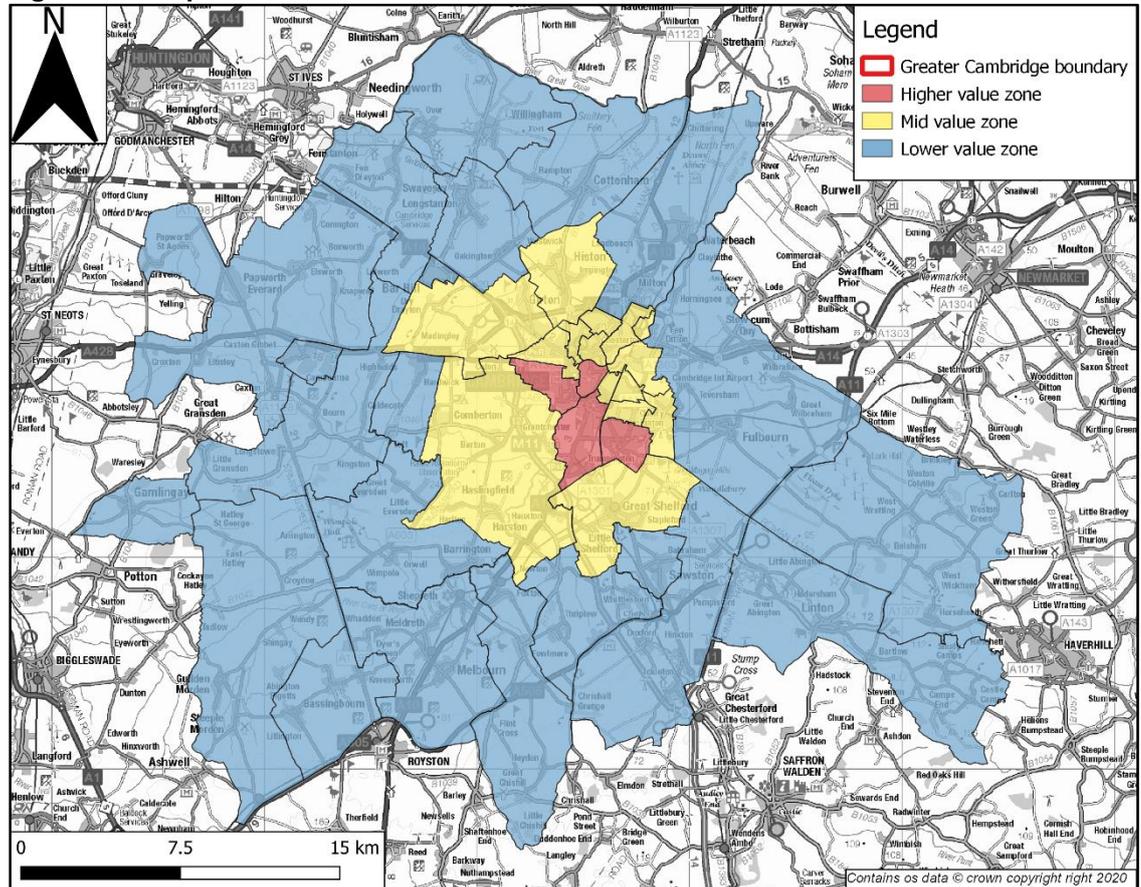
Table 2-14 - Proposed housing development sales prices

Typology	Unit Size sqm	Unit Price	£psm
Higher value zone			
Studio	40	£280,000	£7,000
1-bed flat	50	£330,000	£6,600
2-bed flat	75	£455,000	£6,067
3-bed flat	86	£500,000	£5,814
Mid value zone			
Studio	40	£265,000	£6,625
1-bed flat	50	£300,000	£6,000
2-bed flat	70	£365,000	£5,214
3-bed flat	86	£410,000	£4,767
4-bed flat	99	£450,000	£4,545
2-bed house	75	£400,000	£5,333
3-bed house	97	£500,000	£5,155

Typology	Unit Size sqm	Unit Price	£psm
4-bed house	150	£670,000	£4,467
Lower value zone			
1-bed flat	50	£250,000	£5,000
2-bed flat	61	£300,000	£4,918
2-bed house	75	£350,000	£4,667
3-bed house	97	£425,000	£4,381
4-bed house	150	£550,000	£3,667
5-bed house	200	£700,000	£3,500

Source: AspinallVerdi, 2020

Figure 2-5 Proposed value zones



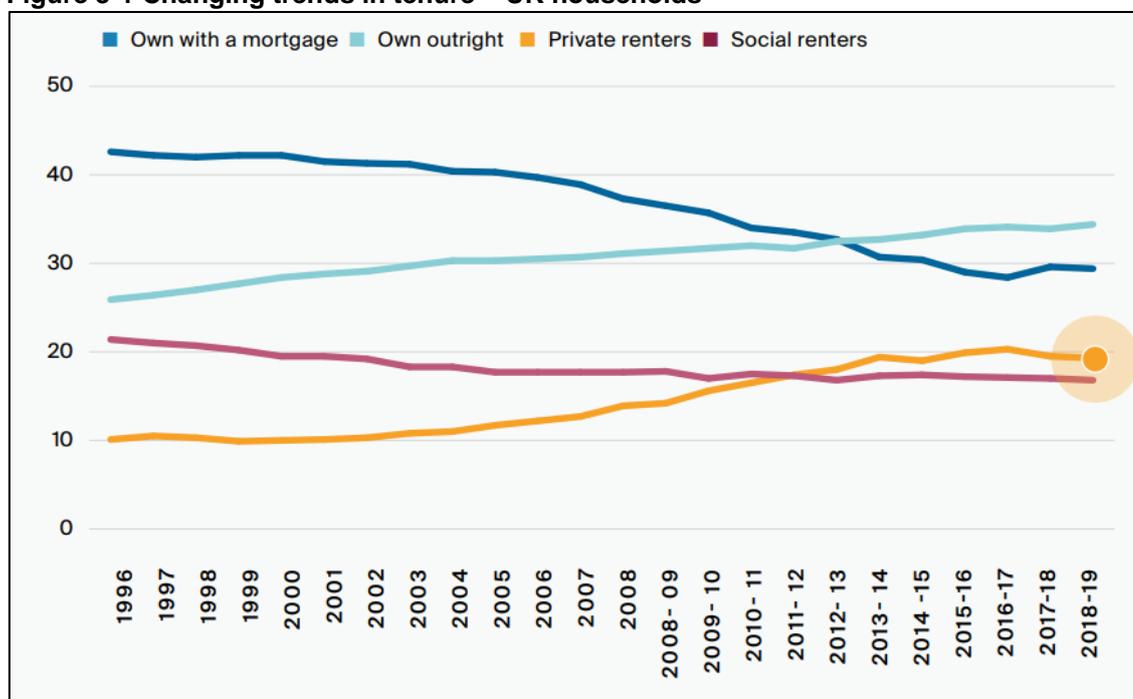
Source: AspinallVerdi, 2020

3 Build to Rent market assessment

Introduction

- 3.1 As households have been priced out of being able to purchase homes, residents have been forced into the private rental sector. In a bid to raise accommodation standards and reduce the number of rogue landlords the Government has been seeking to encourage investors/developers to deliver Build to Rent (BTR) housing. The Government in 2012 launched the BTR Fund to deliver schemes by offering finance/grants. Many benefits have been identified in relation to the BTR model, such as the provision of higher quality management other than an individual private landlord; tenants are offered longer tenancies on more favourable terms and higher-standard amenities are often provided, such as on-site gyms, communal lounges and cinema rooms.
- 3.2 Savills report that since 2013 the sector has expanded rapidly, with over 30,000 homes completed and a further 110,000 planned which are to be built, let and managed by professional investors as homes to rent. Investment in BTR totalled £2.6bn in 2018 – an 11% increase from 2017 and the highest level since 2014.¹ This trend is supported by the changing trends in the tenure of households. Figure 3-1 shows that the amount of private rents has increased in the last 10 years while the number of property owners with a mortgage has steadily decreased.

Figure 3-1 Changing trends in tenure – UK households



Source: Knight Frank and ONS, 2020

¹ Savills, 2019. Build to Rent

- 3.3 The institutional investment market has continued to be attracted to the BTR sector in the UK. Both domestic and international investors alike have deployed capital to expanding their footprint in the market. Lead by North America, global investors are seeking a stable cash flow in uncertain times. Where we have seen commercial occupiers struggling to pay rent, from March to August 2020 the average rent collection rate for institutional BTR schemes was 95.2%.² International investment in the sector is set to grow as development volumes increase throughout the country.³ As the commercial market continues to weaken with retail leading the way, BTR is ever becoming an attractive investment even though yields are poorer than from traditional commercial property investments.
- 3.4 Not only have we seen an increase in the number of BTR schemes, the scale of new development, and subsequent investments, has continued to grow. At present, the size of the average of completed schemes is 212 units. When we consider homes that are under construction this increases to 264 units, this increases further to 316 units for schemes that have planning permission granted. Though ‘mega’ schemes, of over 500 units, are still in the minority this part of the sectors is contributing to growth.⁴

Market rents overview

- 3.5 The UK rental market has performed inconsistently over the past few years. There has been a broad slowdown in the UK annual growth rate in the period between 2016 – 2018⁵, however recent reports are generally showing growth in rental prices across the country. The Office of National Statistics⁶ reports that:
- Private rental prices paid by tenants in the UK rose by 1.3% in the 12 months to October 2019, unchanged since May 2019.
 - In England, private rental prices grew by 1.4% in the 12 months to October 2019.
 - London private rental prices rose by 0.9% in the 12 months to October 2019.
- 3.6 The October 2019 RICS Residential Market Survey reported a slight acceleration in tenant demand, however there is a simultaneous decline in new landlord instructions and thus increasingly constrained supply. It was projected that every UK region/county was expected to see an increase in rents over the coming three months.⁷ Historically residential rents in the UK have continued to grow even when borrowing rates for mortgages are at historic lows. Figure 3-2 shows that since 2012 rents in Great Britain (excluding London) have grown between 1 – 2.3% per annum.

² Knight Frank & Homeviews, 2020, Multi Housing

³ Ibid

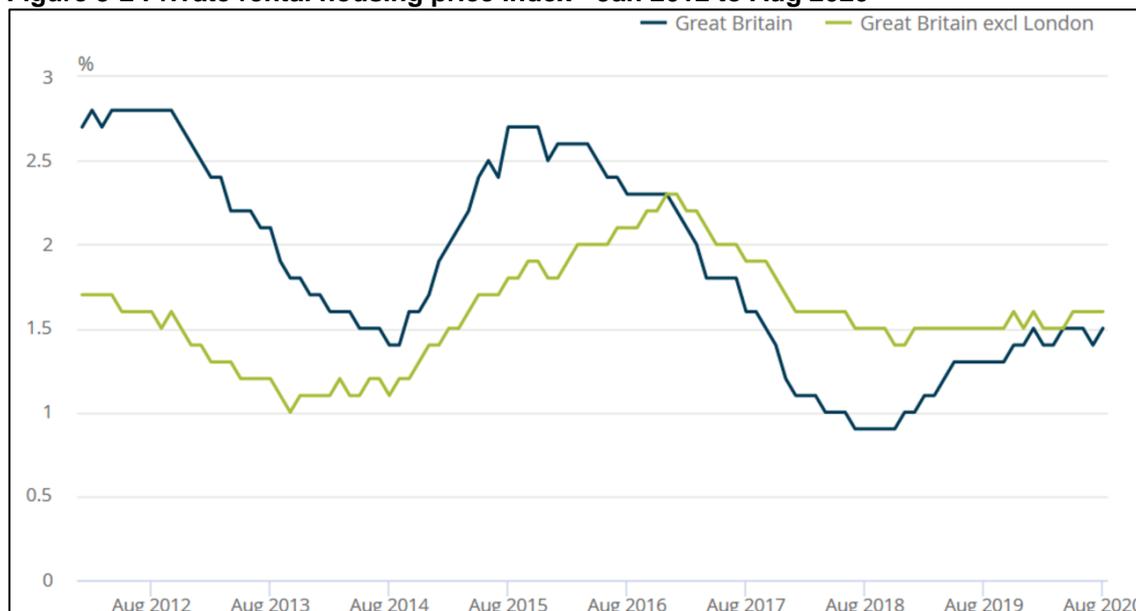
⁴ Ibid

⁵ ONS, 2019. Index of Private Housing Rental Prices.

⁶ Office for National Statistics, 2019. Index of Private Housing Rental Prices, UK. October 2019.

⁷ RICS, 2019. October 2019: UK Residential Market Survey

Figure 3-2 Private rental housing price index - Jan 2012 to Aug 2020



Source: ONS, 2020

- 3.7 The ONS data in Table 3-1 shows that rents in both South Cambridgeshire and Cambridge City are considerably higher than national and regional medians. This is for a number of reasons, including higher residential sale values in the area, higher average wages, proximity to London. In addition Cambridge City has high demand for residential rental accommodation created by the significant number of students studying at the University of Cambridge.

Table 3-1 Median all monthly rents April 2019 to March 2020

	England	East England	South Cambs	Cambridge City
Rent	£700 pcm	£795 pcm	£950 pcm	£1,200 pcm
% more/less than National	n/a	+13.6%	+36.0%	+71.4%
% more/less than South East	-11.9%	n/a	+19.5%	+51.0%

Source: ONS, 2020

Greater Cambridge BTR market

Achieved rents

- 3.8 Table 3-2 and Table 3-3 shows achieved monthly rents for new and second-hand properties across Greater Cambridge from April 2019 to March 2020.

Table 3-2 - South Cambridgeshire District Achieved Monthly Rents

Type	Sample	Mean	Lower Quartile	Median	Upper Quartile
Studio	10	£666	£625	£700	£720

1-Bed	170	£789	£725	£795	£850
2-Bed	540	£928	£850	£900	£1,000
3-Bed	560	£1,078	£950	£1,025	£1,180
4 or more Bed	220	£1,537	£1,250	£1,490	£1,700

Source: ONS, accessed August 2020.

Table 3-3 - Cambridge City Achieved Monthly Rents

Type	Sample	Mean	Lower Quartile	Median	Upper Quartile
Studio	90	£790	£725	£755	£850
1-Bed	570	£1,008	£850	£975	£1,150
2-Bed	920	£1,255	£1,075	£1,219	£1,400
3-Bed	460	£1,408	£1,200	£1,350	£1,550
4 or more Bed	220	£2,048	£1,630	£1,900	£2,300

Source: ONS, accessed August 2020.

- 3.9 The data shows that the difference in median monthly rents increases in conjunction with the size of the property. For example, the difference in median rents between a studio and 1-bedroom flat is £125 pcm, whereas the difference between 2- and 3-bedroom rents is more pronounced at £320 pcm. The data also further illustrates the significant differences between prices in Cambridge City and South Cambridgeshire, with 2 bed achieved rents in Cambridge city being 35% greater than those in South Cambridgeshire.

Asking rents

- 3.10 Due to a lack of BTR development, we have not been able to find any evidence of asking rents in Greater Cambridge. We have therefore looked for flatted accommodation with a specification to BTR properties. These are all exclusively located in and around Cambridge City Centre. Table 3-4 shows the current rents pcm for studio flats across Cambridge City. We have not included the number of studios being marketed for higher rents up to £1,400 per month. These units target students rather than the general market. This market is dealt with in a separate section.
- 3.11 Table 3-4 shows there are few relevant studios in Cambridge City. Rents for the most modern spaces are around £950 pcm. We would assume that a build to rent product would achieve a premium over these values as they would include communal space and other amenities such as a gym etc.

Table 3-4 – Studio rental listings

Address	Size	Quoting rent	Comments
Addenbrookes Road	n/a	£950 pcm	Unfurnished

Address	Size	Quoting rent	Comments
East Road	n/a	£950 pcm	Furnished. Shared courtyard garden, roof terrace, laundry room and integral secure bike storage area
Greengates Court, 149 Histon Road, Cambridge	n/a	£925 pcm	Unfurnished. Balcony and communal bike storage.

Source: Rightmove, accessed October 2020.

- 3.12 Table 3-5 shows rents for 1 bed spaces vary considerably between £1,950 pcm and £1,250 pcm. The highest rents include all bills and are located in central areas. Some of the comparables include facilities that we would expect to see in build to rent properties i.e. a gym and communal areas.

Table 3-5 – 1 bed rental listings

Address	Size	Quoting rent	Comments
Flat 2, Victoria Avenue, Cambridge, Cambridgeshire, CB4	n/a	£1,950 pcm	Includes all bills and council tax. Flat is available on short- and long-term lease.
Newton Court, Kingsley Walk, Cambridge	51 sqm	£1,450 pcm	Includes use of gym, concierge service. Includes heating bills
The Oak Building, Rudduck Way, Eddington, Cambridge	n/a	£1,300 pcm £1,275 pcm £1,250 pcm	New Build, unfurnished

Source: Rightmove, accessed October 2020

- 3.13 Table 3-6 shows that rents for 2 bed flats vary considerably, ranging between £2,750 pcm and £1,500 pcm. highest rents include all bills and are located in central areas. Some of the comparables include facilities that we would expect to see in build to rent properties i.e. a gym and communal areas.

Table 3-6 – 2 bed rental listings

Address	Size	Quoting rent	Comments
Mill Park, Cambridge, CB1	n/a	£2,750 pcm	Furnished, Penthouse with parking. Bills not included
Flamsteed Close, Cambridge, CB1	n/a	£2,600 pcm	New build. Furnished and includes all bills and parking
The Belvedere, Homerton Street, Cambridge, CB2	119 sqm n/a	£2,200 pcm £1,950 pcm	Furnished. Includes gym complex with swimming pool. Development serviced by porters.

Address	Size	Quoting rent	Comments
Marlowe House, Kingsley Walk, Cambridge, CB5	77 sqm	£1,950 pcm	Furnished. Use of onsite gym. Secure parking and concierge service.
Meade House, Mill Park, Cambridge	n/a	£1,750 pcm	Furnished. Includes parking.
Green Lane, Trumpington	n/a	£1,665 pcm	Furnished. Includes parking.
The Oak Building, Rudduck Way, Cambridge, Cambridgeshire	79 sqm	£1,500 pcm	New build. Furnished.

Source: Rightmove, accessed October 2020

- 3.14 There is less evidence available for 3 bed properties as these are not as common in new build flatted developments. Table 3-7 shows rents for 3 bed flats are around £2,750 pcm. All listings are in central Cambridge. Some of the comparables include facilities that we would expect to see in build to rent properties i.e. a gym and communal areas.

Table 3-7 – 3 bed rental listings

Address	Size	Quoting rent	Comments
The Belvedere, Homerton Street, Cambridge, CB2	n/a	£2,750 pcm	Unfurnished. Includes gym complex with swimming pool. Development serviced by porters.
Keynes House, Kingsley Walk, Cambridge	n/a	£2,750 pcm	Unfurnished. Includes car parking and bike storage, on site gym and concierge
Parkside Place, Parkside, Cambridge, CB1	118 sqm	£2,700 psm	Part furnished. Includes car parking.

Source: Rightmove, accessed October 2020

- 3.15 There is no comparable evidence of new build 4 bed units currently being advertised on Rightmove.
- 3.16 Current asking rents for flatted accommodation with specifications akin to build to rent properties range from £1,250 - £2,450 pcm for a 1 bed and £1,995 - £3,300 for a 2 bed. The asking rents shown in Table 3-4 are higher per unit type than the median rents recorded from the VOA data for Cambridge City in Table 3-3. This suggests that rental prices have grown since April 2019; a trend which is seemingly supported in the latest RICS residential market report. On the whole, rental values are considered more transient than sales prices and are susceptible to more immediate fluctuation. The increases in rental values since the time of the VOA data period is therefore considered likely.

BTR Yields

- 3.17 We are aware that Brookgate has revealed plans for 1,000 build to rent units but it is too early in the process to find details on the yield. We have therefore reviewed evidence from market reports and forecasts for build to rent yields - see Table 3-8

Table 3-8 - Build to Rent Yields

Source	Net Yield
Bidwells ⁸	3.14%
Knight Frank ⁹	4.00% - 4.25%
CBRE ¹⁰	3.75%
KentReliance ¹¹	4.1%

Sources: Knight Frank, Bidwells, KentReliance & CBRE, accessed August 2020

Conclusion

- 3.18 Based on the above evidence we have that there are two sets of values adopted for BTR for the higher and mid value zones, these are as follows:

Table 3-9 Build to rent values

Typology	Unit Size sqm	Rent pcm	Rent pa
Higher value zone			
Studio	40	£1,200	£14,400
1-bed flat	50	£1,600	£19,200
2-bed flat	70	£2,150	£25,800
3-bed flat	86	£2,750	£33,000
4-bed flat	99	£3,000	£36,000
Mid value zone			
Studio	40	£1,000	£12,000
1-bed flat	50	£1,350	£16,200
2-bed flat	70	£1,600	£19,200
3-bed flat	86	£1,950	£23,400
4-bed flat	99	£2,200	£26,400

Source: AspinallVerdi 2020

⁸ Bidwells, 2019. Our View on Build To Rent. Cambridge yield.

⁹ Knight Frank, 2019. Residential Yield Guide December 2019. South East Prime (NIY).

¹⁰ CBRE, 2020. United Kingdom Residential Investment Marketview Q2 2020. Outer London/ South East prime yields.

¹¹ KentReliance, 2019. Buy to Let Britain Report. Average yield for the east region.

4 Older people's accommodation market assessment

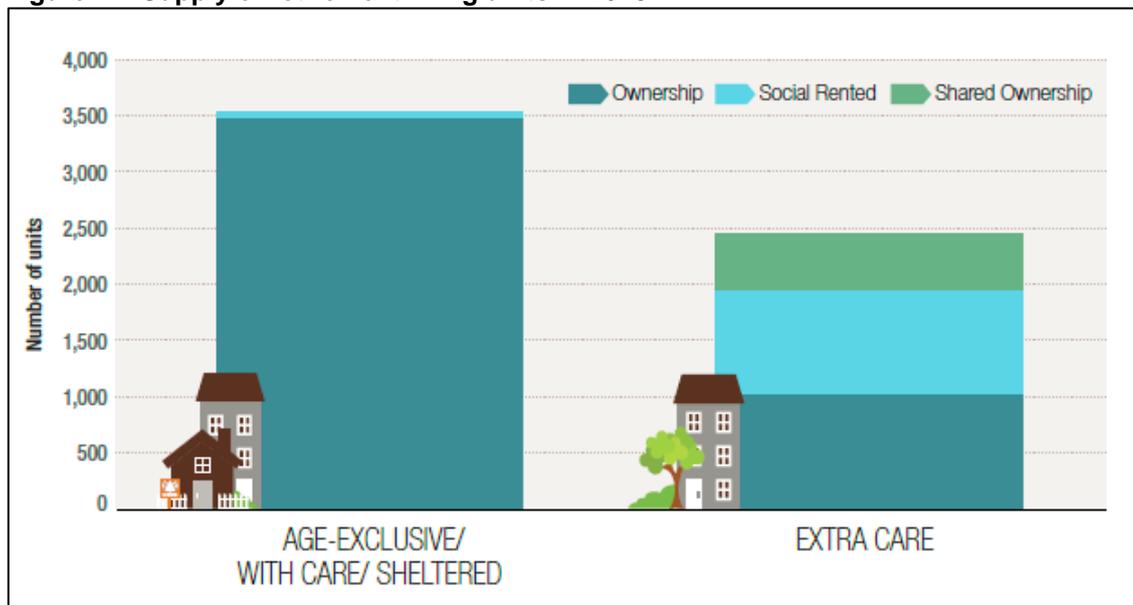
4.1 With an ageing population, the demand for forms of specialist accommodation for older people is growing. This type of specialist accommodation usually takes the form of retirement living (typically over 55 accommodation), housing with support, and housing with care. We define these below:

- **Age Restricted-Exclusive / Sheltered / Retirement Housing** – This is accommodation that is built specifically for sale or rent to older people e.g. McCarthy and Stone or Churchill. They comprise self-contained units (apartments) with communal facilities and a live-in or mobile scheme manager and alarm call systems in case of emergency.
- **Assisted Living / Extra Care / Very Sheltered Housing** - This is similar to the Sheltered Housing but is designed to enable residents to retain their independence as they grow older and their need for support and/or care increases. Residents still occupy their own self-contained home within blocks of flats, estates of bungalows or retirement 'villages' but often enjoy enhanced communal accommodation and occupants may also be offered individual care and assistance from support staff, within the complex, 24 hours per day.
- **Close Care or Assisted Living Housing** – This is normally situated within the grounds of a care home and takes the form of self-contained, independent flats or bungalows. Units may be rented or purchased by the occupier. Residents will also have access to the care home's other facilities and will normally have some form of direct communication with the care home, for emergencies. There may well be an arrangement whereby, the care home management will buy-back the property if it becomes necessary for them to move into the care home.
- **Care Homes / Residential care homes** - Living accommodation for older people and employ staff who provide residents with personal care, such as washing and dressing. Residents normally occupy their own single room but have access to other communal facilities.
- **Care Homes with Nursing / Nursing Homes** – Similar to a residential home but, they offer the full time service of qualified nursing. Such accommodation is suited to residents who are physically or mentally less capable and require a higher level of care.

4.2 Figure 4-1 shows the supply of retirement living units in 2018 and demonstrates that the majority of supply is delivered through age-restricted / exclusive or sheltered housing for sale¹². With extra-care schemes, the tenure split is more widely spread with social rented and shared ownership options.

¹² The increasing supply of age restrict housing may be due to developers bringing forward schemes classed as C2 rather than C3. This can enable them to avoid affordable housing provision. Even though these schemes are classed as C2 they often provide minimal 'on site care'.

Figure 4-1 Supply of retirement living units in 2018



Source: Knight FRANK, Retirement Housing Market Update Q1 2018, using Elderly Accommodation Council

- 4.3 Our focus is on age restricted schemes which are more likely to be developed by the private sector and are most similar to C3 Use housing. C2 Use Residential Institutions such as residential care homes and nursing homes are specialist developments (valued on a turnover or ‘profits’ basis) and are not considered in this analysis. Some of these schemes are developed by housing associations and others by the private sector and/or charities and all will have a different status in terms of liability for Affordable Housing (and CIL (for example, Charitable Organisations are exempt from CIL)).

Greater Cambridge older person’s accommodation market

Older person’s accommodation premiums

- 4.4 Research by The Retirement Housing Group¹³ (RHG) indicates that sheltered housing values carry a premium over general needs housing – this analysis is set out in Table 4-1.

Table 4-1 - Sheltered housing and ECH sales values premiums

Typology	Assumption
Sheltered housing unit prices	In higher value areas -

¹³ RHG Retirement Housing Group, Retirement Housing Viability Base Data (April 2013) / Briefing Paper for CIL Practitioners Retirement Housing and the Community Infrastructure Levy (June 2013) by Churchill Retirement Living and McCarthy and Stone

Typology	Assumption
	<ul style="list-style-type: none"> 10-15% premium to private market 1 – 2 bed flats <p>Or, in lower value areas (where no apartment scheme comparables) –</p> <ul style="list-style-type: none"> 75% value of 3-bed semi-detached house for a 1 bed sheltered housing unit, and 100% value of 3-bed semi-detached house for a 2 bed sheltered housing unit

Source: Retirement Housing Group 2013

4.5 When we apply the RHG rule of thumb approach (using the lower value rates) to our sales values (see Table 2-14) it generates the following adjusted values for sheltered housing:

- 1-bed flat at £250,000 a 10% - 15% premium equates to £275,000 - £287,500
- 2-bed flat at £300,000 a 10% - 15% premium equates to £330,000 - £345,000

New build sold prices

4.6 There have been no new build sales recorded on Land registry in Greater Cambridge since 2015, we have therefore looked at schemes in the wider Cambridgeshire area. Table 4-2 shows the flats which have sold at the Roslyn Court development in Ely. It consists of 57 new 1- and 2-bedroom apartments available for sale and rent to people aged 70 and over. Highwood Mill is the most recent example of new-build retirement accommodation, with the first sales completing in 2018.

4.7 The analysis shows that although there is a large difference in the average size of the 1 bed and 2 bed units from 56 sqm to 92 sqm, the units follow the general trend with prices on a £psm basis for 2 beds being lower than those for 1 beds. The achieved prices are slightly in excess of the RHG rule of thumb.

Table 4-2 - Achieved values for over 70s accommodation

Typology	No. of beds	Number of sales	Average size Sqm	Sold value min	Sold value max	£psm Min	£ psm Max
Flat	1	29	56	£143,107	£259,950	£2,467	£4,482
Flat	2	14	92	£193,851	£249,303	£1,771	£3,145

Source: Land Registry, EPC

New build quoting prices

4.8 Table 4-3 summarizes asking prices relating to retirement housing for three schemes in the area. Warburton House by BPHA, Mill View by Domovo and Moorhouse Lodge by Churchill

Retirement. The analysis shows that the quoting prices are mostly lower than the RHG rule of thumb with the Warburton House scheme higher.

Table 4-3 - Asking prices for sheltered housing

Scheme name	No. of listings	Unit size sqm	1 Bed – quoting price	2 Bed – quoting price
Warburton House, Ninewells, Cambridge (Over 55s) (sheltered housing)	6	Unknown	-	£377,500
Mill View, St Edmunds Way, Hauxton (Over 55s (extra care housing)	12	Unknown	-	£362,500
Moorhouse Lodge, Huntingdon (Over 60s) (sheltered housing)	5	Unknown	£200,000 - £240,000	-

Source: Rightmove, SharetoBuy

Conclusions older person's accommodation

- 4.9 Based on our analysis of the specialist housing sector we have used the values as set out in Table 4-4. In light of no evidence for the extra-care product, we have applied a premium over our sheltered housing assumptions as recommended by the RHG.

Table 4-4 -Older person's accommodation values inputs

Type	Average unit size sqm	Unit price
Sheltered Housing 1-Bed	55	£230,000
Sheltered Housing 2-Bed	70	£350,000

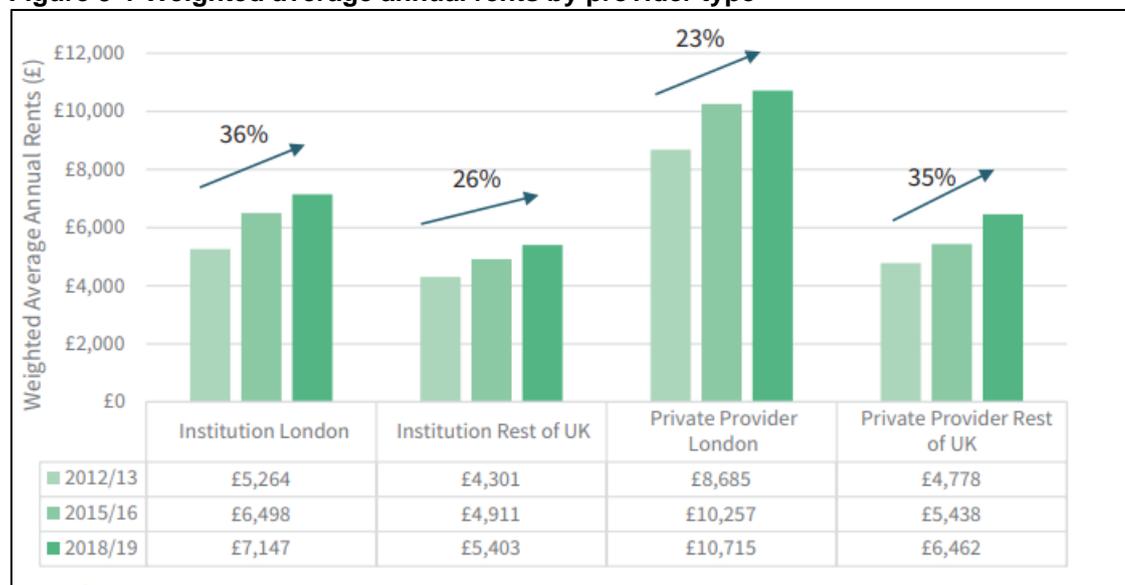
Source: AspinallVerdi

5 Student accommodation market assessment

Introduction

- 5.1 In December 2019 UCAS reported¹⁴ that 541,240 people were accepted through UCAS to start an undergraduate course in the 2019 cycle, an increase of 1.5% increase in 2018. Students from the UK accounted for 85.79% of applicants, outside the EU 8.34% and inside the EU 5.87%.
- 5.2 Nationally, demand for purpose-built student accommodation is acute due to supply not keeping pace with demand. JLL report that *‘Despite a five year decline in domestic 18-year olds, the sector has seen an increase of 114,000 UK full time students over the same period, further compounding the supply side challenge.’*¹⁵ In the East of England, since 2014, the number of available student beds has increased by 4,808 while the demand for beds has increased by 7,945.¹⁶
- 5.3 Average weekly rents for student accommodation is currently at £147, with The National Union of Students (NUS) and Unipol reporting that the *‘In 2018/19 the overall average weekly rent stands at £147, an increase of five per cent since last year, of 8.9 per cent on 2015/16 and 31.3 per cent since 2011/12.’*¹⁷ This is also illustrated in Figure 5-1, which shows the average weighted annual rents in London and the rest of the UK.

Figure 5-1 Weighted average annual rents by provider type



Source: NUS, Unipol, 2018/19, Accommodation costs survey

¹⁴ UCAS, December 2019, End of cycle report 2019

¹⁵ JLL, 2019, UK Student Housing Report

¹⁶ JLL, 2019, UK Student Housing Report

¹⁷ NUS, Unipol, 2018/19, Accommodation costs survey

- 5.4 Contract lengths for student accommodation are typically not for the full 52-week period. NUS and Unipol report that 'Nationally, the average contract length is 40 weeks for institutional and 46 weeks for private accommodation. The university figure is unchanged from 2015/16.'¹⁸
- 5.5 Due to the Covid-19 pandemic, there are expected to be a number of significant changes to the number and type of rentals being taken up by students. One of these is that universities are expecting fewer students on campus overall as it is anticipated that fewer students will enrol and those that do will have their lessons remotely. FE News reports that '*student accommodation providers are expecting a big drop in rentals this year as classes will be moving to various online platforms.*'¹⁹
- 5.6 Also, there is expected to be significantly lower demand from international students as international travel is still heavily disrupted. CNBC reports that '*international travel is still disrupted with many countries prohibiting flights from areas with large infection rates. In addition, there will be a 14-day compulsory quarantine for those arriving in the U.K. from June 8 onward. These steps could put many international students off studying in the U.K. in the new academic year*'²⁰
- 5.7 All of these factors mean that student accommodation providers are generally negative but the short term outlook, with CNBC reporting that '*Unite Students, one of the largest student accommodation providers and owners in the U.K., said in April it expected a loss between 16% and 20% in rents for the 2019/20 academic year. Empiric Student Property, another firm in the U.K., said in May it expected a drop of up to 12% in income for the current year.*'²¹

Greater Cambridge student accommodation market

- 5.8 Greater Cambridge benefits from the University of Cambridge and Anglia Ruskin University. The University of Cambridge is one of the best universities in the world with a Times World University Ranking of 3rd in 2020. It provides a wide variety of full-time and part-time, undergraduate and postgraduate courses in the following areas: art, design and architecture, business and law, performing arts and social sciences, science, engineering and computing, and health, social care and education. The University had an estimated 23,247 students enrolled as of 2019.

Rents

- 5.9 Table 5-1 summaries the quoting rents for several student schemes in Cambridge. Prices for studio apartments range between £189 - £342 per week while prices of ensuite rooms range between £170 – £230 per week.

¹⁸ NUS, Unipol, 2018/19, Accommodation costs survey

¹⁹ FE News, 2020, The New Normal: How Student Accommodation Will Change In The UK After Covid-19

²⁰ CNBC, 2020, Student housing in the UK is no longer a 'bullet-proof' investment after the coronavirus crisis

²¹ CNBC, 2020, Student housing in the UK is no longer a 'bullet-proof' investment after the coronavirus crisis

Table 5-1 - Summary of student accommodation rents

Scheme name	Typology	Price per week	No. of weeks
The Railyard	Studio	£200 - £278	43 - 51
Brunswick House	Ensuite	£172 - £218	43 - 51
Anglia House	Ensuite	£170 - £230	43 - 51
	Studio	£250 - £257	51
Nido Castle Hill	Studio	£207 - £286	43 - 51
	Ensuite	£180 - £190	43 - 51
The Cam Foundry	Shared house/ensuite	£154 - £179	41 - 51
Study Inn Cambridge	Studio	£189 - £244	43-51
Student Castle Cambridge	Studio	£242 - £342	43-51

Source: Providers websites, August 2020

Student accommodation investment yields

- 5.10 Pre-Covid-19, student investments were considered an attractive proposition, with income being considered relatively secure over a fixed period and the sector has seen rental growth. Cushman & Wakefield report that *'Private sector rental growth between 2018 and 2019 is slightly lower than in previous years at 2.6% overall.'*²²
- 5.11 As a result of Covid-19, experts are warning that student accommodation is no longer a low-risk investment that it once was with CNBC reporting that *'Student accommodation has been a "bullet-proof" investment, but experts predict it's now on track for a year of disruption due to the coronavirus crisis and its impact on the property market.'*²³
- 5.12 With regards to investment yields, Figure 5-2 shows that pre-Covid-19, investment yields were generally compressing except for the secondary regional market. Super prime regional yields were at 5.25%.

²²Cushman & Wakefield, 2016/17, UK Student accommodation report

²³ CNBC, 2020, Student housing in the UK is no longer a 'bullet-proof' investment after the coronavirus crisis

Figure 5-2 Direct let net initial yields 2019

	Net initial yield	Trend
London	4.00%	▼ Down
Super prime regional	4.75%	▼ Down
Prime regional	5.25%	▼ Down
Secondary regional	6.00%	▲ Up

Source: Savills, The Sky's The Limit? 2019

5.13 Table 5-2 sets out student investment sales recorded on EGi. There is limited evidence in Cambridge available on EGi so we have looked in the wider area. The evidence shows that recent student investment sales with direct lets have achieved yields between 4.77% and 9.82% this is dependent on the location, quality of nearby universities, competing supply and specification of the building.

Table 5-2 - Student accommodation investment sales

Deal Date	Address	No. of beds	Price	Yield %	Cap value per bed space	Vendor	Purchaser	Comments
01/07/18	Brunswick House, Newmarket, CB8 8HR	251	£38m	4.77	£151,394	Apache Capital Partners	Cambridgehire County Council	Direct let - 231 en-suite cluster flats and 20 self-contained studio flats
19/12/18	Apollo House & The Annex, Butts, Coventry, CV1 3GN	161	£5.5m	9.82	£34,161	-	L1 Property	Direct let – 161 shared rooms
27/06/18	Roman House, Friar Gate, Derby, DE1 1XB	126	£8.6m	6.22	£68,253	Catalyst Capital	Northridge Capital	Direct let – 72 studios and 54 'twin studios'

Source: EGi, accessed August 2020

Conclusions student accommodation

5.14 Based on the market analysis a suitable weekly rent for an en-suite is £200 per week over a 46-week period. Assuming a direct let a net initial yield of 4.75% is appropriate.

6 Serviced apartments market assessment

Introduction

- 6.1 Within Europe. The UK serviced apartment sector is the market leader with JLL²⁴ reporting that, in 2018, there were over 22,000 serviced apartments in the UK and Ireland. In recent years, the short term lets sector which includes serviced apartments and aparthotels has been one of the fastest-growing sectors in the accommodation market, with LSH reporting that *“with approximately 6,000 new units scheduled to open by 2021, or about 13% of the total active pipeline, the sector is one of the fastest-growing parts of the overall accommodation market”*²⁵. Whilst the serviced sector is different from the traditional hotels sector. Many major hotel operators including IHG and Accor now have extended stay brands with an increasing number of properties across the UK. A major reason for this is that serviced apartments are less labour intensive than traditional hotels, which means that hotel operators with cost pressures can offset these with a serviced apartment or aparthotel brand.
- 6.2 Nationally, the demand for serviced apartments has been growing steadily in recent years, partly driven by the rise in status of holiday rental operators such as Airbnb. Savills report that *“Post-Covid, greater cleanliness concerns from guests alongside social distancing preferences, and the fact that many Airbnb hosts have removed properties from the listing site, could see the sector capture a greater share of this leisure demand going forward.”*²⁶
- 6.3 Due to the global pandemic, the hospitality sector across the UK has been negatively affected as a result of the lockdown which greatly reduced demand across the board. While all markets were negatively affected, the serviced apartments market has performed better than traditional hotels with Savills reporting that *“Serviced apartments have not been immune to the Covid-19 crisis but have shown a degree of relative outperformance. As seen historically, this could become more pronounced once recovery starts to emerge”*²⁷.

Greater Cambridge serviced apartment market

- 6.4 The Greater Cambridge area is an attractive market due to a strong tourism sector a world-renowned university and a strong science and technology-based economy. The market is mostly focused around central Cambridge City, with a number of different schemes varying from single apartments to new build schemes. Some of the major operators in Greater Cambridge include Your Space Apartments, Citystay, Urbanstay and Signet Apartments. These operators offer a

²⁴ JLL, 2018, Serviced Apartments - The fastest growing sector in hospitality

²⁵ LSH, 2020, Innovation in The Fast-Growing Aparthotel Sector

²⁶ Savills, 2020, European Serviced Apartment Market

²⁷ Savills, 2020, European Serviced Apartment Market

range of apartments from studio to three bedrooms with varying levels of quality and amenities, which is reflected in the rents.

Rents

6.5 Table 6-1 summaries the quoting rents for several high-quality serviced apartment schemes in Cambridge. Prices for studio apartments range between £108 - £215 per night while prices of 1 bed apartments range between £109 - £192 per night and 2 beds range between £148 - £215 per night.

Table 6-1 - Summary of serviced apartment rents

Scheme name	Typology	Price per night	Notes
Hinton House, CB1 7BS	Studio	£108 - £160	Built 2019, minimum stay 1 night.
	1 Bed	£121 - £192	
Vesta, CB1 2FX	1 Bed	£134 - £163	Built 2016, minimum stay 4 nights.
	2 Bed	£175 - £215	
Jubilee House, CB1 2NZ	1 Bed	£109 - £145	Built 2017, minimum stay 3 nights.
	2 Bed	£148 - £185	
Ceres, CB1 2FG	Studio	£112 - £132	Built 2015, minimum stay 4 nights.
	1 Bed	£131 - £159	
	2 Bed	£160 - £204	

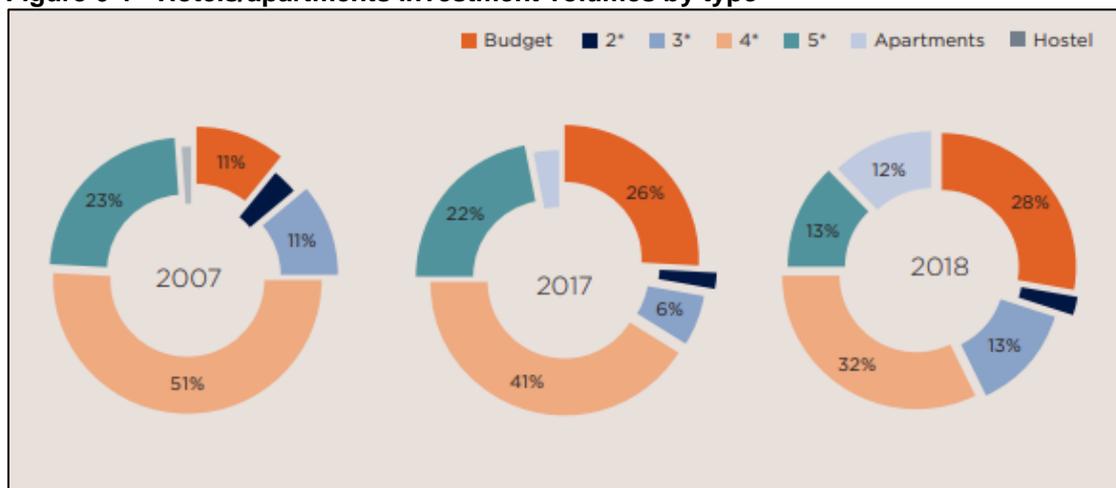
Source: Providers websites

Serviced apartments investment yields

6.6 According to JLL²⁸, as of 2015, yields for serviced apartments ranged between 6.5% - 9%. This was due to the higher risk involved with the then-emerging sector. With regards to investment yields, Figure 6-1 shows that, between 2017 and 2018, the investment volume for serviced apartments increased from 3% to 12%.

²⁸ JLL, 2016, Why Serviced Apartments? The Investment Case

Figure 6-1 - Hotels/apartments investment volumes by type



Source: Savills, 2019

Conclusion

- 6.7 Based on the market analysis a suitable nightly rent is £125 for a studio, £140 for a 1 bed and £195 for a 2 bed. Assuming an adjusted net initial yield of 6.5% is appropriate.

7 Hotel market assessment

Introduction

7.1 The UK hotel market has a wide-ranging offer, from 5-star and luxury hotels, major national brands and small independents. International and domestic tourism, business and leisure activities generate demand across upper, mid and lower tier accommodation. The upper end offer is predominantly found in London to capture high tourist and business traffic. At the budget end Statista report²⁹ that this sector captures demand from peer-to-peer platforms (e.g. Airbnb) for cheaper rates and home away from home experience. Both Lambert Smith Hampton³⁰ and Statista report²⁹ that despite peer-to-peer platforms being considered a disrupter to the market they have not had a discernible impact on chains or industry performance.

Hotel operating models

7.2 There are four types of hotel operating models:

- **Hotel management agreement (HMA)** – these agreements can be complex, but in essence, the operator is responsible for the day-to-day running of the hotel, including hiring and firing employees. As well as providing accommodation, and additional functions such as conference facilities, the operator will take reservations and conduct the marketing and promotion of the business. The operator will be responsible for routine maintenance and will procure other capital projects needed for the hotel, although these will typically be authorised and paid for by the owner. The operator pays a fee for providing the services under the hotel management agreement. The fee is usually calculated through a formula, which will vary depending on the terms of the agreement, typically, the operator's fee will be subdivided as follows:
 - a guaranteed base amount, calculated as a percentage of revenue from the hotel business;
 - an incentive element, to be earned by the operator if gross operating profit (GOP) exceeds an agreed threshold
- **Franchise agreements** – a franchisee has the right to use a brand, the distribution channels and other proprietary knowledge of a franchisor. The owner retains all risks and liability of the business, but, unlike an HMA, they also retain control of the property.
- **Hotel leases** – this is a traditional model involving a landlord and tenant, with the tenant can choose to operate the hotel directly or subcontract operations using management contracts and/or franchises.

²⁹ <https://www.statista.com/topics/3146/hotel-industry-in-the-united-kingdom-uk/>

³⁰ Lambert Smith Hampton, 2018, Hotel Report

- **Owner operation** – the hotel is owned and fully operated by the brand. This model is more capital intensive but provided the operator to have full control of the property thus allowing them to configure the property to respond to the market.

Main hotel indicators of performance

7.3 The main hotel indicators to measure performance are:

- *‘occupancy rates (of rooms or bed-places),*
- *average room rates (or ADR – average daily rate),*
- *and room yield, more commonly known as revenue per available room (RevPAR).²⁹*

UK hotel market

7.4 Due to the global pandemic, many UK hotels closed during lockdown with sector starting to slowly open up but the market is split between the UK leisure markets and cities. STR report ³¹the week commencing 03 August 2020, hotel occupancy in both Brighton and Bournemouth was over 80% and 90% in Plymouth compared to 27% rate recorded in London.

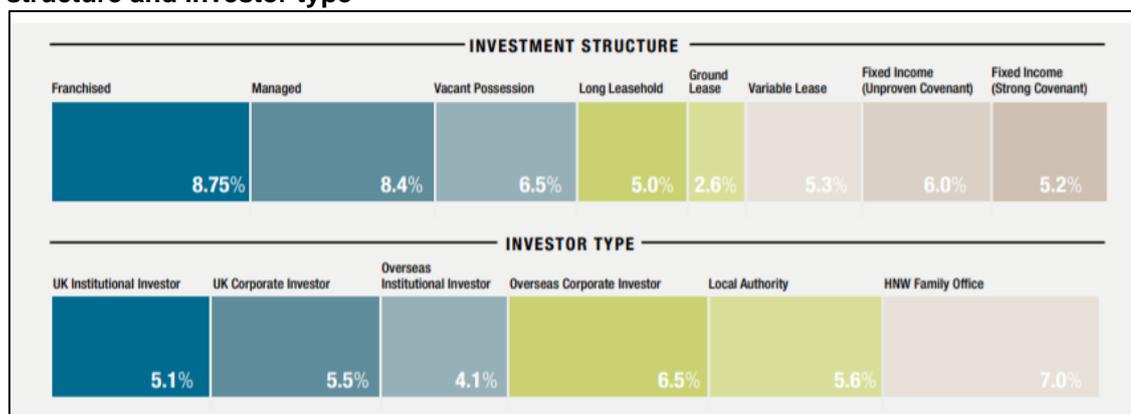
7.5 With regards operators, Travelodge has entered into a company voluntary arrangement (CVA) as it could not agree to a rent reduction with its landlords. As a result of the CVA, 94% of their leases will be paid at 50% of the rent and 6% of leases will receive zero rent until the end of 2021. Furthermore, as part of Travelodge’s restructure, two of its landlords are seeking to exit the brand via two initiatives:

- Ago – formed by one group of Travelodge landlords and is seeking to partner with Acord under its Ibis brand,
- Goodnight Hotels – formed by another group of landlords is seeking to create a new budget brand.

7.6 Figure 7-1 summarises research published last year (2019) by Knight Frank. It shows that hotel leases are more attractive to the investment market (i.e. lower yields/generate more value) than the franchised and HMA models. Lease yields are typically between 5% and 6% whereas franchised and HMA yields are in excess of 8%.

³¹ CoStar, 14 August 2020, UK Hotel Video Update: Heatwave Exacerbates Split in Hotel Performance

Figure 7-1 UK Hotel Investment 2018 – average net initial yield (%) – by investment structure and investor type



Source: Knight Frank, UK Hotel Capital Markets, 2019

Greater Cambridge hotel market

- 7.7 The Greater Cambridge area is an attractive hotel market due to strong business base, tourism and university. The attractive nature of the Greater Cambridge market is shown in its high ADR, only London has a higher ADR (see Table 7-1) than Cambridge, with the Cambridge rate being much higher than the likes of Oxford and Bristol.

Table 7-1 - ADR by UK cities

Location	ADR (USD) Jan – Mar 2019
London	223.83
Cambridge	176.04
Birmingham	117.74
Bristol	131.04
Edinburgh	130.47
Milton Keynes	137.59
Reading	156.04
Crawley/Gatwick	144.25
Heathrow	124.11
Oxford	142.09

Source: HOTELS QUARTERLY MARKET REPORT, JANUARY TO MARCH 2019, In association with Advantage Travel Partnership

- 7.8 Due to the high ADR for Cambridge, the investment values are much higher than other regional cities (see Table 7-2). The Clayton sold last year at circa. £350,000 per bed space whereas values elsewhere are half.

Table 7-2 - Hotel investment sales

Date of sale	Address	Operator	No. of beds	Price per bed	Comments
18 Nov 2019	Station Road, Cambridge	Clayton	155	£351,612	<p>The Ability Group has bought The Tamburlaine Hotel Cambridge for £54.5m as an investment, reflecting a net initial yield of 5%.</p> <p>The hotel, which comprises 155 bedrooms and opened in 2017, was sold by the O'Callaghan Collection in an off market transaction.</p> <p>The new owners have also agreed a 30 year lease with Dalata who will operate the hotel under its Clayton brand.</p>
13 Nov 2018	99 Church St, Rickmansworth	Premier Inn	92	£153,260	<p>H2O Urban, the development joint-venture between bloc Ltd and Canal & River Trust, has completed a development funding agreement with a UK private property company to bring forward the development of a Premier Inn hotel and a branch of builder's merchant Travis Perkins in Batchworth Lock, Rickmansworth, Hertfordshire.</p>
26 Mar 2020	Northside Rd, Bristol	Hampton by Hilton	201	£119,402	<p>Located at Bristol Airport. Includes a fitness centre, breakfast area and conferencing/meeting rooms that can hold up to a maximum of 20 people</p>
12 Aug 2019	Coventry Rd, Birmingham airport	Holiday Inn	239	£138,075	<p>Holiday Inn Birmingham Airport - NEC has been sold by Crest Hotels to 11 Hospitality Limited. The 239-bedroom hotel will continue to operate subject to a franchise agreement with InterContinental Hotel Group (IHG) under the Holiday Inn brand. Alongside its rooms, the hotel has 14 meeting and conference rooms, a Marco Pierre White restaurant and leisure facilities.</p>

Source: CoStar, accessed 14 August 2020

Conclusion hotel market

- 7.9 Based on the market analysis a suitable capital value bed space to use in the viability testing is £350,000.

8 Retail market assessment

Introduction

- 8.1 In our assessment of the retail sector, we consider both convenience and comparison retail because they both have different market drivers.

Retail market overview

- 8.2 Prior to the Covid-19 pandemic the retail market was going through a structural change. The structural changes in the retail market were being caused by the growth in online sales and falling footfall in town centres. Retailers were also facing cost pressures from business rates and national living wage. During the Covid-19 outbreak many retailers have had to close or limit customer access due to social distancing measures introduced by the government. Many retailers have sought to take advantage of the Coronavirus Act 2020³² and not paid rent – CoStar reported that only 41% of March quarter date rent was collected and 40% June quarter date.³³

Convenience sector

- 8.3 The convenience retail sector has seen a significant change since the financial crisis. In the years following 2008, supermarkets appeared to have weathered the economic storm with most operators aggressively expanding (commonly referred to as the race for space). Operators were able to competitively bid for sites as they were taking advantage of other sectors in the property market is much weaker. During this period of growth, there was a strong appetite from operators to open large-format stores of up to circa 11,150 sqm (123,785 sqft). This format providing a mixture of convenience and comparison retail.
- 8.4 In more recent years shopping patterns have changed significantly: there is more reliance on online shopping combined along with customers supplementing a 'big' shopping trip with regular smaller shops during the week. Also, some customers are splitting their shopping trips between the big four supermarkets (Tesco, Sainsbury's, Asda and Morrisons) and discounters such as Aldi and Lidl. This resulted in supermarket operators shifting away from large format stores
- 8.5 The convenience retail market appears to have performed relatively well during the outbreak with many reporting a higher volume of sales than they would experience during Christmas. At some points, demand has appeared to outstrip supply, with the likes of Ocado temporarily suspending their ordering application and restricted access to their website. The pressures faced by supermarkets during the Covid-19 lockdown are; maintaining social distancing in their physical

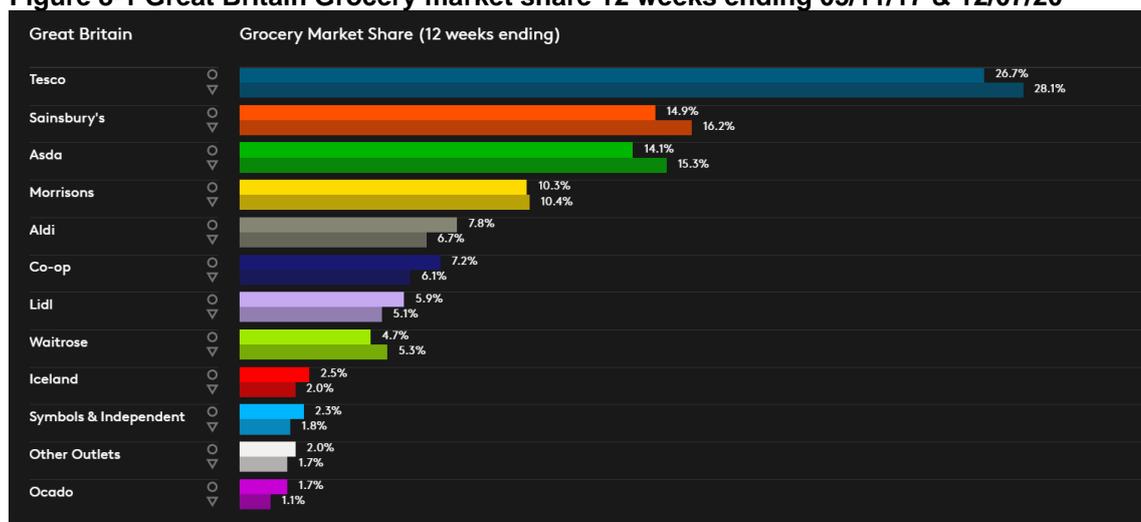
³² 'Coronavirus Act 2020' which received royal assent on 25 March 2020 introduced new legalisation 'that no right of re-entry or forfeiture may be enforced due to non-payment of rent until the end of the 'relevant period' (30 June 2020 (unless extended)).' The Coronavirus Act 2020 has provided the flexibility to allow tenants not to make their quarter day payment in March.

³³ CoStar, 2 July 2020, Forty six per cent of June Quarter Day commercial rent now collected

stores, through restricting customers numbers; maintain supply chains (resulting in less choice of items and restricting the number of purchasers; and increasing capacity for home deliveries to meet demand.

- 8.6 Figure 8-1 shows how the changes in the market have affected the relevant supermarket operators market share in recent years. The big four have been losing market share whereas the budget operators of Lidl and Aldi have gained market share along with online delivery service Ocado.

Figure 8-1 Great Britain Grocery market share 12 weeks ending 05/11/17 & 12/07/20



Source: Kantar WorldPanel (August 2020)

- 8.7 Due to the changes in the market, operators are now more selective in the types of and locations of stores they seek to open. Tesco typically only seeks sites for their express format i.e. circa 200 sqm (2,200 sqft) in main urban areas ideally close to transport hubs. The likes of Asda, Morrisons and Sainsbury's focus on the main urban areas where there is a perceived market gap. Aldi and Lidl have been a bit more aggressive which has led them to increase their market share.
- 8.8 Lidl³⁴ seek sites with a minimum of 1.5 acres to accommodate a store totalling between 14,000-26,500 sqft (1,300-2,460 sqm). In terms of location, the sites would ideally have main road frontage with easy access and be situated within town, district or edge of centre or out of town locations. Aldi³⁵ also has similar requirements in terms of location and size, with a minimum of 1.5 acres to accommodate 18,000 - 20,000 sqft of space and 100+ car parking spaces.
- 8.9 The big four are decreasing their property portfolios shifting from larger stores to smaller stores to keep up with changes in shopping trends. These smaller stores can be more attractive to the investment market as they have higher sales densities and can increase rent per sqft. Compared

³⁴ Lidl.co.uk/en/Site-Requirements, accessed February 2019
³⁵ Aldi.co.uk/about-aldi/property/required-towns, accessed February 2019

to other retail comparison retail is still attractive to investors due to good covenant strength, and long institutional RPI linked leases.

Convenience retail rents

8.10 There is a lack of convenience retail evidence in the area on CoStar; therefore, we have considered the wider region in our analysis of rents. Such an approach is acceptable to analyse comparable evidence as the ability for an operator to pay the rent is driven by footfall and nearby competition rather than geographical boundaries.

8.11 The rents we have considered are not new-build as there is a lack of this type of development coming forward. However, Cambridge is amongst the sites listed as “required locations” by Aldi and Lidl. Table 8-1 shows that rents achievable range between £18.00 psf to £39.40 psf with smaller units achieving a higher price psf than the larger format stores.

Table 8-1 - Convenience retail occupational transactions

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
11/10/2019	393 Newmarket Road, Cambridge, CB5 8JG	Aldi	13,509	£39.40	Let on a 20-year term with rent free periods spread over the term. Rent Review on a 5 yearly basis – effective rent £37.02
19/07/2019	Fred Archer Way, Newmarket CB8 8NY	Waitrose	44,481	£18.60	Let on a 20-year term. Lease renewal option at the end of current lease
17/07/2019	Hartham Lane, Hertford SG14 1RD	Sainsbury's	36,089	£28.54	Let on a 40-year term. Rent Review on a 5 yearly basis
03/2018	Grovebury Road Retail Park, Leighton Buzzard	Aldi	20,000	£18.00	20 year lease and the tenant benefitted from an 11 month rent free period. Unit within a brand new retail park.

Source: CoStar, Knight Frank accessed August 2020

Convenience retail yields

8.12 Table 8-2 shows that the most recent investment sales in Greater Cambridge and the surrounding areas range between 4.5% and 5.36%.

Table 8-2 - Convenience retail investment transactions

Date of transaction	Address	Tenant	Size sqft	Net Initial Yield	Comment
04/09/2019	Cheddars Lane, Newmarket Road, Cambridge, CB5 8LD	Tesco	72,200	4.5%	Let with 10.5 years term certain and index linked annual rent increases.
01/12/2018	Brooks Road, Cambridge, CB1 3HP	Sainsbury's	81,984	4.65%	Let with 2 years term certain. Possibility to restructure lease for 10-year term and upward only rent reviews. Passing rent £260,000 per annum.
26/11/2018	163-167 Mill Road, Cambridge, CB1 3AN	Tesco	5,720	5.36%	Auction sale, let with 3 years term certain. Passing rent of £75,830
08/2018	Wolverton Works, Milton Keynes	Lidl	28,041	4.84%	FH. Built 2018. 5 yearly rent reviews to OMRV, capped at 2% per annum. Part of a wider regeneration scheme.

Source: CoStar, Knight Frank, accessed June 2020

8.13 Knight Frank report³⁶ that prime supermarket yields are 4.25% for fixed annual retail price index (RPI) increase on a 25-year term, with yields increasing to 4.75% for open market reviews.

Comparison retail

8.14 Prior to the global pandemic, the shift from bricks to clicks was being significantly felt in the comparison sector. Many well-known names were lost e.g. BHS, Poundworld, Maplin and Toys 'R' Us and entering CVAs or administration e.g. New Look, Debenhams and House of Fraser.

8.15 As the high street starts to re-open we have seen further changes which include:

- Intu – one of the UK's largest shopping centre owners, with the likes of Trafford Centre and Lakeside entered administration.

³⁶ Knight Frank, May 2020, Investment yield guide

- All Saints – the fashion retailer has agreed to a CVA which has resulted in them changing to turnover rents rather than fixed rents.
- Go Outdoors - entered administration end of June 2020 and was bought by JD Sports and the business will be restructured and reports they will be seeking to significantly cut rents to avoid store closures.

Greater Cambridge comparison retail

- 8.16 The comparison retail market in Greater Cambridge is mainly concentrated in Cambridge city with significantly less retail activity in the South Cambridgeshire area. The area has a range of retail formats from local high street shops to larger out of town retail parks such as Cambridge Retail Park, Beehive Centre and Cambridge Leisure Park all located in Cambridge City.
- 8.17 There is no recent new build retail evidence for yields or rents listed on CoStar for the area, a reflection of little new development recently occurring. We have reviewed the second-hand units that have recently sold. Table 8-3 shows some transactions across the Greater Cambridge. The majority of the transactional evidence contains smaller units up to 1,500 sqft. Rents vary across the area and are mainly dependent on the quality of accommodation as well as the local area's retail strength. Rents range between £13.88 and £26.70 psf.

Table 8-3 - Comparison retail occupational transactions

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
01/12/2019	184B Histon Road, Cambridge, CB4 3JP	Express Grocers	995	£25.12	13-year lease with 3-months rent free and 5 year tenant break – effective rent £23.70 psf
30/07/2019	105A Cherry Hinton Road Cambridge CB1 7BS	n/a	620	£26.60	Converted 1900s building. 3-months rent free
08/04/2019	40 Arbury Court, Cambridge, CB4 2JQ	Coral	872	£15.42	Let on a 10-year term with 5-year tenant break
20/01/2020	46B High Street, Sawston, Cambridge CB22 3BG	Break Charity	663	£26.70	Let on a 9-year term with 3 year tenant break
30/05/2019	8 Rose Cres, Cambridge CB2 3LL	JoJo Maman Bebe	1,435	£35.71	10-year lease with 3-months rent free and 5 year rent review with tenant break

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
					on year 3 and 6 – effective rent £34.54 psf
10/04/2019	34 Trumpington Street, Cambridge CB2 1QY	Gabor Cossa Antiques	612	£13.88	Let on a 5-year term – effective rent £15.32
10/01/2019	56 Burleigh Street, Cambridge, CB1 1DJ	Barham & Sons	611	£24.54	Let on a 3-year term

Source: CoStar, accessed June 2020

- 8.18 There is limited evidence of recent investment deals in Cambridge recorded on CoStar, most of the evidence is based around the city centre. The evidence in Table 8-4 shows that sales achieved yields between 5.44%- 7.35%.

Table 8-4 - Comparison retail investment transactions

Date of transaction	Address	Tenant	Size sqft	Net Initial Yield	Comment
04/02/2019	30/31 Petty Cury, Cambridge, CB2 3NB	Superdry	7,087	5.92%	Let with 4 years term certain. Passing rent of £325,000
08/07/2019	38/39 Green Street, Cambridge, CB2 3JX	Multilet including: Tabanco & Cellini (Pearls) Limited	2,769	5.44%	Let with 5 and 10 years term certain. Total passing rent of £68,000. No breaks
20/12/2019	The Belvedere, Hills Road Cambridge CB2 8PB	Multilet	19,101	7.35%	AWULT of 3.34 years to expiry, Passing rent of £152,288

Source: CoStar, accessed June 2020

Conclusion

- 8.19 Based on the above evidence we have proposed to test the following:

- Convenience retail budget format store 4,645 sqm (21,528 sqft)
 - Rent £290 psm (£27 psf)
 - Yield 5%
- Convenience retail express format store 350 sqm (3,767 sqft)

- Rent £215 psm (£23 psf)
- Yield 5.5%
- Comparison small town centre store 93 sqm (1,000 sqft)
 - Rent £215 psm (£25 psf)
 - Yield 7%
- Comparison Large town centre store 557 sqm (6,000 sqft)
 - Rent £236 psm (£22 psf)
 - Yield 6%

9 Science Parks market assessment

Introduction

- 9.1 Science parks (also known as research parks and technology parks) are facilities that emerged in the UK in the 1980s and have increased in number and size throughout the 1990s and 2000s. Today there are multiple examples of science parks around the country specialising in several different sectors and research fields. The UK has relied on these parks to help it to progress in highly skilled scientific and technology sectors. Successive public and private sector institutions and businesses have promoted the use of science parks as integral areas for innovative and scientific discovery.
- 9.2 The United Kingdom Science Park Association (UKSPA) provide a broad definition of a science park. In short, a science park is an area that supports business and research institutions to transfer research and technology initiatives. The UKSPA outline three specific science park criteria, they must:
- Encourage and support the start-up and incubation of innovation-led, high-growth, knowledge-based businesses.
 - Provide an environment where larger and international businesses can develop specific and close interactions with a particular centre of knowledge creation for their mutual benefit.
 - Has formal and operational links with centres of knowledge creation such as universities, higher education institutes and research organisations.
 - Generally, it is assumed that a science park is a centrally managed collection of properties which can include specialist facilities, laboratory space, office space and light manufacturing space. Usually, science parks are master-planned and have a mix of different types of amenities, including cafes, children nurseries and conference facilities.
- 9.3 The format of UK science parks has changed over the past 15 years with more of a focus now on smaller units for start-ups and SMEs. This has changed the dynamic of the real estate market. The constant demand for small units has decreased supply. Furthermore, there is a constant cycle of companies merging, and being acquired by larger companies, creating demand for medium and larger units as well.

Greater Cambridge Science Parks

- 9.4 Greater Cambridge is considered to be one of the most established areas for science parks in the country; have multiple science parks in and around Cambridge city and university. Cambridge city specialises in bioscience (life sciences) and technology sectors (including; electronics, IT). Cambridge is one of the three science hubs, along with London and Oxford, that make up the

'Golden Triangle of life science research, with a recent Bidwells Report stating that 'London, Oxford and Cambridge — 'the Golden Triangle' — has demonstrated global leadership in the response to the Covid-19 crisis. The region's strengths in life sciences have been at the forefront in developing testing, treatments and, ultimately, a vaccine.'³⁷ It is estimated that the region will play an important role in the post-Covid economic activity and recovery of the UK.

- 9.5 Table 9-1 provides a list of major science parks in Greater Cambridge, along with their size and example occupiers. Of the example science parks, some have a very specific focus on one sector i.e. Wellcome Genome Campus, which specialize solely in genome and biodata research. However, most science parks have a more diverse range of sectors, and in some cases (e.g. Granta Park) they are a science/business park hybrid. According to Bidwells, 'Cambridge was the second most innovative city behind London, accounting for almost 75% of all life science start-ups in the Eastern region.'³⁸.

Table 9-1 - Greater Cambridge Science Park

Name	Size (sq ft)	Example Occupiers	Focus of industry	Owned by Uni. University collages
Babraham Research Campus	260,000	Cambimune, Cancer research, Gen2 Neuroscience, Kymab, New Path, Zfactors	BioScience	
Cambridge Research Park	400,000	Elecheck, Sectrum Management, Valliant, Diomed and Horizon Discovery	BioScience & General Engineering	
Cambridge Science Park	1.65 million	Nobelight, Johnson Matthey Catalysts, Kiss Communications, Pharmorphix, Philips Research, Solize UK,	BioScience & Technology	Yes (Trinity College)
Wellcome Genome Campus	-	Genomics England, Microbiotica, Congenica, Global Gene Corp	Genome and biodata research	
Cambridge Bio-Medical Campus	2.3 million	GlaxoSmithKline, AstraZeneca, Cambridge University Hospitals NHS Foundation Trust,	BioScience & Medical	Yes
Granta Park	1.1 million	Pfizer Research Centre, One Nucleus, Ista, Alzheimers Research UK, UCB	BioScience	

³⁷ Bidwells, Knowledge networks

³⁸ Bidwells, Spring 2020, Our View on Offices and Labs

Name	Size (sq ft)	Example Occupiers	Focus of industry	Owned by Uni. University collages
St Johns Innovation Park	250,000	AlphaBio Control Ltd, Bailey Fisher, Cambridge Therapy Centre, Ellexus Ltd	BioScience, Technology, IT & Electronics	Yes (St Johns College)
Melbourn Science Park	200,000	AstraZeneca, Avita Medical Europe, TTP Labtech, TTP Venture Managers	BioScience	
Chesterford Research Park	350,000	Charles River, Illumina, Isomerase Therapeutics, UKSPA, DRW, TLIP, AstraZeneca, CellCentric	BioScience	

Source: Bidwells & Individual science park websites (2020)

- 9.6 The success of science parks in Greater Cambridge is due to many reasons. A key attribute is the world-class university located in the city. This provides the academic resource required to make advancements in the research carried out in the parks. Cambridge Science Park and Cambridge Bio-Medical Campus are both owned by Cambridge University. Those science parks that do not have direct connections to the university can still benefit their geographic position in acquiring skilled resource. A further benefit in the area is the critical mass of numerous science parks in the area. This creates the potential for competition and the sharing of academic resources. Savills report that access to academic resource has been the key to the success of science parks in the Cambridge region.
- 9.7 Another competitive advantage of Cambridge is the strong office market where development is viable. Prime rents in Cambridge are as high as £46.50 psf. This provides a good opportunity for science parks to let space to non-science related activity.
- 9.8 Major recent deals include Abcam's 100,000 sqft office building a Cambridge Biomedical Campus and Tuspark's completion of the Bio Innovation Centre at Cambridge Science Park.

Science Park rents

- 9.9 Table 9-2 sets out achieved rents for Greater Cambridge recorded on CoStar and EGi. Rents for second-hand units range from £32.09 psf to £34 psf which is in line with Carter Jonas³⁹ headline rents of £36.00 psf for northern fringe office/science parks and Bidwells⁴⁰ headline rents of £35.00 psf for shell labs.

³⁹ Carter Jonas, 2020, Commercial Edge Spring 2020

⁴⁰ Bidwells, 2020, Our View on Cambridgeshire Offices & Labs, Summer 2020

Table 9-2 - Achieved rents Greater Cambridge

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
23/03/2020	216 Cambridge Science Park, Milton Road, Cambridge, CB4 0FZ	Amgen	34,692	£34.00	Built 2019, 10 year lease
10/03/2020	Vitrum Building, St Johns Innovation Park, Cowley Road Cambridge, CB4 0DS	Phillips Medisize	2,000	£32.09	Built 2004, 3 year FRI lease
30/06/2020	181 Cambridge Science Park, Milton Road, Cambridge, CB4 0FZ	Mursla	1,247	£50.00	Recently refurbished, 1 year lease

Source: CoStar/EGi accessed August 2020

Science Park yields

9.10 There is little evidence of recent investment activity in Greater Cambridge recorded on CoStar. Table 9-3 shows these investment transactions, with yields between 5.25% - 5.63%, these properties are located in the fringe areas of the city. In addition to this Carter Jonas⁴¹ report a prime yield of 4.50% for offices/labs in Cambridge City.

Table 9-3 - Science Parks investment transactions Greater Cambridge

Date of transaction	Address	Tenant	Size sqft	Net Initial Yield	Comment
01/06/2018	Unit 163, Cambridge Science Park, Milton Road, Cambridge, CB4 0GG	Heraeus Noblelight	10,283	5.25%	Purchased by Norwich City Council.
22/11/2018	140 Cambridge Science Park,	Displaylink		5.63%	Fully occupied, Lease lengths mostly 10 years with 5 year breaks.

Source: CoStar, accessed June 2020

⁴¹ Carter Jonas, 2020, Commercial Edge Spring 2020

Conclusion

- 9.11 Based on our analysis of the Science park market an appropriate rent is £36 psf and yield of 5.25%.

10 Office market assessment

Introduction

- 10.1 Similar to the residential market, the full impact of Covid-19 on the office market is unknown. With the government encouraging working from home measures, many offices have been left unoccupied or at greatly reduced occupancy. Companies have been forced to embrace video conferencing and other measures to ensure business continuity.
- 10.2 What has emerged to date is that:
- Leasing decisions deferred – due to the uncertain world economic outlook companies have deferred the decision making in taking new space, this is more apparent with micro-businesses and SME's whose current focus is dealing with the immediate fallout and business continuity.
 - Tenants seeking to defer rent payments – the 'Coronavirus Act 2020' which received royal assent on 25 March 2020 introduced new legislation *'that no right of re-entry or forfeiture may be enforced due to non-payment of rent until the end of the 'relevant period' (30 June 2020 (unless extended))*.⁴² The Coronavirus Act 2020 has provided the flexibility to allow tenants not to make their quarter day payment in March.
 - Increase in office occupier tenant incentives – Knight Frank indicates that *'Lease incentives, however, have drifted: 21-24 months on some 10-year leases, instead of 18-21 months in the West End and nearer 24 months in the City, which were previously at 21-24 months*.⁴³
- 10.3 Typically, new office development is only financially viable in major towns and cities. Generally, new development requires a pre-let in place to a blue-chip covenant – i.e. on a long lease to a high-quality tenant that is likely always to pay its rent and adhere to its obligations. This structure gives sufficient security to the investment to enable funding to be obtained. For example, office take-up in 2019 to the end of September was 1.8m sq ft, of which 90% of the take-up was Grade A.⁴⁴ Only 460,000 sq ft of speculative schemes are expected to complete in 2019, well below the 5-year average of 1.0m sq ft delivered per annum in the South East.⁴⁵
- 10.4 In recent years the main drivers of demand for new office space have been from finance, professional services, Technology, Media and Telecommunications (TMTs) and flexible workspace providers. Since the referendum to leave the European Union there has been a slight

⁴² <https://www.rpc.co.uk/perspectives/rpc-big-deal/covid-19-and-commercial-tenants-rights-regarding-rent/>

⁴³ Knight Frank, June 2020, COVID-19 What we know, what we expect, what we question

⁴⁴ BNP Paribas, 2019 Q3, South East Offices Review,

⁴⁵ Ibid

cooling of office demand from the finance and professional services, but demand from TMTs and flexible workspace providers remains robust.

Greater Cambridge office market

- 10.5 The Greater Cambridge office market is centred around Cambridge City, where economic growth has been strong despite the Brexit and election uncertainty of the past few years. Cambridge has also emerged as the eastern region's main hub of research & development/ TMTs, there are also some more traditional occupiers such as professional services and finance companies around the area.
- 10.6 The majority of the largest office deals in the city have occurred in the CB1 area, especially around Station Road, with Apple pre let of 80,000 sqft of space, Fora taking 65,000 sqft of space and WeWork taking up 50,000 sqft of space. There is also activity in the north of the city at Cambridge Business Park.
- 10.7 In South Cambridgeshire, the office market is focused mainly around several established office parks such as Vision Park/Pioneer Court, Cambridge Innovation Park in Waterbeach and Cambourne Business Park. There are also a number of notable 'character offices' such as barn conversions, examples of this include Copley Hill Business Park and Magog Court.
- 10.8 Occupiers in these areas range from local to national occupiers, Occupiers include Ziess (advanced manufacturing) who occupy a 43,000 sqft building at Cambourne Business Park and DCI² (Data Storage), who occupy a 30,000 sqft building at Cambridge Research Park.

Office rents

- 10.9 According to Carter Jonas, prime rents in the CB1 area are up to £46.50 psf while prime rents in the northern fringe area are around £36.00 psf. Table 10-1 sets out achieved rents for the Cambridge City area recorded on CoStar. Rents for second-hand units range from £23 psf to £32 psf; with higher quality refurbished units in central Cambridge achieving close to £40 psf. There is no evidence of new build achieved rents available on CoStar.

Table 10-1 - Achieved office rents Cambridge City

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
27/05/2020	Radio House, St Andrews Road, Cambridge, CB4 1GS	Sentec	13,989	£32.00	Recently renovated BREEAM Excellent building, 10-year lease
10/03/2020	Norman House Cambridge Place, Off	Salus Wellness	1,446	£23.00	Central Cambridge

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
	Hills Road, Cambridge CB2 1NS				location, 7 year lease
01/01/2020	95 Regent Street, Cambridge, CB2, 1BQ	Invenia Labs	7,944	£40.00	Recently refurbished city centre offices, 10 year lease
12/02/2020	Kett House, Station Road, CB1 2JY	Apple Europe	17,920	£40.00	5 year lease, moving in August 2020
14/03/2019	Terrington House, 13- 15 Hills Road, Cambridge CB2 1NL	Ramboll UK	3,925	£35.00	Lease Renewal, 5 year lease
06/09/2019	95-97 Regent Street, Cambridge, CB2 1BQ	IQ Capital	2,380	£35.00	10 year lease with 3 months rent free and rent review at year 5 (Effective Rent - £33.85)

Source: CoStar accessed June 2020

- 10.10 Table 10-2 sets out achieved rents for the South Cambridgeshire area recorded on CoStar. Rents for second-hand units range from £14 psf to £31.50 psf; with the higher rents being achieved at high quality office parks such as Granta Park and Vision Park.

Table 10-2 - Achieved office rents South Cambridgeshire

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
23/07/2019	Suite 1 Pioneer House, Chivers Way, Histon, Cambridge, CB24 9NL	Granite Coast	1,766	£25.30	10 year lease with 5 year break and 3 months rent free—effective rent £24.47 psf
15/07/2019	Vision House, 7/8 Oakington Business Park, Dry Drayton Road, CB24 3DQ	The Harrison Group	857	£18.99	Constructed circa 2007, 5 year lease
27/03/2020	Unit 6, Stow Court, Stow Road, Stow- Cum-Quy, Cambridge, CB25 9AS	Barker Associates	1,044	£22.50	Renovated 2019, 5 year lease with tenant break at year 3
29/03/2019	Unit 18, Avenue Business Park, Brockley Road, Cambridge CB23 4EY	S2 Partnership	1,588	£14.16	Barn conversion offices, 3 year lease

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
01/08/2018	10 Bennell Court West Street, Comberton, CB23 7EN	Johnstones Homecare	460	£18.47	2 year lease

Source: Source: CoStar accessed June 2020

Office yields Cambridge City

10.11 There is little evidence of recent office investment activity in Cambridge city recorded on CoStar. Table 10-3 shows these investment transactions, with yields between 5.6%-5.89%, these properties are located in the fringe areas of the city. In addition to this, Bidwells report a prime yield of 4.50% for offices in Cambridge City.

Table 10-3 - Office investment transactions Cambridge City

Date of transaction	Address	Tenant	Size sqft	Net Initial Yield	Comment
31/05/2019	Chartwell House, 620 Newmarket Road, CB5 8LP	Multi-let	5,092	4.8%	Fully occupied, Reversionary yield set to be 6.5%
11/04/2019	23 Signet Court Cambridge CB5 8LA	The Richmond Fellowship	1,267	5.89%	Fully occupied, Lease lengths mostly 10 years with 5 year breaks.

Source: CoStar, accessed June 2020

10.12 There is limited recent evidence of office investment yields available for the district on CoStar, therefore, we have also considered the wider area. Table 10-4 shows that yields range between 6.01% and 6.36%. Knight Frank yield evidence supports the CoStar evidence, with their research indicating that office yields in secondary towns and office parks are approximately 5.25%+.⁴⁶

Table 10-4 - Office investment transactions South Cambridgeshire

Date of transaction	Address	Tenant	Size sqft	Net Initial Yield	Comment
01/10/2018	1-3 De La Warr Way, Cambourne, Cambridge, CB23 6DX	Multilet	1,538	6.01%	Auction Sale, Fully occupied

⁴⁶ Knight Frank, Yield Guide May 2020

27/03/2019	1 Cates Corner, Hill Street, Saffron Walden, Essex, CB10 1LU	Saffron Security	1,244	6.36%	High street office, new letting from 18th December 2018 until 18th December 2023.
23/11/2018	Western House, 2 Cambridge Road, Stansted Mountfitchet, CM24 8BZ	Multiliet	7,640	6.35%	Fully occupied, Lease lengths mostly 10 years with 5 year breaks.

Source: CoStar, accessed June 2020

Conclusion

10.13 Based on the above evidence we have proposed to test the following:

- CBD offices
 - Rent £495 psm (£46 psf)
 - Yield 5%
- Cambridge fringe office parks
 - Rent £215 psm (£23 psf)
 - Yield 5.5%
- Rural office parks (1,000 sqft)
 - Rent £215 psm (£25 psf)
 - Yield 7%

11 Industrial market assessment

Introduction

- 11.1 Prior to the Covid-19 lockdown, the UK industrial market was tight, with growing demand pushing against restricted supply.
- 11.2 In the years before the recession caused by the Global Financial Crisis, the industrial market saw a wave of speculative development, fuelled by easy access to finance. Much of the new space that resulted remained on the market as occupier demand weakened in the recession, so speculative development came to a halt. In more recent years supply has tightened against demand, due to the economic recovery, the increase in online shopping (which needs warehouse space) and some industrial units being lost to higher-value residential uses.
- 11.3 Due to the tight nature of the funding markets, speculative development is generally only occurring in 'super-prime' areas such as parts of the M1 corridor, Heathrow, etc. Those areas have very strong occupier demand from blue-chip covenants, who are prepared to commit to longer-term leases (typically more than 10 years), therefore the perceived risk is low. Elsewhere, speculative development is generally occurring only for larger units that can be occupied by these large national /international firms.
- 11.4 The economics for small and mid-sized units is different from large-scale distribution units, both in terms of cost and values. Smaller and mid-sized units do not benefit from economies of scale for build costs as large units do. Covenant strength of occupiers of smaller units is generally weaker and result in less secure income, which is guaranteed for shorter periods due to shorter lease terms, and hence lower capital values. Consequently, small and medium-sized development typically occurs only on existing employment sites - where infrastructure is currently in place; or as part of larger strategic schemes, whereby the large-scale distribution units can pay for the infrastructure to service the smaller and mid-sized units.
- 11.5 Concerning small and mid-size units, the lack of speculative development has led to an imbalance in the market, with some occupiers having to wait for the build to suit opportunities, or taking second-hand space to satisfy immediate requirements although they would prefer new space. With a lack of suitable medium-sized space, occupiers across the country are struggling to find suitable space for business expansion. This is having a knock-on effect, with smaller units not experiencing 'natural' levels of market churn, therefore not freeing up space for SMEs and start-ups.
- 11.6 Since the coronavirus lockdown the industrial market appears to be performing well. Demand for online retail has increased significantly and manufactures have sought to re-purpose space to respond to the government's need for protective equipment.

Industrial market Greater Cambridge

- 11.7 The Greater Cambridge area has a relatively small number of industrial estates due to competition from more valuable land uses with units mostly being small and medium sized buildings that range in age. The main industrial areas are focused around Cambridge City close to the airport and railway station. There are smaller “pockets” of units elsewhere. There has not been much recent new build development, but what has come forward are mid sized units between 20,000 sqft and 35,000 sqft. The majority of the industrial stock in the area is second-hand and of reasonable quality, although there are cases where units are over 60 years old and are coming to the end of their economic lives.
- 11.8 The area benefits from a mix of sectors, although there is a greater focus of advanced manufacturing around Cambridge City due to the research and development facilities at the university. Other sectors around Greater Cambridge include general manufacturing, local trade counter services, automotive services and some general manufacturing.
- 11.9 Demand for industrial space in Greater Cambridge is from a mix of local, regional and national companies, with the larger regional/national occupiers wanting access to Cambridge’s highly skilled labour force. In recent years, there has been a growing demand from occupiers seeking suitable “mid-tech” space, which industrial space that also includes offices and communal areas.

Industrial rents

- 11.10 Carter Jones report⁴⁷ that prime rents for trade counter units in Cambridge are £16.50 psf, falling to £13.50 psf for general industrial.
- 11.11 Table 11-1 shows that rents industrial range between £7.89 psf and £12.50 psf with the higher rents being achieved at Enterprise 5000, a new development at Cambridge Research Park which was built for the “mid-tech” market.

Table 11-1 - Industrial occupational transactions

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
01/04/2020	Unit 8 Enterprise 5000 – Cambridge Research Park, CB25 9PD	Grifols (Pharmaceuticals)	13,879	£12.50	Listed as being on the market for 28 months, New build space. 10-year lease with rent-free period spread over term- – effective rent £11.70 psf

⁴⁷ Carter Jonas, 2020, Commercial Edge Spring 2020

Lease signed date	Address	Tenant	Size sqft	Rent £ psf	Comment
26/04/2020	Unit 9 Nuffield Road, Cambridge, CB4 1TF	Unknown	11,714 (including 2,550 sqft offices)	£10.67	1980's steel portal framed building. 10-year lease
02/03/2020	Unit E, Trinity Hall Farm Industrial Estate, Cambridge, CB4 1TG	Fenley Foods	1,160	£11.64	New build space. 5-year lease with 3-year break
01/12/2019	Suite 9, Babraham Road, Cambridge, CB22 3JH	Echion Technologies (advanced manufacturing)	2,386	£10.00	10-year lease with 6 months rent free and 5 year tenant break – effective rent £9.35 psf
25/11/2019	Unit 400, Buckingway Business Park, CB24 4AE	Network Rail	50,284	£8.95	New build space. 10-year lease
19/10/2019	Copley Hill Business Park - Babraham Road	PMS Cambridge	1,530	£11.24	Renovated in 2008. 7-year lease.
12/07/2019	Unit 5 The Links, Trafalgar Way, Bar Hill, CB23 8UD	Laborsing	6,135 (including 769 sqft offices)	£8.15	1990s industrial Building. 10-year lease.
08/05/2019	11-11A Nuffield Road, Cambridge, CB4 1TF	Cambridge Office Environments	6,147	£7.89	1960s building. 10-year lease.

Source: CoStar, accessed June 2020

Industrial yields

11.12 Carter Jonas report⁴⁷ that prime industrial yields in Cambridge are 5.5%. There is limited evidence of investment transactions recorded on CoStar so we have considered evidence from the neighbouring East Cambridgeshire area. Table 11-2 shows investment transactions are achieving between 4.05% and 7.49% yields. Due to the lack of available data on CoStar, we have also reviewed the Knight Frank Yield Guide⁴⁸ which states that Good modern estates are at a yield of 4.75%-5%, lower than the recent transactions.

⁴⁸ Knight Frank, 2019, Investment yield guide December 2019

Table 11-2 - Industrial investment transactions

Date of transaction	Address	Tenant	Size sqft	Net Initial Yield	Comment
01/07/2019	Unit K Broad Lane Industrial Estate, Cottenham, Cambridgeshire, CB24 8SW	Retrofit UK	13,967	7.49%	Modern purpose-built industrial building. Let on a 20 year lease
25/09/2019	6-7 Coldhams Road, Cambridge, CB1 3EW	Multi-let – tenants include; Topps Tiles and Howdens	10,445	4.05%	Modern purpose build light industrial building.
08/02/2019	Plot 9, St Leger Drive, Newmarket, CB8 7DT	Unknown	22,582	5%	Built to a Grade A in November 2013, CoStar states that it was one of the first BREEAM Excellent buildings to be delivered in the UK.

Source: CoStar, accessed March 2020

Conclusion

11.13 Based on the above evidence we propose to use a rent of £145 psm (£13.50 psf) and variable yield of between 5.5% and 6%.

Appendix 1 – Residential Sale Value Evidence

Cambridge City new build sales

Date	Number	Street	Settlement	Postcode	Type	Size sqm	Size sqft	Price Paid	Price psm
29/11/2019	22	SHREWSBURY ROAD		CB3 0SJ	Detached	137	1475	£599,995	£4,380
28/06/2019	105	EDDINGTON AVENUE		CB3 1SE	Detached	210	2260	£1,020,000	£4,857
23/12/2019	26	SHREWSBURY ROAD		CB3 0SJ	Detached	116	1249	£574,995	£4,957
28/06/2019	29	SHREWSBURY ROAD		CB3 0SJ	Detached	137	1475	£691,995	£5,051
09/05/2019	16	SHREWSBURY ROAD		CB3 0SJ	Detached	116	1249	£625,995	£5,397
24/05/2019	18	SHREWSBURY ROAD		CB3 0SJ	Detached	116	1249	£625,995	£5,397
20/12/2019	45	RANDAL WAY		CB3 0RZ	Detached	109	1173	£590,995	£5,422
26/04/2019	14	SHREWSBURY ROAD		CB3 0SJ	Detached	109	1173	£590,995	£5,422
20/12/2019	47	RANDAL WAY		CB3 0RZ	Detached	109	1173	£599,995	£5,505
20/12/2019	49	RANDAL WAY		CB3 0RZ	Detached	109	1173	£599,995	£5,505
31/05/2019	25	SHREWSBURY ROAD		CB3 0SJ	Detached	104	1119	£590,995	£5,683
30/11/2018	12	WALTON WAY		CB3 1AX	Detached	115	1238	£730,000	£6,348
30/04/2019	17	EDDINGTON AVENUE		CB3 1SE	Flat	71	764	£330,450	£4,654
13/12/2019	129	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	69	743	£355,000	£5,145
15/03/2019	1	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	92	990	£474,950	£5,163
30/12/2019	119	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	69	743	£370,000	£5,362
18/12/2019	121	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	69	743	£370,000	£5,362
23/12/2019	111	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	69	743	£373,750	£5,417
13/09/2019	15	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	88	947	£485,000	£5,511
18/12/2018	81	EDDINGTON AVENUE		CB3 1SE	Flat	122	1313	£674,950	£5,532
16/09/2019	19	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	67	721	£373,000	£5,567
18/09/2019	63	EDDINGTON AVENUE		CB3 1SE	Flat	63	678	£360,000	£5,714
22/03/2019	31	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	98	1055	£570,000	£5,816
17/01/2020	137	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	69	743	£402,000	£5,826
20/12/2019	55	THE ASH BUILDING	RUDDUCK '	CB3 1BG	Flat	58	624	£344,950	£5,947
29/11/2019	107	THE ASH BUILDING	RUDDUCK '	CB3 1BG	Flat	120	1292	£714,950	£5,958
28/06/2019	3	MILNE AVENUE		CB3 1BD	Flat	75	807	£451,950	£6,026
25/09/2019	67	THE ASH BUILDING	RUDDUCK '	CB3 1BG	Flat	58	624	£350,000	£6,034
28/01/2019	5	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	86	926	£525,000	£6,105
23/05/2019	11	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	79	850	£484,950	£6,139
20/12/2018	13	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	77	829	£474,950	£6,168
14/12/2018	23	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	79	850	£489,450	£6,196
25/11/2019	81	THE ASH BUILDING	RUDDUCK '	CB3 1BG	Flat	58	624	£362,500	£6,250
22/10/2019	93	THE ASH BUILDING	RUDDUCK '	CB3 1BG	Flat	80	861	£505,000	£6,313
31/10/2019	95	THE ASH BUILDING	RUDDUCK '	CB3 1BG	Flat	58	624	£370,000	£6,379
28/06/2019	113	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	69	743	£443,995	£6,435
28/06/2019	117	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	69	743	£444,995	£6,449
14/12/2018	45	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	132	1421	£855,000	£6,477
28/06/2019	139	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	48	517	£310,995	£6,479
27/09/2019	141	LAWRENCE WEAVER ROAD		CB3 0GX	Flat	48	517	£310,995	£6,479
16/05/2019	67	EDDINGTON AVENUE		CB3 1SE	Flat	91	980	£590,000	£6,484
27/11/2019	105	THE ASH BUILDING	RUDDUCK '	CB3 1BG	Flat	56	603	£366,250	£6,540
18/12/2018	91	EDDINGTON AVENUE		CB3 1SE	Flat	91	980	£599,950	£6,593
18/12/2018	95	EDDINGTON AVENUE		CB3 1SE	Flat	62	667	£420,000	£6,774
30/09/2019	115	THE ASH BUILDING	RUDDUCK '	CB3 1BG	Flat	56	603	£382,500	£6,830
18/12/2018	89	EDDINGTON AVENUE		CB3 1SE	Flat	61	657	£423,500	£6,943
04/11/2019	79	EDDINGTON AVENUE		CB3 1SE	Flat	43	463	£299,950	£6,976
18/12/2018	51	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	109	1173	£780,000	£7,156
18/12/2018	87	EDDINGTON AVENUE		CB3 1SE	Flat	78	840	£560,000	£7,179
24/05/2019	69	EDDINGTON AVENUE		CB3 1SE	Flat	61	657	£440,000	£7,213
18/12/2018	97	EDDINGTON AVENUE		CB3 1SE	Flat	55	592	£398,995	£7,254
28/06/2019	1	MILNE AVENUE		CB3 1BD	Flat	48	517	£349,950	£7,291
18/12/2018	37	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	77	829	£569,950	£7,402
18/12/2018	93	EDDINGTON AVENUE		CB3 1SE	Flat	48	517	£365,000	£7,604
14/12/2018	2	MILNE AVENUE		CB3 1BD	Flat	38	409	£295,000	£7,763
31/10/2019	73	EDDINGTON AVENUE		CB3 1SE	Flat	38	409	£299,950	£7,893
15/03/2019	85	EDDINGTON AVENUE		CB3 1SE	Flat	38	409	£299,950	£7,893
07/12/2018	4	MILNE AVENUE		CB3 1BD	Flat	40	431	£320,000	£8,000
28/06/2019	17	THE BEECH BUILDING	RUDDUCK '	CB3 1BF	Flat	45	484	£360,952	£8,021
29/11/2019	28	SHREWSBURY ROAD		CB3 0SJ	Semi Detache	137	1475	£599,995	£4,380
09/12/2019	12	SHREWSBURY ROAD		CB3 0SJ	Semi Detache	137	1475	£610,000	£4,453
28/06/2019	27	SHREWSBURY ROAD		CB3 0SJ	Semi Detache	137	1475	£689,995	£5,036
26/11/2019	32	SHREWSBURY ROAD		CB3 0SJ	Terraced	137	1475	£589,995	£4,307
18/12/2019	24	SHREWSBURY ROAD		CB3 0SJ	Terraced	137	1475	£599,995	£4,380
13/12/2019	30	SHREWSBURY ROAD		CB3 0SJ	Terraced	137	1475	£599,995	£4,380
28/06/2019	103	EDDINGTON AVENUE		CB3 1SE	Terraced	210	2260	£987,000	£4,700
30/09/2019	53	EDDINGTON AVENUE		CB3 1SE	Terraced	210	2260	£1,099,950	£5,238
17/05/2019	101	EDDINGTON AVENUE		CB3 1SE	Terraced	210	2260	£1,099,950	£5,238
27/09/2018	14	WALTON WAY		CB3 1AX	Terraced	115	1238	£750,000	£6,522

Date	Numb Street	Settlement	Postcode	Type	Size sqm	Size sqft	Price Paid	Price psm
22/05/2018	15 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Detached	344	3703	£1,300,000	£3,779
29/03/2019	5 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Detached	242	2605	£925,000	£3,822
18/07/2018	5 PINNINGTON CLOSE	TRUMPINGTON	CB2 9EY	Detached	333	3584	£1,328,250	£3,989
11/12/2018	3 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Detached	242	2605	£1,000,000	£4,132
28/09/2018	1 PINNINGTON CLOSE	TRUMPINGTON	CB2 9EY	Detached	266	2863	£1,109,950	£4,173
19/12/2018	91 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Detached	198	2131	£830,000	£4,192
26/04/2019	101 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Detached	198	2131	£830,000	£4,192
29/06/2018	1 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Detached	247	2659	£1,050,000	£4,251
22/02/2019	9 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Detached	247	2659	£1,050,000	£4,251
25/05/2018	7 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Detached	242	2605	£1,050,000	£4,339
25/06/2018	3 PINNINGTON CLOSE	TRUMPINGTON	CB2 9EY	Detached	239	2573	£1,065,000	£4,456
26/06/2019	103 SOUTHWELL DRIVE	TRUMPINGTON	CB2 9DQ	Detached	130	1399	£589,995	£4,538
21/12/2018	93 SOUTHWELL DRIVE	TRUMPINGTON	CB2 9DQ	Detached	130	1399	£595,000	£4,577
15/03/2019	91 SOUTHWELL DRIVE	TRUMPINGTON	CB2 9DQ	Detached	130	1399	£599,995	£4,615
27/09/2019	101 SOUTHWELL DRIVE	TRUMPINGTON	CB2 9DQ	Detached	130	1399	£599,995	£4,615
28/09/2018	14 BROOK END CLOSE	TRUMPINGTON	CB2 9DB	Detached	164	1765	£764,000	£4,659
06/02/2019	9 WOODPECKER WAY	TRUMPINGTON	CB2 9FB	Detached	146	1572	£699,995	£4,794
19/02/2019	15 ALLBUTT WAY	TRUMPINGTON	CB2 9DU	Detached	124	1335	£595,000	£4,798
25/10/2019	5 BROOK END CLOSE	TRUMPINGTON	CB2 9DB	Detached	228	2454	£1,100,000	£4,825
20/11/2018	77 SOUTHWELL DRIVE	TRUMPINGTON	CB2 9DQ	Detached	171	1841	£826,495	£4,833
21/05/2018	67 SOUTHWELL DRIVE	TRUMPINGTON	CB2 9DQ	Detached	171	1841	£826,500	£4,833
21/12/2018	13 ALLBUTT WAY	TRUMPINGTON	CB2 9DU	Detached	124	1335	£600,000	£4,839
25/07/2019	7 BROOK END CLOSE	TRUMPINGTON	CB2 9DB	Detached	228	2454	£1,110,000	£4,868
05/08/2019	1 BROOK END CLOSE	TRUMPINGTON	CB2 9DB	Detached	228	2454	£1,150,000	£5,044
08/04/2019	3 BROOK END CLOSE	TRUMPINGTON	CB2 9DB	Detached	228	2454	£1,200,000	£5,263
13/06/2018	16 DOBSON WAY	TRUMPINGTON	CB2 9ES	Flat	169	1819	£599,950	£3,550
26/07/2018	79 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	107	1152	£445,000	£4,159
23/04/2019	103 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Flat	198	2131	£850,000	£4,293
20/09/2019	22 STACEY ROAD	TRUMPINGTON	CB2 9FG	Flat	116	1249	£535,000	£4,612
26/07/2019	115 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	128	1378	£600,000	£4,688
27/09/2019	93 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	91	980	£460,000	£5,055
26/07/2019	111 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	82	883	£415,000	£5,061
16/10/2019	7 CHAPLEN STREET	TRUMPINGTON	CB2 9AT	Flat	70	753	£355,000	£5,071
29/11/2019	64 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	71	764	£363,000	£5,113
26/07/2018	59 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	85	915	£445,000	£5,235
31/07/2018	61 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	85	915	£445,000	£5,235
27/07/2018	75 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	85	915	£445,000	£5,235
20/09/2019	58 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	81	872	£426,000	£5,259
11/09/2019	99 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	89	958	£470,000	£5,281
19/09/2019	56 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	71	764	£375,000	£5,282
30/09/2019	95 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	70	753	£370,000	£5,286
27/09/2019	28 STACEY ROAD	TRUMPINGTON	CB2 9FG	Flat	85	915	£450,000	£5,294
19/09/2019	50 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	81	872	£430,000	£5,309
16/08/2019	101 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	89	958	£475,000	£5,337
05/07/2019	103 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	89	958	£475,000	£5,337
26/07/2018	69 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	85	915	£460,000	£5,412
23/09/2019	72 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	71	764	£385,000	£5,423
30/08/2019	5 CHAPLEN STREET	TRUMPINGTON	CB2 9AT	Flat	70	753	£380,000	£5,429
18/09/2019	52 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	78	840	£425,000	£5,449
27/07/2018	77 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	85	915	£465,000	£5,471
27/07/2018	57 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	76	818	£420,000	£5,526
20/09/2019	66 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	81	872	£450,000	£5,556
26/07/2018	65 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	76	818	£425,000	£5,592
25/02/2019	81 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	107	1152	£599,700	£5,605
17/07/2019	113 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	70	753	£395,000	£5,643
26/07/2019	38 STACEY ROAD	TRUMPINGTON	CB2 9FG	Flat	54	581	£307,500	£5,694
28/06/2019	44 STACEY ROAD	TRUMPINGTON	CB2 9FG	Flat	54	581	£307,500	£5,694
16/08/2019	30 STACEY ROAD	TRUMPINGTON	CB2 9FG	Flat	54	581	£310,000	£5,741
19/08/2019	36 STACEY ROAD	TRUMPINGTON	CB2 9FG	Flat	54	581	£310,000	£5,741
20/09/2019	48 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	55	592	£320,000	£5,818
01/08/2018	63 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	76	818	£445,000	£5,855

28/07/2018	71 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	76	818	£445,000	£5,855
10/08/2018	23 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	76	818	£455,000	£5,987
07/08/2018	83 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Flat	107	1152	£670,000	£6,262
04/09/2019	9 CHAPLEN STREET	TRUMPINGTON	CB2 9AT	Flat	34	366	£213,000	£6,265
23/08/2019	3 CHAPLEN STREET	TRUMPINGTON	CB2 9AT	Flat	48	517	£320,000	£6,667
22/01/2020	32 STACEY ROAD	TRUMPINGTON	CB2 9FG	Flat	38	409	£260,000	£6,842
25/10/2019	70 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	39	420	£267,000	£6,846
26/07/2019	107 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	46	495	£315,000	£6,848
26/07/2019	109 ADDENBROOKE'S ROAD	TRUMPINGTON	CB2 9AS	Flat	46	495	£315,000	£6,848
29/11/2019	54 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Flat	39	420	£275,000	£7,051
28/03/2019	14 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Semi Detac	278	2992	£1,000,000	£3,597
27/03/2019	12 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Semi Detac	278	2992	£1,125,000	£4,047
13/12/2018	18 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Semi Detac	278	2992	£1,125,000	£4,047
29/08/2018	16 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Semi Detac	278	2992	£1,150,000	£4,137
31/07/2018	20 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Semi Detac	175	1884	£735,000	£4,200
31/05/2018	22 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Semi Detac	175	1884	£735,000	£4,200
26/10/2018	103 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Semi Detac	269	2896	£1,150,000	£4,275
14/09/2018	8 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Semi Detac	278	2992	£1,200,000	£4,317
07/09/2018	105 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Semi Detac	269	2896	£1,200,000	£4,461
20/09/2018	10 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Semi Detac	278	2992	£1,250,000	£4,496
31/07/2018	7 WOODPECKER WAY	TRUMPINGTON	CB2 9FB	Semi Detac	146	1572	£675,000	£4,623
07/12/2018	107 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Semi Detac	269	2896	£1,250,000	£4,647
29/06/2018	69 SOUTHWELL DRIVE	TRUMPINGTON	CB2 9DQ	Semi Detac	171	1841	£840,000	£4,912
29/06/2018	19 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Semi Detac	146	1572	£725,000	£4,966
31/08/2018	23 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Semi Detac	146	1572	£725,000	£4,966
31/10/2019	147 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	194	2088	£725,000	£3,737
30/04/2019	7 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Terraced	160	1722	£600,000	£3,750
31/12/2019	109 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	194	2088	£735,800	£3,793
13/12/2019	151 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	194	2088	£740,000	£3,814
28/03/2019	3 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Terraced	160	1722	£612,000	£3,825
08/02/2019	107 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	157	1690	£610,000	£3,885
08/02/2019	115 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	157	1690	£610,000	£3,885
03/09/2019	153 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	157	1690	£620,000	£3,949
26/09/2019	110 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Terraced	172	1851	£679,995	£3,953
20/12/2019	113 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	194	2088	£767,500	£3,956
29/03/2019	4 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Terraced	175	1884	£699,995	£4,000
26/03/2019	6 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Terraced	175	1884	£699,995	£4,000
07/12/2018	27 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Terraced	205	2207	£819,995	£4,000
06/11/2019	108 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Terraced	172	1851	£689,995	£4,012
03/05/2019	157 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	157	1690	£630,000	£4,013
30/11/2018	93 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	198	2131	£795,000	£4,015
30/04/2019	117 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	194	2088	£780,000	£4,021
17/05/2019	9 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Terraced	160	1722	£650,000	£4,063
31/10/2019	112 FOWLER AVENUE	TRUMPINGTON	CB2 9FH	Terraced	172	1851	£699,995	£4,070
04/01/2019	11 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Terraced	160	1722	£655,000	£4,094
13/08/2018	2 STALLAN CLOSE	TRUMPINGTON	CB2 9FQ	Terraced	175	1884	£720,000	£4,114
29/06/2018	1 WOODPECKER WAY	TRUMPINGTON	CB2 9FB	Terraced	160	1722	£663,000	£4,144
17/12/2018	89 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	198	2131	£825,000	£4,167
12/07/2019	159 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	194	2088	£810,000	£4,175
20/12/2018	105 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	194	2088	£815,000	£4,201
03/07/2019	149 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	157	1690	£660,000	£4,204
20/12/2018	4 BROOK END CLOSE	TRUMPINGTON	CB2 9DB	Terraced	164	1765	£690,000	£4,207
23/10/2018	5 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Terraced	160	1722	£674,995	£4,219
30/11/2018	6 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Terraced	160	1722	£674,995	£4,219
15/04/2019	46 HAWKEY ROAD	TRUMPINGTON	CB2 9EX	Terraced	148	1593	£625,000	£4,223
07/12/2018	95 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	198	2131	£840,000	£4,242
30/11/2018	95 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Terraced	160	1722	£681,995	£4,262
31/10/2018	16 BROOK END CLOSE	TRUMPINGTON	CB2 9DB	Terraced	164	1765	£700,000	£4,268
30/05/2018	18 BROOK END CLOSE	TRUMPINGTON	CB2 9DB	Terraced	164	1765	£700,000	£4,268
20/06/2019	50 STACEY ROAD	TRUMPINGTON	CB2 9FG	Terraced	171	1841	£730,000	£4,269
22/05/2018	77 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	202	2174	£865,000	£4,282
17/07/2019	48 STACEY ROAD	TRUMPINGTON	CB2 9FG	Terraced	160	1722	£689,995	£4,312

07/02/2019	111 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	157	1690	£682,500	£4,347
12/06/2018	30 WINDMILL DRIVE	TRUMPINGTON	CB2 9FA	Terraced	344	3703	£1,500,000	£4,360
23/11/2018	93 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Terraced	160	1722	£699,995	£4,375
15/11/2018	97 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Terraced	160	1722	£699,995	£4,375
29/03/2019	44 HAWKEY ROAD	TRUMPINGTON	CB2 9EX	Terraced	148	1593	£650,000	£4,392
20/09/2018	48 HAWKEY ROAD	TRUMPINGTON	CB2 9EX	Terraced	148	1593	£650,000	£4,392
12/09/2018	50 HAWKEY ROAD	TRUMPINGTON	CB2 9EX	Terraced	148	1593	£650,000	£4,392
26/10/2018	87 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BX	Terraced	198	2131	£875,000	£4,419
28/10/2019	26 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	164	1765	£725,000	£4,421
10/06/2019	28 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	164	1765	£726,500	£4,430
30/11/2018	11 WOODPECKER WAY	TRUMPINGTON	CB2 9FB	Terraced	160	1722	£715,000	£4,469
16/11/2018	3 WOODPECKER WAY	TRUMPINGTON	CB2 9FB	Terraced	146	1572	£674,995	£4,623
29/10/2018	101 HAWKEY ROAD	TRUMPINGTON	CB2 9ET	Terraced	269	2896	£1,250,000	£4,647
31/10/2018	98 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	137	1475	£647,000	£4,723
07/08/2019	81 SOUTHWELL DRIVE	TRUMPINGTON	CB2 9DQ	Terraced	140	1507	£670,000	£4,786
26/06/2018	5 WOODPECKER WAY	TRUMPINGTON	CB2 9FB	Terraced	146	1572	£699,995	£4,794
22/10/2018	86 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	137	1475	£662,000	£4,832
12/04/2019	90 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	125	1346	£618,000	£4,944
29/06/2018	3 WHITTLE AVENUE	TRUMPINGTON	CB2 9BW	Terraced	108	1163	£550,000	£5,093
01/08/2019	88 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	125	1346	£640,000	£5,120
30/10/2018	94 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	125	1346	£655,000	£5,240
25/10/2018	96 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	125	1346	£655,000	£5,240
29/06/2018	17 ALLBUTT WAY	TRUMPINGTON	CB2 9DU	Terraced	124	1335	£650,000	£5,242
30/10/2018	92 CLAY FARM DRIVE	TRUMPINGTON	CB2 9BY	Terraced	125	1346	£660,000	£5,280

Date	Number	Street	Settlement	Postcode	Type	Size sqf	Size sqft	Price Paid	Price psm
31/07/2019	62	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Terraced	209	2250	£884,950	£4,234
28/06/2019	58	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Terraced	209	2250	£899,950	£4,306
21/03/2019	48	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Terraced	209	2250	£920,000	£4,402
19/12/2018	41	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	171	1841	£770,000	£4,503
29/10/2018	90	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Terraced	260	2799	£1,175,000	£4,519
07/06/2019	3	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	149	1604	£675,000	£4,530
14/06/2019	7	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	149	1604	£689,950	£4,631
11/06/2019	5	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	149	1604	£695,000	£4,664
14/12/2018	66	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Terraced	209	2250	£975,000	£4,665
31/05/2019	1	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	149	1604	£699,950	£4,698
14/06/2019	9	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	149	1604	£699,950	£4,698
29/05/2019	11	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	149	1604	£699,950	£4,698
03/10/2018	86	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Terraced	260	2799	£1,250,000	£4,808
01/07/2019	17	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	183	1970	£884,950	£4,836
19/12/2019	13	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	183	1970	£899,950	£4,918
05/07/2019	21	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	183	1970	£910,000	£4,973
18/07/2019	19	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	183	1970	£917,500	£5,014
31/05/2019	44	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Terraced	183	1970	£999,000	£5,459
22/06/2018	27	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Terraced	119	1281	£715,000	£6,008
28/06/2019	46	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Terraced	183	1970	£1,150,000	£6,284
30/11/2018	72	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Semi Detached	260	2799	£1,235,000	£4,750
18/12/2019	40	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Semi Detached	183	1970	£905,000	£4,945
30/08/2019	42	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Semi Detached	183	1970	£915,000	£5,000
15/03/2019	18	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Flat	82	883	£400,000	£4,878
06/07/2018	16	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Flat	76	818	£405,000	£5,329
01/08/2018	10	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Flat	71	764	£400,000	£5,634
20/12/2018	2	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Flat	69	743	£396,000	£5,739
30/08/2019	26	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Flat	69	743	£418,000	£6,058
18/12/2018	14	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Flat	70	753	£429,950	£6,142
20/09/2019	20	URWIN GARDENS	CAMBRIDGE	CB2 0AP	Flat	81	872	£503,953	£6,222
17/12/2018	16	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Flat	51	549	£349,950	£6,862
21/10/2019	32	URWIN GARDENS	CAMBRIDGE	CB2 0AP	Flat	69	743	£474,000	£6,870
31/10/2019	18	URWIN GARDENS	CAMBRIDGE	CB2 0AP	Flat	75	807	£526,350	£7,018
31/01/2020	30	URWIN GARDENS	CAMBRIDGE	CB2 0AP	Flat	44	474	£360,000	£8,182
11/06/2018	92	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	260	2799	£1,165,000	£4,481
31/07/2018	88	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	260	2799	£1,199,950	£4,615
07/12/2018	96	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	149	1604	£690,000	£4,631
17/12/2018	102	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	149	1604	£714,950	£4,798
29/06/2018	94	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	260	2799	£1,250,000	£4,808
24/05/2018	39	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Detached	171	1841	£825,000	£4,825
18/01/2019	98	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	149	1604	£724,950	£4,865
29/08/2019	104	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	149	1604	£734,950	£4,933
08/10/2018	118	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	172	1851	£888,888	£5,168
27/07/2018	100	KNIGHTLY AVENUE	CAMBRIDGE	CB2 0AL	Detached	149	1604	£815,000	£5,470
18/06/2018	29	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Detached	119	1281	£715,000	£6,008
26/06/2018	25	MUSGRAVE DRIVE	CAMBRIDGE	CB2 0AQ	Detached	119	1281	£725,000	£6,092

Date	Numbe Street	Settlement	Postcode	Type	Beds	Size sqm	Size sqft	Price Paid	Price psm
29/06/2018	1 PORTER ROAD	TRUMPINGTON	CB2 9GF	Detached	3	110	1184	£599,995	£5,455
29/03/2019	2 PORTER ROAD	TRUMPINGTON	CB2 9GF	Detached	3	110	1184	£599,995	£5,455
28/06/2019	7 PLOUGHMAN WAY	TRUMPINGTON	CB2 9GE	Detached	4	138	1485	£599,995	£4,348
21/12/2018	3 PORTER ROAD	TRUMPINGTON	CB2 9GF	Detached	4	138	1485	£669,995	£4,855
29/06/2018	18 MARDLER CLOSE	TRUMPINGTON	CB2 9FY	Detached	5	155	1668	£719,995	£4,645
28/08/2018	145 OSPREY DRIVE	TRUMPINGTON	CB2 9FU	Detached	5	158	1701	£799,995	£5,063
29/06/2018	33 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	1	57	614	£299,995	£5,263
29/06/2018	35 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	1	54	581	£299,995	£5,555
14/08/2018	47 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	1	54	581	£309,995	£5,741
05/06/2018	45 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	1	57	614	£339,995	£5,965
25/05/2018	11 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	1	49	527	£299,995	£6,122
03/09/2018	41 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	1	48	517	£299,995	£6,250
01/06/2018	17 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	1	49	527	£329,995	£6,735
18/06/2018	29 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	1	48	517	£326,995	£6,812
25/05/2018	7 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	82	883	£389,995	£4,756
29/03/2019	21 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	69	743	£350,000	£5,072
29/06/2018	49 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	75	807	£389,995	£5,200
20/06/2019	58 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	82	883	£429,995	£5,244
20/12/2018	5 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	68	732	£360,000	£5,294
26/06/2019	66 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	82	883	£434,995	£5,305
03/12/2019	68 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	82	883	£434,995	£5,305
07/06/2019	42 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	82	883	£435,000	£5,305
01/06/2018	37 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	75	807	£399,995	£5,333
28/03/2019	68 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	80	861	£430,500	£5,381
30/05/2019	36 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	80	861	£434,995	£5,437
20/01/2020	70 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	80	861	£434,995	£5,437
27/02/2019	76 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	80	861	£435,000	£5,438
11/06/2019	40 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	79	850	£429,995	£5,443
14/06/2019	62 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	75	807	£410,000	£5,467
06/06/2019	44 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	80	861	£439,995	£5,500
18/12/2019	72 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	79	850	£434,995	£5,506
19/12/2018	32 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	79	850	£435,000	£5,506
25/05/2018	13 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	67	721	£369,995	£5,522
20/12/2018	39 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	65	700	£360,000	£5,538
20/06/2019	52 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	80	861	£444,995	£5,562
11/01/2019	34 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	79	850	£444,995	£5,633
12/07/2018	26 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	68	732	£386,995	£5,691
05/11/2018	56 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	79	850	£449,995	£5,696
28/06/2018	25 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	67	721	£384,995	£5,746
30/10/2019	72 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	75	807	£434,995	£5,800
01/06/2018	31 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	67	721	£389,995	£5,821
01/06/2018	19 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	67	721	£392,995	£5,866
25/06/2018	43 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	67	721	£392,995	£5,866
25/06/2018	27 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	65	700	£383,995	£5,908
11/07/2018	36 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	82	883	£484,995	£5,915
16/11/2018	60 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	80	861	£474,995	£5,937
08/07/2019	48 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	79	850	£469,995	£5,949
15/06/2018	44 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	82	883	£489,995	£5,976
28/09/2018	74 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	82	883	£489,995	£5,976
20/12/2018	50 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	82	883	£489,995	£5,976
25/05/2018	9 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	64	689	£383,995	£6,000
25/05/2018	15 BERWICK PLACE	TRUMPINGTON	CB2 9EU	Flat	2	64	689	£385,995	£6,031
12/11/2018	42 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	79	850	£477,995	£6,051
29/06/2018	38 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	80	861	£484,995	£6,062
05/09/2018	46 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	80	861	£489,995	£6,125
18/06/2018	40 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	75	807	£474,995	£6,333
14/06/2019	78 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	2	77	829	£530,000	£6,883
28/06/2019	54 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	2	77	829	£535,000	£6,948
17/10/2018	26 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	3	110	1184	£449,995	£4,091
14/05/2019	50 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	3	98	1055	£599,999	£6,122
12/07/2019	80 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	3	98	1055	£629,995	£6,429
21/01/2019	56 RENARD WAY	TRUMPINGTON	CB2 9EW	Flat	3	98	1055	£629,995	£6,429
07/06/2019	28 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	4	138	1485	£425,000	£3,080
28/06/2019	32 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	4	138	1485	£429,995	£3,116
29/06/2018	30 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Flat	4	138	1485	£479,995	£3,478
20/08/2019	4 PORTER ROAD	TRUMPINGTON	CB2 9GF	Semi Detact	4	138	1485	£630,000	£4,565
21/09/2018	149 OSPREY DRIVE	TRUMPINGTON	CB2 9FU	Semi Detact	4	143	1539	£679,995	£4,755
28/06/2019	138 OSPREY DRIVE	TRUMPINGTON	CB2 9FU	Semi Detact	4	143	1539	£740,000	£5,175
28/09/2018	151 OSPREY DRIVE	TRUMPINGTON	CB2 9FU	Semi Detact	4	143	1539	£779,995	£5,455
30/08/2019	84 RENARD WAY	TRUMPINGTON	CB2 9EW	Semi Detact	4	130	1399	£724,995	£5,577
08/07/2019	86 RENARD WAY	TRUMPINGTON	CB2 9EW	Semi Detact	4	130	1399	£724,995	£5,577
10/07/2018	52 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Semi Detact	4	130	1399	£769,995	£5,923
19/06/2018	54 CHARGER ROAD	TRUMPINGTON	CB2 9EA	Semi Detact	4	130	1399	£769,995	£5,923
29/06/2018	28 RENARD WAY	TRUMPINGTON	CB2 9EW	Semi Detact	4	130	1399	£769,995	£5,923
29/06/2018	30 RENARD WAY	TRUMPINGTON	CB2 9EW	Semi Detact	4	130	1399	£769,995	£5,923
26/06/2019	153 OSPREY DRIVE	TRUMPINGTON	CB2 9FU	Semi Detact	5	158	1701	£740,000	£4,684
22/08/2019	144 OSPREY DRIVE	TRUMPINGTON	CB2 9FU	Semi Detact	5	158	1701	£779,995	£4,937
29/06/2018	9 PORTER ROAD	TRUMPINGTON	CB2 9GF	Terraced	3	107	1152	£599,995	£5,607
27/09/2019	9 PLOUGHMAN WAY	TRUMPINGTON	CB2 9GE	Terraced	4	138	1485	£599,995	£4,348
27/06/2019	13 PLOUGHMAN WAY	TRUMPINGTON	CB2 9GE	Terraced	4	138	1485	£599,995	£4,348
27/09/2019	5 PORTER ROAD	TRUMPINGTON	CB2 9GF	Terraced	4	138	1485	£610,000	£4,420
26/07/2019	11 PLOUGHMAN WAY	TRUMPINGTON	CB2 9GE	Terraced	4	138	1485	£624,995	£4,529
21/06/2019	21 PLOUGHMAN WAY	TRUMPINGTON	CB2 9GE	Terraced	4	138	1485	£624,995	£4,529
24/10/2019	23 PLOUGHMAN WAY	TRUMPINGTON	CB2 9GE	Terraced	4	138	1485	£624,995	£4,529

South Cambridgeshire new build sales

Date	Number	Street	Settlement	Postcode	Type	Size sqr	Size sqft	Price Paid	Price psr
20/12/2019	13	GAUNTLET DRIVE	UPPER CAMBOURNE	CB23 6LE	Detached	231	2,486	£590,000	£2,554
16/12/2019	11	GAUNTLET DRIVE	UPPER CAMBOURNE	CB23 6LE	Detached	231	2,486	£605,000	£2,619
28/06/2019	3	BATTLE CLOSE	UPPER CAMBOURNE	CB23 6LF	Detached	166	1,787	£477,000	£2,873
17/06/2019	5	BATTLE CLOSE	UPPER CAMBOURNE	CB23 6LF	Detached	166	1,787	£479,995	£2,892
28/06/2019	4	BATTLE CLOSE	UPPER CAMBOURNE	CB23 6LF	Detached	166	1,787	£480,000	£2,892
04/06/2019	1	WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	166	1,787	£485,000	£2,922
23/08/2019	30	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	166	1,787	£489,995	£2,952
29/03/2019	9	WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	166	1,787	£489,995	£2,952
16/11/2018	155	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	166	1,787	£492,000	£2,964
18/10/2018	57	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JY	Detached	166	1,787	£499,995	£3,012
22/10/2018	59	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JY	Detached	166	1,787	£499,995	£3,012
07/12/2018	5	WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	166	1,787	£499,995	£3,012
21/12/2018	7	WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	166	1,787	£499,995	£3,012
14/12/2018	177	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	149	1,604	£452,000	£3,034
17/12/2018	163	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	166	1,787	£504,995	£3,042
11/06/2019	6	BATTLE CLOSE	UPPER CAMBOURNE	CB23 6LF	Detached	166	1,787	£504,995	£3,042
14/02/2020	60	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	166	1,787	£509,995	£3,072
09/11/2018	65	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JY	Detached	166	1,787	£509,995	£3,072
23/04/2019	159	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	166	1,787	£514,995	£3,102
27/09/2019	76	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	185	1,991	£574,995	£3,108
15/10/2019	78	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	185	1,991	£574,995	£3,108
18/12/2019	80	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	185	1,991	£574,995	£3,108
11/12/2019	82	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	177	1,905	£552,500	£3,121
28/06/2019	61	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JY	Detached	144	1,550	£450,000	£3,125
31/08/2018	63	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JY	Detached	166	1,787	£519,995	£3,133
12/12/2018	53	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JY	Detached	144	1,550	£455,000	£3,160
20/12/2019	56	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	110	1,184	£349,995	£3,182
08/02/2019	69	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JY	Detached	144	1,550	£459,995	£3,194
15/03/2019	165	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	144	1,550	£459,995	£3,194
14/11/2019	72	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	177	1,905	£569,995	£3,220
15/02/2019	27	TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Detached	144	1,550	£465,000	£3,229
01/11/2019	74	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	177	1,905	£574,995	£3,249
29/06/2018	32	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	144	1,550	£469,995	£3,264
27/03/2019	44	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	144	1,550	£469,995	£3,264
18/12/2018	153	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	144	1,550	£469,995	£3,264
16/11/2018	6	WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	144	1,550	£469,995	£3,264
16/12/2019	50	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	144	1,550	£470,000	£3,264
13/12/2019	3	GAUNTLET DRIVE	UPPER CAMBOURNE	CB23 6LE	Detached	144	1,550	£470,000	£3,264
24/07/2018	19	TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Detached	144	1,550	£474,995	£3,299
02/11/2018	3	WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	144	1,550	£474,995	£3,299
10/12/2019	9	GAUNTLET DRIVE	UPPER CAMBOURNE	CB23 6LE	Detached	144	1,550	£474,995	£3,299
29/06/2018	21	TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Detached	110	1,184	£364,995	£3,318
19/10/2018	55	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JY	Detached	144	1,550	£479,995	£3,333
18/12/2018	161	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	144	1,550	£479,995	£3,333
20/09/2019	84	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	177	1,905	£594,995	£3,362
29/06/2018	42	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	144	1,550	£489,995	£3,403
25/05/2018	141	GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	144	1,550	£489,995	£3,403
31/10/2018	12	WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	144	1,550	£501,995	£3,486
05/11/2018	10	WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	144	1,550	£509,995	£3,542

17/12/2019	5 GAUNTLET DRIVE	UPPER CAMBOURNE	CB23 6LE	Detached	107	1,152	£379,000	£3,542
18/12/2018	8 WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Detached	125	1,346	£449,995	£3,600
04/06/2019	1 GAUNTLET DRIVE	UPPER CAMBOURNE	CB23 6LE	Detached	125	1,346	£449,995	£3,600
21/06/2019	17 TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Detached	80	861	£290,000	£3,625
14/12/2018	167 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	114	1,227	£414,995	£3,640
23/04/2019	68 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	86	926	£324,995	£3,779
18/12/2018	24 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	80	861	£306,995	£3,837
21/12/2018	2 SWORDFISH DRIVE	UPPER CAMBOURNE	CB23 6LG	Detached	86	926	£332,500	£3,866
20/12/2018	197 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	79	850	£314,995	£3,987
04/01/2019	5 SWORDFISH DRIVE	UPPER CAMBOURNE	CB23 6LG	Detached	86	926	£344,995	£4,012
18/12/2018	4 SWORDFISH DRIVE	UPPER CAMBOURNE	CB23 6LG	Detached	86	926	£346,000	£4,023
21/12/2018	46 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	86	926	£349,995	£4,070
21/12/2018	48 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	86	926	£354,995	£4,128
18/12/2018	201 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	86	926	£359,995	£4,186
19/12/2018	157 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Detached	86	926	£370,995	£4,314
23/10/2019	70 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Detached	86	926	£575,000	£6,686
06/06/2018	FLAT 11 HORIZON HOUSE	GREAT CAMBOURNE	CB23 6JX	Flat	52	560	£205,000	£3,942
25/07/2018	FLAT 14 HORIZON HOUSE	GREAT CAMBOURNE	CB23 6JX	Flat	52	560	£205,000	£3,942
10/09/2018	FLAT 15 HORIZON HOUSE	GREAT CAMBOURNE	CB23 6JX	Flat	52	560	£201,500	£3,875
25/07/2018	FLAT 2 HORIZON HOUSE	GREAT CAMBOURNE	CB23 6JX	Flat	52	560	£205,000	£3,942
07/09/2018	FLAT 6 HORIZON HOUSE	GREAT CAMBOURNE	CB23 6JX	Flat	52	560	£200,000	£3,846
21/12/2018	20 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Semi-Detac	79	850	£356,995	£4,519
21/12/2018	22 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Semi-Detac	79	850	£335,000	£4,241
17/12/2018	26 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Semi-Detac	86	926	£325,000	£3,779
17/12/2018	28 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Semi-Detac	79	850	£303,495	£3,842
20/12/2019	52 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Semi-Detac	110	1,184	£331,500	£3,014
20/12/2019	54 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Semi-Detac	110	1,184	£349,995	£3,182
04/06/2019	62 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Semi-Detac	79	850	£304,995	£3,861
18/04/2019	64 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JQ	Semi-Detac	79	850	£290,000	£3,671
28/06/2019	13 TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Semi-Detac	79	850	£290,000	£3,671
23/11/2018	15 TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Semi-Detac	79	850	£314,995	£3,987
22/06/2018	23 TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Semi-Detac	110	1,184	£354,995	£3,227
29/06/2018	25 TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Semi-Detac	110	1,184	£354,995	£3,227
25/07/2018	29 TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Semi-Detac	79	850	£304,995	£3,861
20/09/2018	31 TYPHOON WAY	UPPER CAMBOURNE	CB23 6JR	Semi-Detac	79	850	£329,995	£4,177
02/05/2018	143 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Semi-Detac	86	926	£354,995	£4,128
26/10/2018	169 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Semi-Detac	66	710	£274,995	£4,167
05/11/2018	171 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Semi-Detac	66	710	£274,995	£4,167
05/06/2018	173 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Semi-Detac	79	850	£329,995	£4,177
24/08/2018	175 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Semi-Detac	79	850	£310,000	£3,924
02/04/2019	199 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Semi-Detac	79	850	£284,200	£3,597
22/02/2019	203 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Semi-Detac	111	1,195	£364,995	£3,288
22/02/2019	205 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Semi-Detac	111	1,195	£364,995	£3,288
12/07/2018	2 WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Semi-Detac	110	1,184	£334,995	£3,045
17/08/2018	4 WHITTLE WAY	UPPER CAMBOURNE	CB23 6LB	Semi-Detac	110	1,184	£354,995	£3,227
18/06/2019	2 BATTLE CLOSE	UPPER CAMBOURNE	CB23 6LF	Semi-Detac	86	926	£329,995	£3,837
18/02/2019	1 SWORDFISH DRIVE	UPPER CAMBOURNE	CB23 6LG	Semi-Detac	110	1,184	£342,495	£3,114
11/03/2019	3 SWORDFISH DRIVE	UPPER CAMBOURNE	CB23 6LG	Semi-Detac	110	1,184	£335,000	£3,045
07/09/2018	145 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Terraced	66	710	£265,000	£4,015
28/09/2018	147 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Terraced	66	710	£264,995	£4,015
31/08/2018	149 GLADIATOR ROAD	UPPER CAMBOURNE	CB23 6JZ	Terraced	66	710	£268,500	£4,068
19/07/2019	6 BLACKBIRD CLOSE	UPPER CAMBOURNE	CB23 6LD	Terraced	84	904	£150,300	£1,789
29/03/2019	7 BLACKBIRD CLOSE	UPPER CAMBOURNE	CB23 6LD	Terraced	74	797	£201,600	£2,724

Date	Numbe Street	Settlement	Postcode	Type	Size sqm	Size sqft	Price Paid	Price psm
19/10/2018	41 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	98	1055	£479,950	£4,897
04/05/2018	43 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	98	1055	£524,950	£5,357
12/06/2018	53 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	105	1130	£504,950	£4,809
22/06/2018	54 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	109	1173	£529,950	£4,862
29/06/2018	56 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	109	1173	£529,950	£4,862
19/10/2018	2 HARVEY LANE	HAUXTON	CB22 5FT	Detached	109	1173	£535,950	£4,917
26/09/2018	7 HARVEY LANE	HAUXTON	CB22 5FT	Detached	109	1173	£534,950	£4,908
24/08/2018	11 HARVEY LANE	HAUXTON	CB22 5FT	Detached	109	1173	£534,950	£4,908
08/06/2018	46 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	115	1238	£560,000	£4,870
14/12/2018	52 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	115	1238	£539,950	£4,695
15/08/2019	60 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	115	1238	£545,950	£4,747
13/09/2019	62 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	115	1238	£589,950	£5,130
15/02/2019	10 HARVEY LANE	HAUXTON	CB22 5FT	Detached	115	1238	£550,000	£4,783
24/05/2019	6 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	120	1292	£632,950	£5,275
21/06/2018	48 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	120	1292	£579,950	£4,833
29/06/2018	58 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	120	1292	£579,950	£4,833
28/09/2018	3 HARVEY LANE	HAUXTON	CB22 5FT	Detached	120	1292	£583,950	£4,866
28/09/2018	4 HARVEY LANE	HAUXTON	CB22 5FT	Detached	120	1292	£583,950	£4,866
31/08/2018	6 HARVEY LANE	HAUXTON	CB22 5FT	Detached	120	1292	£579,950	£4,833
19/12/2018	70 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	121	1302	£599,950	£4,958
16/11/2018	1 HARVEY LANE	HAUXTON	CB22 5FT	Detached	121	1302	£585,950	£4,843
11/01/2019	5 HARVEY LANE	HAUXTON	CB22 5FT	Detached	121	1302	£554,950	£4,586
17/07/2018	50 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	128	1378	£614,950	£4,804
14/06/2019	64 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	128	1378	£599,950	£4,687
23/11/2018	66 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	128	1378	£729,950	£5,703
14/12/2018	2 MEAD AVENUE		CB22 5FS	Detached	128	1378	£616,950	£4,820
24/08/2018	8 HARVEY LANE	HAUXTON	CB22 5FT	Detached	128	1378	£609,950	£4,765
24/08/2018	9 HARVEY LANE	HAUXTON	CB22 5FT	Detached	128	1378	£609,950	£4,765
06/09/2019	8 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	140	1507	£659,950	£4,714
28/06/2019	4 MEAD AVENUE	HAUXTON	CB22 5FS	Detached	140	1507	£659,950	£4,714
22/11/2019	41 TURNER CRESCENT	HAUXTON	CB22 5GE	Detached	143	1539	£659,950	£4,615
23/08/2019	47 TURNER CRESCENT	HAUXTON	CB22 5GE	Detached	143	1539	£669,950	£4,685
25/01/2019	14 MEAD AVENUE	HAUXTON	CB22 5FS	Detached	150	1615	£700,000	£4,667
26/07/2018	38 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	168	1808	£799,950	£4,762
02/08/2019	10 MEAD AVENUE	HAUXTON	CB22 5FS	Detached	168	1808	£799,950	£4,762
25/04/2019	4 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	177	1905	£827,950	£4,678
08/02/2019	12 MEAD AVENUE	HAUXTON	CB22 5FS	Detached	177	1905	£799,950	£4,519
25/01/2019	16 MEAD AVENUE	HAUXTON	CB22 5FS	Detached	177	1905	£809,950	£4,576
31/05/2019	39 TURNER CRESCENT	HAUXTON	CB22 5GE	Detached	178	1916	£749,950	£4,213
26/04/2019	2 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	181	1948	£769,950	£4,254
25/05/2018	30 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	181	1948	£729,950	£4,033
29/06/2018	44 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	181	1948	£744,950	£4,116
10/12/2018	68 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	181	1948	£588,950	£3,254
27/09/2019	72 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Detached	181	1948	£699,950	£3,867
14/06/2019	6 MEAD AVENUE	HAUXTON	CB22 5FS	Detached	181	1948	£729,950	£4,033
27/09/2019	2 TURNER CRESCENT	HAUXTON	CB22 5GE	Semi Detac	122	1313	£521,950	£4,278
23/08/2019	4 TURNER CRESCENT	HAUXTON	CB22 5GE	Semi Detac	122	1313	£524,950	£4,303
23/08/2019	6 TURNER CRESCENT	HAUXTON	CB22 5GE	Semi Detac	122	1313	£524,950	£4,303
16/08/2019	8 TURNER CRESCENT	HAUXTON	CB22 5GE	Semi Detac	122	1313	£524,950	£4,303
07/06/2019	43 TURNER CRESCENT	HAUXTON	CB22 5GE	Semi Detac	122	1313	£519,950	£4,262
07/06/2019	45 TURNER CRESCENT	HAUXTON	CB22 5GE	Semi Detac	122	1313	£517,950	£4,245
22/05/2018	51 ST EDMUNDS WAY	HAUXTON	CB22 5FP	Terraced	65	700	£359,950	£5,538
18/12/2019	6 MILL LANE	HAUXTON	CB22 5GD	Terraced	112	1206	£447,950	£4,000
20/12/2019	2 MILL LANE	HAUXTON	CB22 5GD	Terraced	113	1216	£467,950	£4,141
29/11/2019	8 MILL LANE	HAUXTON	CB22 5GD	Terraced	113	1216	£467,950	£4,141
31/05/2019	37 TURNER CRESCENT	HAUXTON	CB22 5GE	Terraced	113	1216	£464,950	£4,115
02/08/2019	49 TURNER CRESCENT	HAUXTON	CB22 5GE	Terraced	113	1216	£474,950	£4,203
21/06/2019	51 TURNER CRESCENT	HAUXTON	CB22 5GE	Terraced	113	1216	£442,950	£3,920
31/01/2020	55 TURNER CRESCENT	HAUXTON	CB22 5GE	Terraced	113	1216	£469,950	£4,159
22/11/2019	53 TURNER CRESCENT	HAUXTON	CB22 5GE	Terraced	127	1367	£479,950	£3,779

Date	Number	Street	Settlement	Postcode	Type	Size sqm	Size sqft	Price Paid	Price psm
13/06/2019	72	VICTORIA WAY	ROYSTON	SG8 6FE	Detached	127	1,367	£500,000	£3,937
05/12/2019	74	VICTORIA WAY	ROYSTON	SG8 6FE	Detached	157	1,690	£750,000	£4,777
06/09/2019	78	VICTORIA WAY	ROYSTON	SG8 6FE	Detached	149	1,604	£615,000	£4,128
30/08/2019	80	VICTORIA WAY	ROYSTON	SG8 6FE	Detached	199	2,142	£670,000	£3,367
29/11/2019	9	CLOVER WAY	ROYSTON	SG8 6FW	Detached	122	1,313	£529,995	£4,344
31/01/2020	2	CLOVER WAY	ROYSTON	SG8 6FX	Detached	199	2,142	£699,995	£3,518
20/12/2019	8	DAFFODIL CLOSE	ROYSTON	SG8 6FZ	Detached	274	2,949	£840,000	£3,066
08/11/2019	10	DAFFODIL CLOSE	ROYSTON	SG8 6FZ	Detached	144	1,550	£599,995	£4,167
11/10/2019	12	DAFFODIL CLOSE	ROYSTON	SG8 6FZ	Detached	144	1,550	£599,995	£4,167
31/10/2019	14	DAFFODIL CLOSE	ROYSTON	SG8 6FZ	Detached	197	2,121	£705,000	£3,579
25/10/2019	16	DAFFODIL CLOSE	ROYSTON	SG8 6FZ	Detached	266	2,863	£859,995	£3,233
10/05/2019	68	VICTORIA WAY	ROYSTON	SG8 6FE	Semi-Detac	86	926	£350,000	£4,070
10/06/2019	70	VICTORIA WAY	ROYSTON	SG8 6FE	Semi-Detac	88	947	£365,000	£4,148
04/10/2019	6	CLOVER WAY	ROYSTON	SG8 6FX	Semi-Detac	100	1,076	£419,995	£4,200
20/09/2019	10	CLOVER WAY	ROYSTON	SG8 6FX	Semi-Detac	80	861	£324,995	£4,062
06/09/2019	12	CLOVER WAY	ROYSTON	SG8 6FX	Semi-Detac	80	861	£319,995	£4,000
27/09/2019	14	CLOVER WAY	ROYSTON	SG8 6FX	Semi-Detac	60	646	£274,995	£4,583
26/09/2019	26	CLOVER WAY	ROYSTON	SG8 6FX	Semi-Detac	80	861	£315,000	£3,938
27/09/2019	28	CLOVER WAY	ROYSTON	SG8 6FX	Semi-Detac	80	861	£329,995	£4,125
13/09/2019	30	CLOVER WAY	ROYSTON	SG8 6FX	Semi-Detac	80	861	£314,995	£3,937
06/09/2019	32	CLOVER WAY	ROYSTON	SG8 6FX	Semi-Detac	80	861	£324,995	£4,062
31/05/2019	66	VICTORIA WAY	ROYSTON	SG8 6FE	Terraced	69	743	£315,000	£4,565
04/10/2019	16	CLOVER WAY	ROYSTON	SG8 6FX	Terraced	100	1,076	£409,995	£4,100
20/09/2019	18	CLOVER WAY	ROYSTON	SG8 6FX	Terraced	112	1,206	£455,000	£4,063
06/09/2019	24	CLOVER WAY	ROYSTON	SG8 6FX	Terraced	60	646	£279,995	£4,667

Date	Number	Street	Settlement	Postcode	Type	Size sqm	Size sqft	Price Paid	Price psm
17/01/2020	4	GRAHAM ROAD	CAMBRIDGE	CB4 2WP	Flat	51	549	£271,000	£5,314
12/12/2018	6	GRAHAM ROAD	CAMBRIDGE	CB4 2WP	Flat	55	592	£257,849	£4,688
13/12/2018	8	GRAHAM ROAD	CAMBRIDGE	CB4 2WP	Flat	50	538	£271,000	£5,420
17/12/2018	10	GRAHAM ROAD	CAMBRIDGE	CB4 2WP	Flat	131	1410	£288,300	£2,201
30/05/2019	20	GRAHAM ROAD	CAMBRIDGE	CB4 2WP	Flat	51	549	£275,000	£5,392
08/01/2019	22	GRAHAM ROAD	CAMBRIDGE	CB4 2WP	Flat	131	1410	£290,600	£2,218
08/01/2019	5	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	50	538	£273,100	£5,462
14/12/2018	6	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	131	1410	£288,100	£2,199
12/12/2018	10	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£337,804	£4,445
18/12/2018	11	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£333,765	£4,392
08/01/2019	12	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£358,600	£4,718
14/12/2018	15	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£342,200	£4,503
14/12/2018	16	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£327,590	£4,310
12/12/2018	17	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£319,990	£4,210
26/03/2019	18	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£345,000	£4,539
18/12/2018	19	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£339,738	£4,470
14/12/2018	20	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Flat	76	818	£359,700	£4,733
08/01/2019	12	GRAHAM ROAD	CAMBRIDGE	CB4 2WP	Terraced	124	1335	£464,000	£3,742
17/12/2018	16	GRAHAM ROAD	CAMBRIDGE	CB4 2WP	Terraced	139	1496	£412,875	£2,970
08/01/2019	2	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Terraced	119	1281	£515,000	£4,328
14/12/2018	3	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Terraced	111	1195	£382,100	£3,442
12/12/2018	4	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Terraced	111	1195	£405,250	£3,651
14/12/2018	7	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Terraced	111	1195	£428,825	£3,863
18/12/2018	8	MARMALADE LANE	CAMBRIDGE	CB4 2ZE	Terraced	119	1281	£411,900	£3,461

Date	Number	Street	Settlement	Postcode	Type	Size sqr	Size sqft	Price Paid	Price psm
14/10/2019	3	TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	174	1873	£475,000	£2,730
05/06/2019	15	TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	130	1399	£357,000	£2,746
18/06/2019	19	TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	117	1259	£330,000	£2,821
18/01/2019	65	HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	166	1787	£470,000	£2,831
28/09/2018	14	GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Detached	173	1862	£490,000	£2,832
28/06/2019	21	TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	117	1259	£337,000	£2,880
30/11/2018	2	GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Detached	173	1862	£499,995	£2,890
25/06/2019	23	TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	117	1259	£340,000	£2,906
29/06/2018	11	WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	165	1776	£480,000	£2,909
27/09/2019	69	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	195	2099	£569,995	£2,923
28/06/2019	87	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	195	2099	£569,995	£2,923
31/05/2019	17	TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	130	1399	£380,000	£2,923
17/10/2019	17	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	130	1399	£380,000	£2,923
20/12/2019	32	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	130	1399	£380,000	£2,923
05/12/2019	14	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	181	1948	£530,000	£2,928
01/08/2019	34	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BG	Detached	195	2099	£574,995	£2,949
28/09/2018	4	PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	195	2099	£574,995	£2,949
28/06/2018	20	GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Detached	173	1862	£512,000	£2,960
18/10/2019	95	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	195	2099	£577,995	£2,964
15/03/2019	38	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BG	Detached	195	2099	£577,995	£2,964
08/03/2019	40	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BG	Detached	195	2099	£578,995	£2,969
15/08/2019	99	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	195	2099	£579,995	£2,974
14/12/2018	25	PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	195	2099	£579,995	£2,974
05/12/2019	16	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	181	1948	£540,000	£2,983
20/05/2019	7	CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	147	1582	£440,000	£2,993
17/05/2018	66	PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Detached	130	1399	£390,000	£3,000
13/12/2019	5	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	181	1948	£545,000	£3,011
19/07/2019	71	HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	166	1787	£499,995	£3,012
13/02/2019	23	HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	166	1787	£500,000	£3,012
14/11/2019	10	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	165	1776	£498,495	£3,021
10/08/2018	13	WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	182	1959	£549,995	£3,022
10/08/2018	17	WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	182	1959	£549,995	£3,022
25/10/2019	34	HERON ROAD	NORTHSTOWE	CB24 1AR	Detached	117	1259	£355,000	£3,034
29/05/2019	13	TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	130	1399	£394,995	£3,038
18/10/2019	7	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	130	1399	£394,995	£3,038
06/12/2019	18	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	165	1776	£505,000	£3,061
18/12/2019	20	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	165	1776	£505,000	£3,061
26/09/2019	15	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	117	1259	£359,995	£3,077
28/06/2018	22	GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Detached	173	1862	£534,995	£3,092
31/10/2018	2	CRABTREE ROAD	NORTHSTOWE	CB24 1BN	Detached	155	1668	£479,995	£3,097
27/02/2019	8	CAESAR WAY	NORTHSTOWE	CB24 1BR	Detached	109	1173	£340,000	£3,119
27/09/2019	11	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	117	1259	£365,000	£3,120
26/10/2018	8	PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	174	1873	£544,995	£3,132
09/01/2020	26	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	140	1507	£440,000	£3,143
29/03/2019	97	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	174	1873	£546,995	£3,144
07/10/2019	9	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	117	1259	£367,995	£3,145
29/06/2018	15	WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	165	1776	£519,995	£3,151
11/09/2019	42	STIRLING ROAD	NORTHSTOWE	CB24 1BW	Detached	149	1604	£469,995	£3,154
30/05/2018	67	HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	170	1830	£536,500	£3,156
28/06/2019	11	TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	140	1507	£441,995	£3,157
26/04/2019	91	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	171	1841	£539,995	£3,158
13/09/2019	42	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BG	Detached	171	1841	£539,995	£3,158
29/11/2019	73	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	174	1873	£549,995	£3,161
30/08/2019	81	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	174	1873	£549,995	£3,161
19/11/2019	83	PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	174	1873	£549,995	£3,161
28/06/2019	15	CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	117	1259	£369,995	£3,162
07/01/2019	26	HERON ROAD	NORTHSTOWE	CB24 1AR	Detached	117	1259	£369,995	£3,162
20/09/2019	13	VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	117	1259	£369,995	£3,162
18/12/2018	11	CAESAR WAY	NORTHSTOWE	CB24 1BR	Detached	109	1173	£345,000	£3,165
14/12/2018	2	WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	144	1550	£456,995	£3,174
25/05/2018	74	PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Detached	119	1281	£380,000	£3,193

11/03/2019	4 SHUTE LANE	NORTHSTOWE	CB24 1BH	Detached	125	1346	£399,995	£3,200
19/12/2018	5 CAESAR WAY	NORTHSTOWE	CB24 1BR	Detached	109	1173	£350,000	£3,211
28/06/2019	10 CAESAR WAY	NORTHSTOWE	CB24 1BR	Detached	109	1173	£350,000	£3,211
28/06/2018	19 WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	165	1776	£529,995	£3,212
31/05/2019	17 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	147	1582	£474,995	£3,231
19/12/2019	48 HERON ROAD	NORTHSTOWE	CB24 1AR	Detached	117	1259	£379,995	£3,248
10/01/2020	25 TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Detached	149	1604	£484,000	£3,248
28/05/2019	4 ROMAN CLOSE	NORTHSTOWE	CB24 1BT	Detached	137	1475	£448,000	£3,270
27/09/2019	61 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	125	1346	£409,995	£3,280
25/10/2019	63 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	125	1346	£409,995	£3,280
31/10/2018	24 HERON ROAD	NORTHSTOWE	CB24 1AR	Detached	117	1259	£387,000	£3,308
21/09/2018	6 SHUTE LANE	NORTHSTOWE	CB24 1BH	Detached	125	1346	£414,995	£3,320
24/05/2018	63 HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	170	1830	£564,700	£3,322
29/06/2018	21 HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	170	1830	£564,950	£3,323
19/12/2018	9 CAESAR WAY	NORTHSTOWE	CB24 1BR	Detached	109	1173	£362,995	£3,330
21/12/2018	9 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	117	1259	£389,995	£3,333
20/12/2018	28 HERON ROAD	NORTHSTOWE	CB24 1AR	Detached	117	1259	£389,995	£3,333
28/06/2019	73 HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	147	1582	£489,995	£3,333
29/06/2018	8 ORCHARD WAY	NORTHSTOWE	CB24 1AG	Detached	114	1227	£380,000	£3,333
28/09/2018	14 HERON ROAD	NORTHSTOWE	CB24 1AR	Detached	117	1259	£390,000	£3,333
14/02/2020	8 MISTLE THRUSH DRIVE	NORTHSTOWE	CB24 1BS	Detached	164	1765	£549,995	£3,354
30/08/2019	14 MISTLE THRUSH DRIVE	NORTHSTOWE	CB24 1BS	Detached	168	1808	£563,995	£3,357
29/11/2019	4 VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	113	1216	£380,000	£3,363
25/05/2018	18 WELLINGTON ROAD	NORTHSTOWE	CB24 1AX	Detached	110	1184	£369,995	£3,364
28/06/2019	6 VOLE CLOSE	NORTHSTOWE	CB24 1DA	Detached	184	1981	£618,995	£3,364
31/05/2019	21 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	147	1582	£495,000	£3,367
29/06/2018	4 ORCHARD WAY	NORTHSTOWE	CB24 1AG	Detached	114	1227	£384,995	£3,377
29/06/2018	6 ORCHARD WAY	NORTHSTOWE	CB24 1AG	Detached	114	1227	£384,995	£3,377
29/06/2018	9 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	124	1335	£419,995	£3,387
17/12/2018	7 CAESAR WAY	NORTHSTOWE	CB24 1BR	Detached	109	1173	£369,995	£3,394
08/06/2018	11 ORCHARD WAY	NORTHSTOWE	CB24 1AG	Detached	153	1647	£519,995	£3,399
29/11/2019	16 WARREN WAY	NORTHSTOWE	CB24 1AP	Detached	147	1582	£499,995	£3,401
13/08/2018	8 WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	144	1550	£489,995	£3,403
13/12/2019	8 VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	113	1216	£385,000	£3,407
26/11/2019	5 VOLE CLOSE	NORTHSTOWE	CB24 1DA	Detached	164	1765	£560,995	£3,421
17/08/2018	2 ORCHARD WAY	NORTHSTOWE	CB24 1AG	Detached	114	1227	£389,995	£3,421
10/04/2019	3 VOLE CLOSE	NORTHSTOWE	CB24 1DA	Detached	164	1765	£561,995	£3,427
19/12/2018	6 ROMAN CLOSE	NORTHSTOWE	CB24 1BT	Detached	137	1475	£469,995	£3,431
20/12/2018	34 CRABTREE ROAD	NORTHSTOWE	CB24 1BN	Detached	131	1410	£449,995	£3,435
31/10/2018	1 COS ROAD	NORTHSTOWE	CB24 1AE	Detached	141	1518	£484,995	£3,440
10/12/2019	1 KINGFISHER CLOSE	NORTHSTOWE	CB24 1BZ	Detached	168	1808	£577,995	£3,440
16/04/2019	19 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	119	1281	£409,995	£3,445
31/05/2018	39 HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	97	1044	£335,000	£3,454
31/05/2019	4 MISTLE THRUSH DRIVE	NORTHSTOWE	CB24 1BS	Detached	123	1324	£425,995	£3,463
20/12/2019	28 MISTLE THRUSH DRIVE	NORTHSTOWE	CB24 1BS	Detached	123	1324	£425,995	£3,463
28/09/2018	12 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Detached	153	1647	£529,995	£3,464
29/06/2018	19 HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	147	1582	£510,000	£3,469
01/06/2018	61 HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	147	1582	£510,000	£3,469
29/06/2018	11 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	124	1335	£431,995	£3,484
26/10/2018	15 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	124	1335	£431,995	£3,484
29/06/2018	4 WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	139	1496	£484,995	£3,489
05/10/2018	10 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	139	1496	£484,995	£3,489
28/09/2018	2 ROMAN CLOSE	NORTHSTOWE	CB24 1BT	Detached	126	1356	£440,000	£3,492
03/05/2019	21 DORMIE ROAD	NORTHSTOWE	CB24 1BB	Detached	93	1001	£324,995	£3,495
19/12/2018	7 HOSEL ROAD	NORTHSTOWE	CB24 1AZ	Detached	114	1227	£399,995	£3,509
02/12/2018	4 DORMIE ROAD	NORTHSTOWE	CB24 1BB	Detached	114	1227	£399,995	£3,509
14/12/2018	6 DORMIE ROAD	NORTHSTOWE	CB24 1BB	Detached	114	1227	£399,995	£3,509
20/12/2018	4 MULLIGAN WAY	NORTHSTOWE	CB24 1BE	Detached	114	1227	£399,995	£3,509
14/12/2018	5 MULLIGAN WAY	NORTHSTOWE	CB24 1BE	Detached	114	1227	£399,995	£3,509
19/12/2018	6 MULLIGAN WAY	NORTHSTOWE	CB24 1BE	Detached	114	1227	£399,995	£3,509
15/01/2019	7 MULLIGAN WAY	NORTHSTOWE	CB24 1BE	Detached	114	1227	£399,995	£3,509
24/01/2020	28 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BG	Detached	139	1496	£489,995	£3,525

21/12/2018	32 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BG	Detached	139	1496	£489,995	£3,525
26/09/2018	10 HERON ROAD	NORTHSTOWE	CB24 1AR	Detached	117	1259	£414,995	£3,547
31/10/2018	12 HERON ROAD	NORTHSTOWE	CB24 1AR	Detached	117	1259	£414,995	£3,547
30/08/2019	71 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	139	1496	£493,995	£3,554
26/06/2018	9 WOODPECKER CLOSE	NORTHSTOWE	CB24 1AW	Detached	139	1496	£494,995	£3,561
28/06/2019	85 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	139	1496	£494,995	£3,561
30/04/2019	75 HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	147	1582	£524,995	£3,571
30/01/2019	36 CRABTREE ROAD	NORTHSTOWE	CB24 1BN	Detached	108	1163	£385,995	£3,574
26/10/2018	13 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	121	1302	£433,995	£3,586
29/11/2019	17 BURROWS WAY	NORTHSTOWE	CB24 1AT	Detached	117	1259	£419,995	£3,590
29/06/2018	7 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	121	1302	£434,995	£3,595
28/09/2018	6 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	139	1496	£499,995	£3,597
21/12/2018	5 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	119	1281	£429,995	£3,613
29/06/2018	2 SHUTE LANE	NORTHSTOWE	CB24 1BH	Detached	107	1152	£389,995	£3,645
09/08/2018	8 ROMAN CLOSE	NORTHSTOWE	CB24 1BT	Detached	126	1356	£459,995	£3,651
24/05/2019	10 MISTLE THRUSH DRIVE	NORTHSTOWE	CB24 1BS	Detached	144	1550	£525,995	£3,653
24/05/2018	59 HERON ROAD	NORTHSTOWE	CB24 1AS	Detached	147	1582	£539,995	£3,673
07/12/2018	28 CRABTREE ROAD	NORTHSTOWE	CB24 1BN	Detached	130	1399	£479,995	£3,692
31/10/2018	4 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Detached	105	1130	£390,000	£3,714
27/09/2019	67 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	107	1152	£399,995	£3,738
28/11/2019	16 MISTLE THRUSH DRIVE	NORTHSTOWE	CB24 1BS	Detached	127	1367	£475,995	£3,748
27/09/2019	20 MISTLE THRUSH DRIVE	NORTHSTOWE	CB24 1BS	Detached	127	1367	£475,995	£3,748
18/10/2019	6 VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	113	1216	£425,000	£3,761
16/09/2019	44 STIRLING ROAD	NORTHSTOWE	CB24 1BW	Detached	113	1216	£429,995	£3,805
29/06/2018	4 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	97	1044	£369,995	£3,814
01/02/2019	8 SHUTE LANE	NORTHSTOWE	CB24 1BH	Detached	107	1152	£409,995	£3,832
25/05/2018	13 DORMIE ROAD	NORTHSTOWE	CB24 1BB	Detached	94	1012	£369,995	£3,936
20/07/2018	15 DORMIE ROAD	NORTHSTOWE	CB24 1BB	Detached	94	1012	£369,995	£3,936
12/07/2018	2 DORMIE ROAD	NORTHSTOWE	CB24 1BB	Detached	114	1227	£449,995	£3,947
04/12/2018	2 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	88	947	£350,000	£3,977
29/11/2018	3 COS ROAD	NORTHSTOWE	CB24 1AE	Detached	118	1270	£474,995	£4,025
06/11/2019	12 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	91	980	£371,995	£4,088
26/10/2018	17 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	91	980	£371,995	£4,088
30/11/2018	19 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	91	980	£371,995	£4,088
11/10/2019	16 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Detached	88	947	£360,000	£4,091
14/06/2019	4 VOLE CLOSE	NORTHSTOWE	CB24 1DA	Detached	101	1087	£413,995	£4,099
21/12/2018	14 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	91	980	£373,995	£4,110
30/11/2018	21 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	91	980	£373,995	£4,110
28/06/2019	89 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	91	980	£374,995	£4,121
22/08/2019	93 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Detached	91	980	£374,995	£4,121
25/02/2019	16 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	91	980	£374,995	£4,121
14/12/2018	5 ROMAN CLOSE	NORTHSTOWE	CB24 1BT	Detached	86	926	£355,000	£4,128
13/09/2019	2 VILLA ROAD	NORTHSTOWE	CB24 1BU	Detached	85	915	£352,995	£4,153
11/12/2018	27 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	89	958	£369,995	£4,157
30/11/2018	23 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Detached	89	958	£371,995	£4,180
21/12/2018	1 ROMAN CLOSE	NORTHSTOWE	CB24 1BT	Detached	86	926	£359,995	£4,186
19/12/2018	11 AUGUSTUS ROAD	NORTHSTOWE	CB24 1BQ	Detached	62	667	£262,995	£4,242
20/12/2018	2 COS ROAD	NORTHSTOWE	CB24 1AE	Detached	84	904	£369,995	£4,405
31/07/2018	3 ROMAN CLOSE	NORTHSTOWE	CB24 1BT	Detached	86	926	£385,995	£4,488
24/08/2018	1 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Detached	59	635	£419,995	£7,119
29/06/2018	3 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Detached	39	420	£349,995	£8,974
15/08/2019	29 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	72	775	£225,000	£3,125
28/06/2019	10 HOSEL ROAD	NORTHSTOWE	CB24 1AZ	Flat	70	753	£229,995	£3,286
28/06/2019	12 HOSEL ROAD	NORTHSTOWE	CB24 1AZ	Flat	70	753	£229,995	£3,286
30/09/2019	14 HOSEL ROAD	NORTHSTOWE	CB24 1AZ	Flat	70	753	£229,995	£3,286
28/06/2019	16 HOSEL ROAD	NORTHSTOWE	CB24 1AZ	Flat	70	753	£229,995	£3,286
19/09/2018	21 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	72	775	£238,000	£3,306
14/09/2018	15 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	72	775	£240,000	£3,333
05/07/2019	8 HOSEL ROAD	NORTHSTOWE	CB24 1AZ	Flat	70	753	£239,995	£3,429
27/06/2018	13 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	72	775	£246,995	£3,430
29/06/2018	23 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	72	775	£248,995	£3,458
28/06/2019	47 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	72	775	£249,995	£3,472

17/05/2019	55 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	72	775	£250,000	£3,472
21/12/2018	17 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	71	764	£247,995	£3,493
29/06/2018	9 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	71	764	£249,995	£3,521
06/07/2018	25 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	71	764	£249,995	£3,521
24/05/2019	49 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	70	753	£255,995	£3,657
29/03/2019	6 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Flat	60	646	£220,000	£3,667
25/03/2019	57 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	70	753	£257,995	£3,686
20/12/2018	8 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Flat	60	646	£222,000	£3,700
27/02/2019	12 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Flat	60	646	£224,995	£3,750
27/09/2019	6 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Flat	63	678	£236,995	£3,762
19/12/2018	10 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Flat	60	646	£231,300	£3,855
21/12/2018	4 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Flat	60	646	£234,995	£3,917
03/05/2019	14 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Flat	63	678	£246,995	£3,921
20/12/2018	2 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Flat	60	646	£239,995	£4,000
21/12/2018	14 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Flat	60	646	£244,995	£4,083
18/05/2018	10 WELLINGTON ROAD	NORTHSTOWE	CB24 1AX	Flat	61	657	£264,995	£4,344
11/10/2019	27 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	46	495	£199,995	£4,348
29/03/2019	4 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Flat	55	592	£248,995	£4,527
16/07/2018	19 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Flat	46	495	£215,000	£4,674
07/06/2018	24 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Semi-Detac	173	1862	£329,995	£1,907
20/12/2018	2 BRAMLEY WALK	NORTHSTOWE	CB24 1AD	Semi-Detac	133	1432	£364,995	£2,744
11/12/2019	37 STIRLING ROAD	NORTHSTOWE	CB24 1AL	Semi-Detac	131	1410	£374,995	£2,863
31/05/2019	28 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Semi-Detac	117	1259	£347,000	£2,966
24/10/2019	43 PATHFINDER WAY	NORTHSTOWE	CB24 1AY	Semi-Detac	117	1259	£348,000	£2,974
27/06/2019	77 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	117	1259	£358,000	£3,060
28/09/2018	23 DORMIE ROAD	NORTHSTOWE	CB24 1BB	Semi-Detac	117	1259	£359,995	£3,077
27/09/2019	79 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	117	1259	£370,000	£3,162
31/05/2019	1 HOSEL ROAD	NORTHSTOWE	CB24 1AZ	Semi-Detac	117	1259	£372,495	£3,184
21/12/2018	13 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Semi-Detac	117	1259	£374,995	£3,205
17/12/2018	1 DUCK HOOK WALK	NORTHSTOWE	CB24 1BA	Semi-Detac	117	1259	£374,995	£3,205
17/12/2019	15 BURROWS WAY	NORTHSTOWE	CB24 1AT	Semi-Detac	117	1259	£375,000	£3,205
08/05/2019	14 TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Semi-Detac	109	1173	£350,000	£3,211
21/12/2018	11 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Semi-Detac	117	1259	£379,995	£3,248
08/05/2019	16 TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Semi-Detac	109	1173	£369,995	£3,394
30/05/2018	31 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	97	1044	£347,250	£3,580
28/09/2018	16 HERON ROAD	NORTHSTOWE	CB24 1AR	Semi-Detac	74	797	£280,000	£3,784
15/04/2019	99 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	88	947	£335,000	£3,807
27/09/2018	20 HERON ROAD	NORTHSTOWE	CB24 1AR	Semi-Detac	74	797	£282,000	£3,811
28/06/2018	12 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Semi-Detac	74	797	£284,995	£3,851
27/06/2018	14 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Semi-Detac	74	797	£284,995	£3,851
28/09/2018	18 HERON ROAD	NORTHSTOWE	CB24 1AR	Semi-Detac	74	797	£284,995	£3,851
27/09/2018	22 HERON ROAD	NORTHSTOWE	CB24 1AR	Semi-Detac	74	797	£284,995	£3,851
29/03/2019	81 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	88	947	£349,995	£3,977
19/12/2019	57 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BF	Semi-Detac	89	958	£359,995	£4,045
28/06/2019	20 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Semi-Detac	89	958	£359,995	£4,045
30/08/2018	16 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Semi-Detac	79	850	£329,995	£4,177
30/09/2018	18 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Semi-Detac	79	850	£329,995	£4,177
07/06/2018	26 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Semi-Detac	79	850	£329,995	£4,177
30/11/2018	30 CRABTREE ROAD	NORTHSTOWE	CB24 1BN	Semi-Detac	79	850	£332,995	£4,215
29/11/2018	32 CRABTREE ROAD	NORTHSTOWE	CB24 1BN	Semi-Detac	79	850	£333,995	£4,228
29/03/2019	83 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	65	700	£274,995	£4,231
28/06/2019	30 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BG	Semi-Detac	77	829	£329,995	£4,286
28/06/2018	8 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Semi-Detac	65	700	£279,995	£4,308
29/06/2018	10 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Semi-Detac	65	700	£279,995	£4,308
24/01/2020	16 PEPPERCORN DRIVE	NORTHSTOWE	CB24 1BG	Semi-Detac	77	829	£334,995	£4,351
29/03/2019	97 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	65	700	£284,995	£4,385
11/09/2018	55 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	84	904	£369,995	£4,405
21/12/2018	5 TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Semi-Detac	62	667	£274,995	£4,435
21/12/2018	7 TEMPLE ROAD	NORTHSTOWE	CB24 1BP	Semi-Detac	62	667	£274,995	£4,435
15/03/2019	3 AUGUSTUS ROAD	NORTHSTOWE	CB24 1BQ	Semi-Detac	62	667	£274,995	£4,435
13/03/2019	5 AUGUSTUS ROAD	NORTHSTOWE	CB24 1BQ	Semi-Detac	62	667	£274,995	£4,435
19/12/2018	7 AUGUSTUS ROAD	NORTHSTOWE	CB24 1BQ	Semi-Detac	62	667	£274,995	£4,435

21/12/2018	9 AUGUSTUS ROAD	NORTHSTOWE	CB24 1BQ	Semi-Detac	62	667	£274,995	£4,435
19/12/2018	13 AUGUSTUS ROAD	NORTHSTOWE	CB24 1BQ	Semi-Detac	62	667	£274,995	£4,435
20/09/2019	46 STIRLING ROAD	NORTHSTOWE	CB24 1BW	Semi-Detac	62	667	£274,995	£4,435
20/12/2018	4 COS ROAD	NORTHSTOWE	CB24 1AE	Semi-Detac	65	700	£292,995	£4,508
20/12/2018	6 COS ROAD	NORTHSTOWE	CB24 1AE	Semi-Detac	65	700	£293,995	£4,523
21/06/2019	101 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	84	904	£379,995	£4,524
24/06/2019	103 HERON ROAD	NORTHSTOWE	CB24 1AS	Semi-Detac	84	904	£379,995	£4,524
12/07/2019	69 STIRLING ROAD	NORTHSTOWE	CB24 1AL	Terraced	94	1012	£136,000	£1,447
20/09/2019	61 STIRLING ROAD	NORTHSTOWE	CB24 1AL	Terraced	94	1012	£184,250	£1,960
28/02/2019	18 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Terraced	135	1453	£399,995	£2,963
29/03/2019	20 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Terraced	135	1453	£399,995	£2,963
29/03/2019	80 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Terraced	119	1281	£354,995	£2,983
14/06/2019	16 WELLINGTON ROAD	NORTHSTOWE	CB24 1AX	Terraced	110	1184	£331,000	£3,009
29/03/2019	22 CLAUDIUS WALK	NORTHSTOWE	CB24 1BL	Terraced	117	1259	£359,995	£3,077
27/06/2018	84 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Terraced	119	1281	£374,995	£3,151
24/05/2018	82 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Terraced	119	1281	£379,995	£3,193
29/06/2018	14 WELLINGTON ROAD	NORTHSTOWE	CB24 1AX	Terraced	110	1184	£359,995	£3,273
01/08/2018	22 PATHFINDER WAY	NORTHSTOWE	CB24 1AU	Terraced	135	1453	£444,995	£3,296
25/05/2018	12 WELLINGTON ROAD	NORTHSTOWE	CB24 1AX	Terraced	110	1184	£364,995	£3,318
25/10/2019	38 WELLINGTON ROAD	NORTHSTOWE	CB24 1AX	Terraced	106	1141	£359,995	£3,396
20/12/2019	44 WELLINGTON ROAD	NORTHSTOWE	CB24 1AX	Terraced	106	1141	£359,995	£3,396
27/09/2019	105 HERON ROAD	NORTHSTOWE	CB24 1AS	Terraced	97	1044	£356,995	£3,680
29/03/2019	87 HERON ROAD	NORTHSTOWE	CB24 1AS	Terraced	65	700	£250,000	£3,846
25/06/2019	18 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Terraced	74	797	£289,995	£3,919
29/11/2018	9 WARREN WAY	NORTHSTOWE	CB24 1AP	Terraced	88	947	£349,995	£3,977
18/05/2018	1 SHUTE LANE	NORTHSTOWE	CB24 1BH	Terraced	89	958	£359,995	£4,045
30/10/2018	8 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Terraced	65	700	£264,995	£4,077
31/05/2018	5 PEDERSEN WAY	NORTHSTOWE	CB24 1BJ	Terraced	77	829	£316,995	£4,117
08/06/2018	11 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Terraced	83	893	£345,000	£4,157
08/06/2018	10 ORCHARD WAY	NORTHSTOWE	CB24 1AG	Terraced	83	893	£349,995	£4,217
20/12/2019	48 WELLINGTON ROAD	NORTHSTOWE	CB24 1AX	Terraced	77	829	£324,995	£4,221
31/10/2018	32 HERON ROAD	NORTHSTOWE	CB24 1AR	Terraced	65	700	£274,995	£4,231
26/06/2019	34 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Terraced	65	700	£275,000	£4,231
24/08/2019	85 HERON ROAD	NORTHSTOWE	CB24 1AS	Terraced	65	700	£277,500	£4,269
29/06/2018	7 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Terraced	65	700	£279,995	£4,308
08/06/2018	12 ORCHARD WAY	NORTHSTOWE	CB24 1AG	Terraced	65	700	£279,995	£4,308
29/06/2018	6 HERON ROAD	NORTHSTOWE	CB24 1AR	Terraced	65	700	£279,995	£4,308
28/06/2018	8 HERON ROAD	NORTHSTOWE	CB24 1AR	Terraced	65	700	£279,995	£4,308
26/09/2019	48 STIRLING ROAD	NORTHSTOWE	CB24 1BW	Terraced	62	667	£270,000	£4,355
31/01/2019	10 COS ROAD	NORTHSTOWE	CB24 1AE	Terraced	65	700	£284,995	£4,385
27/06/2019	28 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Terraced	65	700	£284,995	£4,385
19/08/2019	30 CUCKOO WAY	NORTHSTOWE	CB24 1AQ	Terraced	65	700	£284,995	£4,385
31/10/2018	30 HERON ROAD	NORTHSTOWE	CB24 1AR	Terraced	65	700	£284,995	£4,385
29/06/2018	5 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Terraced	65	700	£286,995	£4,415
29/06/2018	9 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Terraced	65	700	£286,995	£4,415
31/10/2018	6 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Terraced	65	700	£289,995	£4,461
31/01/2019	8 COS ROAD	NORTHSTOWE	CB24 1AE	Terraced	65	700	£292,995	£4,508
31/01/2019	12 COS ROAD	NORTHSTOWE	CB24 1AE	Terraced	65	700	£292,995	£4,508
30/10/2018	10 GRENADIER DRIVE	NORTHSTOWE	CB24 1AF	Terraced	65	700	£292,995	£4,508

Date	Number	Street	Settlement	Postcode	Type	Size sqm	Size sqft	Price Paid	Price psm
13/08/2018		23 STAR DRIVE	WATERBEACH	CB25 9RE	Detached	88	947	£389,995	£4,432
16/11/2018		3 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Detached	88	947	£395,995	£4,500
29/06/2018		7 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Detached	88	947	£390,995	£4,443
24/05/2018		8 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Detached	88	947	£385,995	£4,386
29/08/2018		1 DIMMOCK ROAD	WATERBEACH	CB25 9GT	Detached	92	990	£420,000	£4,565
11/03/2019		3 DIMMOCK ROAD	WATERBEACH	CB25 9GT	Detached	92	990	£402,500	£4,375
30/04/2019		5 DIMMOCK ROAD	WATERBEACH	CB25 9GT	Detached	92	990	£402,000	£4,370
02/08/2018		7 DIMMOCK ROAD	WATERBEACH	CB25 9GT	Detached	92	990	£420,000	£4,565
06/08/2018	DIMMOCK HOUSE	CODY ROAD	WATERBEACH	CB25 9LS	Detached	92	990	£417,000	£4,533
28/09/2018		10 WATERMANS ROAD	WATERBEACH	CB25 9RP	Detached	92	990	£394,995	£4,293
21/11/2018		13 WATERMANS ROAD	WATERBEACH	CB25 9RP	Detached	92	990	£389,995	£4,239
20/12/2018		23 WATERMANS ROAD	WATERBEACH	CB25 9RP	Detached	92	990	£392,995	£4,272
17/12/2018		24 WATERMANS ROAD	WATERBEACH	CB25 9RP	Detached	92	990	£392,995	£4,272
20/12/2018		35 WATERMANS ROAD	WATERBEACH	CB25 9RP	Detached	92	990	£393,995	£4,283
10/05/2019		2 MASON ROAD	WATERBEACH	CB25 9GS	Detached	101	1,087	£400,000	£3,960
11/01/2019		7 MASON ROAD	WATERBEACH	CB25 9GS	Detached	101	1,087	£400,000	£3,960
03/01/2019		9 MASON ROAD	WATERBEACH	CB25 9GS	Detached	101	1,087	£400,000	£3,960
29/06/2018		44 HARVEY WAY	WATERBEACH	CB25 9GJ	Detached	111	1,195	£415,000	£3,739
28/09/2018		20 WATERMANS ROAD	WATERBEACH	CB25 9RP	Detached	112	1,206	£471,995	£4,214
26/06/2019		5 ROBSON TERRACE	WATERBEACH	CB25 9GR	Detached	117	1,259	£440,000	£3,761
31/05/2019		6 ROBSON TERRACE	WATERBEACH	CB25 9GR	Detached	117	1,259	£440,000	£3,761
28/09/2018		16 WATERMANS ROAD	WATERBEACH	CB25 9RP	Detached	119	1,281	£419,995	£3,529
28/06/2019		1 ANGLERS WAY	WATERBEACH	CB25 9RD	Detached	129	1,389	£489,995	£3,798
10/10/2019		12 WATERMANS ROAD	WATERBEACH	CB25 9RP	Detached	129	1,389	£480,995	£3,729
14/11/2019		10 GIBSON CLOSE	WATERBEACH	CB25 9HY	Detached	140	1,507	£550,000	£3,929
20/09/2018		2 ROBSON TERRACE	WATERBEACH	CB25 9GR	Detached	143	1,539	£550,000	£3,846
06/01/2020		3 MASON ROAD	WATERBEACH	CB25 9GS	Detached	143	1,539	£527,500	£3,689
10/12/2018		11 MASON ROAD	WATERBEACH	CB25 9GS	Detached	143	1,539	£550,000	£3,846
28/09/2018		4 DIMMOCK ROAD	WATERBEACH	CB25 9GT	Detached	143	1,539	£550,000	£3,846
04/06/2019		2 BARNFIELD CLOSE	WATERBEACH	CB25 9GW	Detached	160	1,722	£595,000	£3,719
30/11/2018		6 DIMMOCK ROAD	WATERBEACH	CB25 9GT	Detached	170	1,830	£590,000	£3,471
10/05/2019		1 MASON ROAD	WATERBEACH	CB25 9GS	Detached	171	1,841	£600,000	£3,509
22/10/2019		5 MASON ROAD	WATERBEACH	CB25 9GS	Detached	171	1,841	£578,000	£3,380
27/09/2018		2 DIMMOCK ROAD	WATERBEACH	CB25 9GT	Detached	171	1,841	£620,000	£3,626
02/08/2019	MASON HOUSE	CODY ROAD	WATERBEACH	CB25 9LS	Detached	171	1,841	£600,000	£3,509
21/11/2019		12 GIBSON CLOSE	WATERBEACH	CB25 9HY	Detached	201	2,164	£600,000	£2,985
05/10/2018		2 HARVEY WAY	WATERBEACH	CB25 9GJ	Detached	222	2,390	£640,000	£2,883
04/07/2018		5 HARVEY WAY	WATERBEACH	CB25 9GJ	Detached	222	2,390	£699,995	£3,153
28/06/2018		42 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Semi-Detach	58	624	£278,995	£4,810
28/06/2018		44 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Semi-Detach	58	624	£278,995	£4,810
28/06/2018		46 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Semi-Detach	58	624	£278,995	£4,810
28/06/2018		48 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Semi-Detach	58	624	£278,995	£4,810
31/07/2018		6 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	58	624	£279,995	£4,828
31/07/2018		8 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	58	624	£279,995	£4,828
14/12/2018		33 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	58	624	£281,995	£4,862
31/05/2018		19 STAR DRIVE	WATERBEACH	CB25 9RE	Semi-Detach	69	743	£339,995	£4,927
29/06/2018		27 STAR DRIVE	WATERBEACH	CB25 9RE	Semi-Detach	69	743	£339,995	£4,927
28/09/2018		29 STAR DRIVE	WATERBEACH	CB25 9RE	Semi-Detach	69	743	£339,995	£4,927
25/05/2018		34 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Semi-Detach	69	743	£339,995	£4,927
31/05/2019		15 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	69	743	£310,995	£4,507
16/05/2019		17 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	69	743	£310,995	£4,507
20/12/2018		19 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	69	743	£339,995	£4,927
28/06/2019		27 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	69	743	£413,995	£6,000
29/06/2018		42 HARVEY WAY	WATERBEACH	CB25 9GJ	Semi-Detach	72	775	£308,000	£4,278
29/06/2018		46 HARVEY WAY	WATERBEACH	CB25 9GJ	Semi-Detach	72	775	£309,000	£4,292
25/05/2018		48 HARVEY WAY	WATERBEACH	CB25 9GJ	Semi-Detach	72	775	£340,000	£4,722
16/08/2019		47 BANNOLD ROAD	WATERBEACH	CB25 9LQ	Semi-Detach	117	1,259	£431,000	£3,684
29/08/2019		49 BANNOLD ROAD	WATERBEACH	CB25 9LQ	Semi-Detach	117	1,259	£430,000	£3,675
28/09/2018		2 STAR DRIVE	WATERBEACH	CB25 9RE	Semi-Detach	119	1,281	£419,995	£3,529
28/06/2018		1 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Semi-Detach	119	1,281	£419,995	£3,529
10/08/2018		18 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	119	1,281	£419,995	£3,529
28/02/2019		25 WATERMANS ROAD	WATERBEACH	CB25 9RP	Semi-Detach	119	1,281	£413,995	£3,479
31/08/2018		13 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Terraced	58	624	£271,995	£4,690
31/08/2018		15 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Terraced	58	624	£271,995	£4,690
14/12/2018		39 WATERMANS ROAD	WATERBEACH	CB25 9RP	Terraced	58	624	£272,995	£4,707
14/12/2018		17 HOP BINE DRIVE	WATERBEACH	CB25 9RF	Terraced	69	743	£327,995	£4,754
28/06/2019		45 WATERMANS ROAD	WATERBEACH	CB25 9RP	Terraced	69	743	£300,000	£4,348
12/12/2019		17 GIBSON CLOSE	WATERBEACH	CB25 9HY	Terraced	86	926	£360,000	£4,186
09/01/2020		8 GIBSON CLOSE	WATERBEACH	CB25 9HY	Terraced	98	1,055	£370,000	£3,776
03/01/2020		9 GIBSON CLOSE	WATERBEACH	CB25 9HY	Terraced	98	1,055	£425,000	£4,337
21/12/2018		29 WATERMANS ROAD	WATERBEACH	CB25 9RP	Terraced	119	1,281	£391,995	£3,294
13/12/2019		22 WATERMANS ROAD	WATERBEACH	CB25 9RP	Terraced	129	1,389	£480,995	£3,729
25/11/2019		14 GIBSON CLOSE	WATERBEACH	CB25 9HY	Terraced	168	1,808	£612,500	£3,646

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ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme				700 Units					
AH Policy requirement (% Target)				40%					
AH tenure split %	Affordable Rent:			75%					
	Shared ownership			25%					
	First Homes			0%		0.0% % of total (>10% for HWP (Feb 2017))			
Open Market Sale (OMS) housing				60%					
				100%					
CIL Rate (£ psm)				0.00		£ psm			
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
3 bed House	40.00%	168.0	40.00%	112.0	40%	280.0			
4 bed House	30.00%	126.0	30.00%	84.0	30%	210.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	30.00%	126.0	30.00%	84.0	30%	210.0			
Total number of units	100.0%	420.0	100.0%	280.0	100%	700.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %			Gross (GIA) per unit (sqm) (sqft)			
1 bed House		0				0.0 0			
2 bed House		0				0.0 0			
3 bed House	97	1,044				97.0 1,044			
4 bed House	150	1,615				150.0 1,615			
5 bed House		0				0.0 0			
1 bed Flat		0	85.0%			0.0 0			
2 bed Flat	70	753	85.0%			82.4 886			
AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %			Gross (GIA) per unit (sqm) (sqft)			
1 bed House		0				0.0 0			
2 bed House		0				0.0 0			
3 bed House	97	1,044				97.0 1,044			
4 bed House	124	1,335				124.0 1,335			
5 bed House		0				0.0 0			
1 bed Flat		0	85.0%			0.0 0			
2 bed Flat	70	753	85.0%			82.4 886			
Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm) (sqft)				
1 bed House	0	0	0	0	0 0				
2 bed House	0	0	0	0	0 0				
3 bed House	16,296	175,409	10,864	116,939	27,160 292,348				
4 bed House	18,900	203,438	10,416	112,117	29,316 315,555				
5 bed House	0	0	0	0	0 0				
1 bed Flat	0	0	0	0	0 0				
2 bed Flat	10,376	111,691	6,918	74,461	17,294 186,152				
	45,572	490,538	28,198	303,517	73,770 794,055				
AH % by floor area:			38.22% AH % by floor area due to mix						
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House		#DIV/0!	#DIV/0!	0					
2 bed House		#DIV/0!	#DIV/0!	0					
3 bed House	500,000	5,155	479	140,000,000					
4 bed House	670,000	4,467	415	140,700,000					
5 bed House		#DIV/0!	#DIV/0!	0					
1 bed Flat		#DIV/0!	#DIV/0!	0					
2 bed Flat	365,000	5,214	484	76,650,000					
				357,350,000					
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
3 bed House	250,000	2,577	50%	350,000	3,608	70%	0	0	70%
4 bed House	335,000	2,702	50%	469,000	3,782	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed Flat	182,500	2,607	50%	255,500	3,650	70%	0	0	70%

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GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	168.0	@	500,000	84,000,000
4 bed House	126.0	@	670,000	84,420,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	126.0	@	365,000	45,990,000
	420.0			214,410,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	84.0	@	250,000	21,000,000
4 bed House	63.0	@	335,000	21,105,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	63.0	@	182,500	11,497,500
	210.0			53,602,500
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	28.0	@	350,000	9,800,000
4 bed House	21.0	@	469,000	9,849,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	21.0	@	255,500	5,365,500
	70.0			25,014,500
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential	700.0			293,027,000
<i>AH on-site cost analysis:</i>				
	872	£ psm (total GIA sqm)	£MV less £GDV	64,323,000
			91,890	£ per unit (total units)
Grant	700	@	0	-
Total GDV				293,027,000

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DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(280,000)
Statutory Planning Fees (Residential)				(93,799)
CIL		45,572 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Site Specific S106 Contributions	Year 1	0 £ per dwelling		-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
Biodiversity offset		42,545 £ per gross hectare		(567,267)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	700 units @	0 per unit	(567,267)
	S106 analysis:	0.19% % of GDV	810 £ per unit (total units)	-
AH Commuted Sum		73,770 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		-
Construction Costs -				
Site Clearance and Demolition		23.06 acres @	110,000 £ per acre (if brownfield)	(2,536,893)
Infrastructure costs -	Year 1	30,000 build costs		(21,000,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	23.06 acres @	per acre	(21,000,000)
	Infra. Costs analysis:	7.17% % of GDV	30,000 £ per unit (total units)	-
1 bed House		- sqm @	1,227 psm	-
2 bed House		- sqm @	1,227 psm	-
3 bed House		27,160 sqm @	1,227 psm	(33,325,320)
4 bed House		29,316 sqm @	1,227 psm	(35,970,732)
5 bed House		- sqm @	1,227 psm	-
1 bed Flat		- sqm @	1,376 psm	-
2 bed Flat	73,770	17,294 sqm @	1,376 psm	(23,796,706)
External works		93,092,758 @	15.0% 19,948 £ per unit	(13,963,914)
Category 2 Housing		0% of All units	700 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	700 units @ 10,307 £ per dwelling	-
Water efficiency			700 units @ 9 £ per dwelling	(6,300)
Contingency		130,599,865 @	5.0%	(6,529,993)
Professional Fees		130,599,865 @	10.0%	(13,059,986)
Disposal Costs -				
Marketing and Promotion		214,410,000 OMS @	1.50%	(3,216,150)
Residential Sales Agent Costs		214,410,000 OMS @	1.00%	(2,144,100)
Residential Sales Legal Costs		214,410,000 OMS @	0.50%	(1,072,050)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(1,738,013)
Developers Profit -				
Margin on AH		78,617,000	6.00% on AH values	(4,717,020)
Profit on GDV		214,410,000	20.00%	(42,882,000)
		159,301,223	26.92% on costs	(42,882,000)
		293,027,000	16.24% blended	(47,599,020)
TOTAL COSTS				(206,900,243)

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RESIDUAL LAND VALUE				
Residual Land Value (gross)				86,126,757
SDLT	86,126,757 @		5.0% (slabbed)	(4,295,838)
Acquisition Agent fees	86,126,757 @		1.0%	(861,268)
Acquisition Legal fees	86,126,757 @		0.5%	(430,634)
Interest on Land	86,126,757 @		7.50%	(6,459,507)
Residual Land Value				74,079,511
<i>RLV analysis:</i>	105,828 £ per plot	7,937,090 £ per ha	3,212,096 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		75.0 dph		
Site Area (Resi)		9.33 ha	23.06 acres	
<i>Density analysis:</i>		7,904 sqm/ha	34,430 sqft/ac	
Threshold Land Value	22,592 £ per plot	1,694,399 £ per ha	685,714 £ per acre	15,814,393
Gross to net land area	70%			

BALANCE			
Surplus/(Deficit)	6,242,691 £ per ha	2,526,382 £ per acre	58,265,117

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SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	58,265,117	-	71,638,638	68,298,560	64,957,055	61,611,461	58,265,117	54,913,434	51,559,321
		5,000	67,877,116	64,546,063	61,210,924	57,875,785	54,539,012	51,198,934	47,857,834
		10,000	64,079,613	60,752,607	57,425,600	54,098,594	50,769,334	47,438,553	44,107,773
		15,000	60,242,501	56,921,278	53,600,055	50,278,825	46,955,006	43,631,187	40,307,368
		20,000	56,368,877	53,051,059	49,733,241	46,414,150	43,094,929	39,775,708	36,456,487
		25,000	52,456,049	49,139,033	45,822,017	42,505,002	39,187,986	35,870,970	32,553,954
		30,000	48,501,965	45,184,733	41,867,501	38,550,269	35,233,037	31,915,805	28,598,489
		35,000	44,508,521	41,188,621	37,868,722	34,548,823	31,228,924	27,907,933	24,585,772
		40,000	40,474,654	37,149,607	33,824,560	30,499,514	27,174,467	23,845,975	20,517,415
		45,000	36,395,675	33,066,579	29,733,874	26,401,169	23,067,119	19,729,633	16,391,660
		50,000	32,274,324	28,936,839	25,595,500	22,252,596	18,906,614	15,557,647	12,203,870
		55,000	28,109,509	24,760,542	21,408,255	18,052,580	14,691,768	11,327,254	7,956,204
		60,000	23,900,094	20,537,058	17,170,934	13,799,884	10,421,305	7,036,375	3,643,168
	65,000	19,643,564	16,265,196	12,882,310	9,492,989	6,093,927	2,687,705	(727,354)	
	70,000	15,339,185	11,943,748	8,543,266	5,133,530	1,714,730	(1,713,662)	(5,153,606)	
	75,000	10,989,092	7,577,897	4,156,813	725,877	(2,715,406)	(6,169,006)	(9,636,910)	
	80,000	6,598,527	3,165,416	(277,206)	(3,730,934)	(7,197,745)	(10,679,635)	(14,178,614)	
	85,000	2,160,993	(1,292,861)	(4,758,580)	(8,238,150)	(11,733,575)	(15,246,612)	(19,263,970)	
	90,000	(2,319,415)	(5,796,665)	(9,288,536)	(12,796,729)	(16,407,903)	(20,532,496)	(24,683,483)	
	95,000	(6,843,497)	(10,347,069)	(13,867,317)	(17,667,993)	(21,808,760)	(25,972,742)	(30,165,619)	
	100,000	(11,416,745)	(14,948,017)	(18,936,520)	(23,088,519)	(27,262,000)	(31,465,808)	(35,708,739)	
CIL £ psm	58,265,117	£0	71,638,638	68,298,560	64,957,055	61,611,461	58,265,117	54,913,434	51,559,321
		£50	68,435,377	65,301,408	62,166,707	59,028,364	55,887,520	52,741,870	49,593,284
		£100	65,202,884	62,281,499	59,354,017	56,426,310	53,492,047	50,555,103	47,613,493
		£150	61,945,375	59,233,841	56,520,184	53,801,784	51,079,257	48,352,964	45,619,139
		£200	58,659,344	56,162,671	53,662,764	51,157,537	48,648,959	46,133,428	43,611,096
		£250	55,345,135	53,066,411	50,781,482	48,493,581	46,199,002	43,897,614	41,589,209
		£300	52,003,891	49,942,371	47,878,225	45,807,320	43,729,899	41,645,806	39,553,319
		£350	48,631,219	46,794,022	44,949,574	43,099,264	41,242,590	39,377,828	37,503,268
		£400	45,231,837	43,616,695	41,996,755	40,370,722	38,736,613	37,092,457	35,338,229
		£450	41,799,338	40,413,148	39,020,836	37,618,849	36,208,732	34,788,777	33,257,291
		£500	38,338,946	37,181,634	36,016,900	34,844,232	33,661,923	32,468,279	31,261,619
		£550	34,845,086	33,921,178	32,989,494	32,048,326	31,095,980	30,130,776	29,151,047
		£600	31,321,810	30,633,067	29,934,893	29,226,813	28,507,135	27,774,185	27,025,408
	£650	27,763,935	27,313,945	26,854,125	26,382,786	25,898,252	25,398,862	24,882,966	
	£700	24,175,855	23,966,757	23,746,863	23,514,952	23,269,353	23,005,860	22,724,136	
	£750	20,551,233	20,587,169	20,611,081	20,621,301	20,616,173	20,594,053	20,549,636	
	£800	16,895,271	17,178,352	17,448,830	17,704,916	17,942,550	18,161,519	18,359,291	
	£850	13,202,201	13,736,451	14,256,341	14,760,222	15,246,460	15,710,609	16,150,992	
	£900	9,480,684	10,265,516	11,036,704	11,792,042	12,526,577	13,240,109	13,925,478	
	£950	5,724,791	6,763,691	7,787,907	8,795,799	9,785,455	10,747,894	11,683,489	
	£1,000	1,938,887	3,235,110	4,514,809	5,776,361	7,018,156	8,236,581	9,424,173	
Change in build costs	58,265,117	80%	93,662,318	90,224,539	86,781,263	83,336,757	79,885,846	76,431,676	72,972,562
		85%	88,172,784	84,757,336	81,340,591	77,919,497	74,495,648	71,065,966	67,633,019
		90%	82,672,473	79,281,768	75,891,064	72,494,013	69,096,585	65,692,164	62,284,863
		95%	77,161,244	73,796,095	70,429,774	67,058,580	63,686,370	60,308,560	56,927,534
		100%	71,638,638	68,298,560	64,957,055	61,611,461	58,265,117	54,913,434	51,559,321
		105%	66,102,883	62,787,396	59,471,379	56,150,904	52,830,428	49,505,051	46,178,504
		110%	60,552,190	57,260,817	53,969,444	50,675,141	47,379,306	44,081,659	40,780,787
		115%	54,984,567	51,717,028	48,449,295	45,181,562	41,910,722	38,639,053	35,365,313
	120%	49,394,651	46,152,917	42,909,650	39,665,086	36,420,522	33,174,910	29,926,935	
Market units sale values	58,265,117	80%	33,306,102	32,397,738	31,482,281	30,560,825	29,632,526	28,696,547	27,752,058
		85%	42,933,025	41,409,763	39,880,805	38,348,032	36,810,359	35,266,237	33,714,955
		90%	52,525,262	50,391,455	48,256,643	46,115,555	43,971,754	41,823,890	39,668,908
		95%	62,091,030	59,352,896	56,612,982	53,869,011	51,122,404	48,372,099	45,616,256
		100%	71,638,638	68,298,560	64,957,055	61,611,461	58,265,117	54,913,434	51,559,321
		105%	81,172,860	77,231,978	73,291,095	69,345,944	65,399,712	61,450,447	57,498,216
		110%	90,697,434	86,156,652	81,615,870	77,075,088	72,529,352	67,983,231	63,433,483
		115%	100,210,226	95,074,895	89,936,046	84,796,035	79,656,025	74,512,053	69,366,562
	120%	109,718,297	103,984,398	98,250,498	92,516,038	86,777,239	81,038,440	75,297,877	

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		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	58,265,117								
	500,000	75,921,698	72,581,620	69,240,115	65,894,521	62,548,177	59,196,495	55,842,381	
	550,000	74,768,565	71,428,487	68,086,982	64,741,388	61,395,044	58,043,361	54,689,248	
	600,000	73,615,432	70,275,353	66,933,848	63,588,255	60,241,911	56,890,228	53,536,115	
	650,000	72,462,298	69,122,220	65,780,715	62,435,121	59,088,777	55,737,095	52,382,981	
	685,714	71,309,165	67,969,087	64,627,582	61,281,988	57,935,644	54,583,961	51,229,848	
	700,000	70,156,032	66,815,953	63,474,448	60,128,855	56,782,511	53,430,828	50,076,715	
TLV (per acre)	685,714	71,309,165	67,969,087	64,627,582	61,281,988	57,935,644	54,583,961	51,229,848	
	700,000	70,156,032	66,815,953	63,474,448	60,128,855	56,782,511	53,430,828	50,076,715	
	800,000	69,002,898	65,662,820	62,321,315	58,975,721	55,629,377	52,277,695	48,923,581	
	850,000	67,849,765	64,509,687	61,168,182	57,822,588	54,476,244	51,124,561	47,770,448	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	58,265,117								
	10	(52,316,937)	(55,634,754)	(58,952,572)	(62,270,390)	(65,588,208)	(68,906,026)	(72,223,844)	
	20	19,270,361	15,943,355	12,613,291	9,282,510	5,951,729	2,616,989	(718,150)	
	30	43,087,089	39,753,199	36,418,059	33,082,920	29,742,949	26,402,871	23,058,215	
	Density dph	40	54,986,164	51,651,024	48,312,845	44,972,767	41,631,263	38,285,669	34,937,893
		50	62,124,859	58,786,768	55,446,690	52,105,973	48,760,379	45,414,087	42,062,404
		60	66,882,742	63,542,664	60,202,586	56,858,717	53,513,123	50,163,761	46,812,078
		70	70,279,811	66,939,733	63,599,128	60,253,534	56,907,940	53,556,385	50,203,126
		75	71,638,638	68,298,560	64,957,055	61,611,461	58,265,117	54,913,434	51,559,321
	75.0	80	72,827,612	69,487,534	66,145,241	62,799,647	59,452,536	56,100,853	52,745,992
		90	74,809,236	71,469,157	68,125,551	64,779,957	61,431,567	58,079,884	54,723,778
100		76,394,534	73,054,456	69,709,799	66,364,205	63,014,791	59,663,108	56,306,006	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	58,265,117								
	15%	83,931,478	79,823,097	75,713,290	71,599,394	67,484,747	63,364,762	59,242,346	
	16%	81,472,910	77,518,190	73,562,043	69,501,807	65,440,821	61,474,496	57,505,741	
	17%	79,014,342	75,213,282	71,410,796	67,604,221	63,796,895	59,984,231	56,169,136	
	18%	76,555,774	72,908,375	69,259,549	65,606,634	61,952,969	58,293,965	54,632,531	
	19%	74,097,206	70,603,467	67,108,302	63,609,048	60,109,043	56,603,700	53,095,926	
	20%	71,638,638	68,298,560	64,957,055	61,611,461	58,265,117	54,913,434	51,559,321	
	21%	69,180,070	65,993,652	62,805,808	59,613,875	56,421,191	53,223,169	50,022,716	
	22%	66,721,502	63,688,745	60,654,561	57,616,288	54,577,265	51,532,903	48,486,111	
	23%	64,262,934	61,383,837	58,503,314	55,618,702	52,733,339	49,842,638	46,949,506	
	24%	61,804,366	59,078,930	56,352,067	53,621,115	50,889,413	48,152,372	45,412,901	
25%	59,345,798	56,774,022	54,200,820	51,623,529	49,045,487	46,462,107	43,876,296		
Profit % on GDV	20.00%								
	15%	83,931,478	79,823,097	75,713,290	71,599,394	67,484,747	63,364,762	59,242,346	
	16%	81,472,910	77,518,190	73,562,043	69,501,807	65,440,821	61,474,496	57,505,741	
	17%	79,014,342	75,213,282	71,410,796	67,604,221	63,796,895	59,984,231	56,169,136	
	18%	76,555,774	72,908,375	69,259,549	65,606,634	61,952,969	58,293,965	54,632,531	
	19%	74,097,206	70,603,467	67,108,302	63,609,048	60,109,043	56,603,700	53,095,926	
	20%	71,638,638	68,298,560	64,957,055	61,611,461	58,265,117	54,913,434	51,559,321	
	21%	69,180,070	65,993,652	62,805,808	59,613,875	56,421,191	53,223,169	50,022,716	
	22%	66,721,502	63,688,745	60,654,561	57,616,288	54,577,265	51,532,903	48,486,111	
	23%	64,262,934	61,383,837	58,503,314	55,618,702	52,733,339	49,842,638	46,949,506	
	24%	61,804,366	59,078,930	56,352,067	53,621,115	50,889,413	48,152,372	45,412,901	
25%	59,345,798	56,774,022	54,200,820	51,623,529	49,045,487	46,462,107	43,876,296		

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban B
 Title: Urban B - 50 units
 Notes: Brownfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme			50 Units						
AH Policy requirement (% Target)			40%						
AH tenure split %	Affordable Rent:		75%						
	Shared ownership		25%						
	First Homes		0%		0.0% % of total (>10% for HWP (Feb 2017))				
Open Market Sale (OMS) housing			60%						
			100%						
CIL Rate (£ psm)			0.00		£ psm				
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
Studio	5.00%	1.5	5.00%	1.0	5%	2.5			
1 bed flat	30.00%	9.0	30.00%	6.0	30%	15.0			
2 bed flat	50.00%	15.0	50.00%	10.0	50%	25.0			
3 bed flat	15.00%	4.5	15.00%	3.0	15%	7.5			
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[blank]	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	30.0	100.0%	20.0	100%	50.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %		Gross (GIA) per unit (sqm)	(sqft)			
Studio	40	431	85.0%		40.0	431			
1 bed flat	50	538	85.0%		50.0	538			
2 bed flat	75	807	85.0%		75.0	807			
3 bed flat	86	926	85.0%		86.0	926			
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AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %		Gross (GIA) per unit (sqm)	(sqft)			
Studio	40	431	85.0%		40.0	431			
1 bed flat	50	538	85.0%		50.0	538			
2 bed flat	75	807	85.0%		75.0	807			
3 bed flat	86	926	85.0%		86.0	926			
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Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm) (sqft)				
Studio	60	646	40	431	100	1,076			
1 bed flat	450	4,844	300	3,229	750	8,073			
2 bed flat	1,125	12,109	750	8,073	1,875	20,182			
3 bed flat	387	4,166	258	2,777	645	6,943			
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	2,022	21,765	1,348	14,510	3,370	36,274			
	AH % by floor area:		40.00% AH % by floor area due to mix						
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
Studio	280,000	7,000	650	700,000					
1 bed flat	330,000	6,600	613	4,950,000					
2 bed flat	455,000	6,067	564	11,375,000					
3 bed flat	500,000	5,814	540	3,750,000					
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				20,775,000					
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV	Shared ownership £	£psm	% of MV	First Homes £	£psm	% of MV
Studio	140,000	3,500	50%	196,000	4,900	70%	0	0	70%
1 bed flat	165,000	3,300	50%	231,000	4,620	70%	0	0	70%
2 bed flat	227,500	3,033	50%	318,500	4,247	70%	0	0	70%
3 bed flat	250,000	2,907	50%	350,000	4,070	70%	0	0	70%
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200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban B
 Title: Urban B - 50 units
 Notes: Brownfield

GROSS DEVELOPMENT VALUE					
OMS GDV - (part houses due to % mix)					
Studio	1.5	@	280,000		420,000
1 bed flat	9.0	@	330,000		2,970,000
2 bed flat	15.0	@	455,000		6,825,000
3 bed flat	4.5	@	500,000		2,250,000
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	30.0				12,465,000
Affordable Rent GDV -					
Studio	0.8	@	140,000		105,000
1 bed flat	4.5	@	165,000		742,500
2 bed flat	7.5	@	227,500		1,706,250
3 bed flat	2.3	@	250,000		562,500
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	15.0				3,116,250
LCHO GDV -					
Studio	0.3	@	196,000		49,000
1 bed flat	1.5	@	231,000		346,500
2 bed flat	2.5	@	318,500		796,250
3 bed flat	0.8	@	350,000		262,500
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	5.0				1,454,250
First Homes GDV -					
Studio	0.0	@	0		-
1 bed flat	0.0	@	0		-
2 bed flat	0.0	@	0		-
3 bed flat	0.0	@	0		-
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	0.0				-
Sub-total GDV Residential	50.0				17,035,500
<i>AH on-site cost analysis:</i>					
			1,110 £ psm (total GIA sqm)	£MV less £GDV	3,739,500
				74,790 £ per unit (total units)	
Grant	50	@	0		-
Total GDV					17,035,500

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban B
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 Notes: Brownfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(60,000)
Statutory Planning Fees (Residential)				(19,250)
CIL		2,022 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
	Biodiversity offset	42,545	£ per gross hectare	(14,928)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	50 units @	0 per unit	(14,928)
	S106 analysis:	0.09% % of GDV	299 £ per unit (total units)	-
AH Commuted Sum		3,370 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		-
Construction Costs -				
Site Clearance and Demolition		0.82 acres @	110,000 £ per acre (if brownfield)	(90,603)
Infrastructure costs -				
	Year 1	0	build costs	-
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	0.82 acres @	per acre	-
	Infra. Costs analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Studio		100 sqm @	1,376 psm	(137,600)
1 bed flat		750 sqm @	1,376 psm	(1,032,000)
2 bed flat		1,875 sqm @	1,376 psm	(2,580,000)
3 bed flat		645 sqm @	1,376 psm	(887,520)
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[blank]	3,370	- sqm @	psm	-
External works		4,637,120 @	15.0% 13,911 £ per unit	(695,568)
Category 2 Housing		0% of All units	50 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	50 units @ 10,307 £ per dwelling	-
Water efficiency			50 units @ 9 £ per dwelling	(450)
Contingency		5,423,741 @	5.0%	(271,187)
Professional Fees		5,423,741 @	10.0%	(542,374)
Disposal Costs -				
Marketing and Promotion		12,465,000 OMS @	1.50%	(186,975)
Residential Sales Agent Costs		12,465,000 OMS @	1.00%	(124,650)
Residential Sales Legal Costs		12,465,000 OMS @	0.50%	(62,325)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(166,126)
Developers Profit -				
Margin on AH		4,570,500	6.00% on AH values	(274,230)
Profit on GDV		12,465,000	20.00%	(2,493,000)
		6,871,556	36.28% on costs	(2,493,000)
		17,035,500	16.24% blended	(2,767,230)
TOTAL COSTS				(9,638,786)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban B
 Title: Urban B - 50 units
 Notes: Brownfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				7,396,714
SDLT	7,396,714 @		5.0% (slabbed)	(359,336)
Acquisition Agent fees	7,396,714 @		1.0%	(73,967)
Acquisition Legal fees	7,396,714 @		0.5%	(36,984)
Interest on Land	7,396,714 @		7.50%	(554,754)
Residual Land Value				6,371,674
<i>RLV analysis:</i>	127,433 £ per plot	19,115,021 £ per ha	7,735,743 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		150.0 dph		
Site Area (Resi)		0.33 ha	0.82 acres	
<i>Density analysis:</i>		10,110 sqm/ha	44,040 sqft/ac	
Threshold Land Value	8,323 £ per plot	1,248,505 £ per ha	505,263 £ per acre	416,168
Gross to net land area	95%			

BALANCE				
Surplus/(Deficit)		17,866,516 £ per ha	7,230,480 £ per acre	5,955,505

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Scheme Ref: Urban B
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 Notes: Brownfield

SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	5,955,505	-	6,695,116	6,511,929	6,327,267	6,142,336	5,955,505	5,767,376	5,577,342
		7,500	6,294,475	6,111,695	5,928,915	5,744,372	5,559,665	5,372,834	5,184,628
		15,000	5,892,307	5,711,055	5,528,274	5,345,494	5,161,476	4,976,814	4,790,162
		22,500	5,489,244	5,308,058	5,126,871	4,944,854	4,762,074	4,578,581	4,393,919
		30,000	5,084,572	4,904,688	4,723,808	4,542,621	4,361,433	4,178,653	3,995,685
		37,500	4,679,073	4,499,189	4,319,305	4,139,421	3,958,372	3,777,185	3,595,232
		45,000	4,271,852	4,092,979	3,913,806	3,733,922	3,554,039	3,374,123	3,192,936
		52,500	3,863,901	3,685,028	3,506,156	3,327,283	3,148,410	2,968,656	2,788,772
		60,000	3,454,087	3,275,931	3,097,775	2,919,332	2,740,459	2,561,587	2,382,714
		67,500	3,043,670	2,865,514	2,687,359	2,509,203	2,331,047	2,152,891	1,974,735
		75,000	2,631,217	2,453,482	2,275,747	2,098,013	1,920,278	1,742,474	1,564,318
		82,500	2,218,319	2,040,585	1,862,850	1,685,115	1,507,381	1,329,646	1,151,911
		90,000	1,803,181	1,625,570	1,447,959	1,270,348	1,092,737	915,126	737,516
		97,500	1,387,788	1,210,035	1,032,249	854,463	676,676	498,890	321,104
		105,000	969,917	792,131	614,345	436,558	258,772	80,911	(97,351)
		112,500	551,795	373,532	195,269	17,007	(161,256)	(339,519)	(536,144)
	120,000	131,365	(46,898)	(225,161)	(403,723)	(611,595)	(819,783)	(1,027,972)	
	127,500	(289,568)	(478,857)	(687,045)	(895,234)	(1,103,471)	(1,312,920)	(1,522,369)	
	135,000	(762,496)	(970,684)	(1,179,373)	(1,388,823)	(1,598,272)	(1,808,192)	(2,019,258)	
	142,500	(1,255,276)	(1,464,725)	(1,674,174)	(1,883,851)	(2,094,917)	(2,305,983)	(2,518,671)	
	150,000	(1,750,077)	(1,959,526)	(2,170,577)	(2,381,643)	(2,593,388)	(2,806,430)	(4,197,981)	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	5,955,505	£0	6,695,116	6,511,929	6,327,267	6,142,336	5,955,505	5,767,376	5,577,342
		£100	6,412,243	6,247,143	6,081,241	5,914,152	5,745,892	5,576,385	5,404,463
		£200	6,129,266	5,981,949	5,834,528	5,685,698	5,536,183	5,384,384	5,230,835
		£300	5,844,683	5,716,756	5,587,014	5,457,245	5,325,303	5,192,239	5,057,207
		£400	5,560,100	5,450,059	5,339,500	5,227,438	5,114,423	5,000,054	4,883,134
		£500	5,275,052	5,183,262	5,091,008	4,997,604	4,903,222	4,806,748	4,708,456
		£600	4,988,748	4,916,228	4,841,998	4,767,530	4,691,067	4,613,441	4,533,779
		£700	4,702,445	4,647,819	4,592,988	4,536,306	4,478,912	4,419,889	4,358,485
		£800	4,415,281	4,379,410	4,342,677	4,305,082	4,266,187	4,225,414	4,182,752
		£900	4,127,247	4,110,394	4,092,162	4,073,324	4,052,750	4,030,939	4,007,019
		£1,000	3,839,213	3,840,362	3,841,510	3,840,702	3,839,312	3,835,990	3,830,479
		£1,100	3,549,891	3,570,330	3,589,480	3,608,081	3,625,031	3,640,339	3,653,683
		£1,200	3,260,116	3,299,291	3,337,451	3,374,603	3,410,303	3,444,688	3,476,888
		£1,300	2,970,340	3,027,627	3,084,913	3,140,576	3,195,576	3,248,313	3,299,075
		£1,400	2,678,814	2,755,963	2,831,360	2,906,548	2,979,705	3,051,480	3,121,210
		£1,500	2,387,287	2,482,859	2,577,807	2,671,315	2,763,679	2,854,646	2,943,172
	£1,600	2,095,274	2,209,552	2,323,345	2,435,873	2,547,492	2,656,815	2,764,232	
	£1,700	1,801,985	1,935,994	2,068,259	2,200,271	2,330,160	2,458,792	2,585,293	
	£1,800	1,508,696	1,661,035	1,813,173	1,963,406	2,112,829	2,260,670	2,405,934	
	£1,900	1,214,399	1,386,077	1,556,746	1,726,540	1,894,994	2,061,450	2,225,912	
	£2,000	919,337	1,110,378	1,300,119	1,489,119	1,676,348	1,862,229	2,045,891	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	5,955,505	80%	7,840,723	7,653,892	7,466,287	7,277,003	7,085,648	6,892,128	6,689,458
		85%	7,555,171	7,369,419	7,182,588	6,994,238	6,804,583	6,612,560	6,417,710
		90%	7,268,978	7,084,316	6,898,114	6,711,283	6,522,189	6,331,495	6,138,333
		95%	6,982,785	6,798,122	6,613,460	6,426,810	6,238,425	6,050,140	5,858,408
	Change in build costs	100%	6,695,116	6,511,929	6,327,267	6,142,336	5,955,505	5,767,376	5,577,342
		105%	6,407,193	6,224,413	6,041,074	5,856,412	5,671,032	5,484,201	5,295,326
		110%	6,119,105	5,936,490	5,753,710	5,570,219	5,385,557	5,199,727	5,012,562
		115%	5,829,441	5,648,254	5,465,786	5,283,006	5,099,364	4,914,702	4,728,423
120%		5,539,777	5,358,591	5,177,404	4,995,083	4,812,303	4,628,508	4,443,846	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	5,955,505	80%	4,485,924	4,443,019	4,398,230	4,352,719	4,305,741	4,256,433	4,204,787
		85%	5,039,051	4,960,378	4,881,062	4,800,191	4,718,217	4,634,400	4,548,007
		90%	5,591,502	5,477,697	5,363,482	5,247,662	5,130,646	5,012,058	4,891,118
		95%	6,143,309	5,995,017	5,845,375	5,695,134	5,543,076	5,389,717	5,234,230
	Market units sale values	100%	6,695,116	6,511,929	6,327,267	6,142,336	5,955,505	5,767,376	5,577,342
		105%	7,246,923	7,028,243	6,809,160	6,589,135	6,367,935	6,145,034	5,920,454
		110%	7,798,060	7,544,556	7,291,052	7,035,934	6,780,364	6,522,693	6,263,566
		115%	8,348,794	8,060,869	7,772,671	7,482,732	7,192,634	6,900,351	6,606,678
120%		8,899,528	8,577,183	8,253,838	7,929,531	7,604,625	7,278,010	6,949,790	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban B
 Title: Urban B - 50 units
 Notes: Brownfield

		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	5,955,505							
	505,263	6,695,116	6,511,929	6,327,267	6,142,336	5,955,505	5,767,376	5,577,342
	550,000	6,658,268	6,475,081	6,290,419	6,105,488	5,918,657	5,730,527	5,540,494
	600,000	6,617,085	6,433,898	6,249,236	6,064,305	5,877,474	5,689,344	5,499,311
	650,000	6,575,901	6,392,714	6,208,052	6,023,121	5,836,290	5,648,161	5,458,127
	700,000	6,534,718	6,351,531	6,166,869	5,981,938	5,795,107	5,606,977	5,416,944
	750,000	6,493,535	6,310,348	6,125,686	5,940,755	5,753,924	5,565,794	5,375,761
800,000	6,452,351	6,269,164	6,084,502	5,899,571	5,712,740	5,524,611	5,334,577	
850,000	6,411,168	6,227,981	6,043,319	5,858,388	5,671,557	5,483,427	5,293,394	
		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	5,955,505							
	20	3,218,515	3,037,074	2,854,294	2,671,514	2,487,309	2,302,640	2,115,809
	40	5,224,813	5,042,033	4,858,922	4,674,260	4,489,106	4,302,275	4,113,626
	60	5,893,133	5,710,353	5,526,352	5,341,690	5,155,651	4,968,577	4,779,292
	80	6,227,292	6,044,512	5,860,066	5,675,404	5,488,924	5,301,409	5,111,988
	100	6,427,788	6,244,957	6,060,295	5,875,633	5,688,887	5,501,109	5,311,426
	120	6,561,452	6,378,443	6,193,781	6,009,027	5,822,196	5,634,242	5,444,384
	140	6,656,926	6,473,790	6,289,128	6,104,248	5,917,417	5,729,337	5,539,354
	150	6,695,116	6,511,929	6,327,267	6,142,336	5,955,505	5,767,376	5,577,342
	160	6,728,532	6,545,301	6,360,639	6,175,663	5,988,833	5,800,659	5,610,582
	180	6,784,225	6,600,920	6,416,258	6,231,209	6,044,378	5,856,131	5,665,981
200	6,828,780	6,645,415	6,460,753	6,275,645	6,088,814	5,900,509	5,710,301	
		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	5,955,505							
	15%	7,409,776	7,181,923	6,952,595	6,722,997	6,491,500	6,258,704	6,024,005
	16%	7,266,844	7,047,924	6,827,529	6,606,865	6,384,301	6,160,439	5,934,672
	17%	7,123,912	6,913,926	6,702,464	6,490,733	6,277,102	6,062,173	5,845,340
	18%	6,980,980	6,779,927	6,577,398	6,374,601	6,169,903	5,963,907	5,756,007
	19%	6,838,048	6,645,928	6,452,333	6,258,468	6,062,704	5,865,641	5,666,675
	20%	6,695,116	6,511,929	6,327,267	6,142,336	5,955,505	5,767,376	5,577,342
	21%	6,552,184	6,377,931	6,202,202	6,026,204	5,848,306	5,669,110	5,488,010
	22%	6,409,252	6,243,932	6,077,136	5,910,072	5,741,107	5,570,844	5,398,677
	23%	6,266,320	6,109,933	5,952,071	5,793,939	5,633,908	5,472,578	5,309,345
	24%	6,123,388	5,975,934	5,827,005	5,677,807	5,526,709	5,374,313	5,220,012
25%	5,980,456	5,841,936	5,701,940	5,561,675	5,419,510	5,276,047	5,130,680	
		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Profit % on GDV	20.00%							
	15%	7,409,776	7,181,923	6,952,595	6,722,997	6,491,500	6,258,704	6,024,005
	16%	7,266,844	7,047,924	6,827,529	6,606,865	6,384,301	6,160,439	5,934,672
	17%	7,123,912	6,913,926	6,702,464	6,490,733	6,277,102	6,062,173	5,845,340
	18%	6,980,980	6,779,927	6,577,398	6,374,601	6,169,903	5,963,907	5,756,007
	19%	6,838,048	6,645,928	6,452,333	6,258,468	6,062,704	5,865,641	5,666,675
	20%	6,695,116	6,511,929	6,327,267	6,142,336	5,955,505	5,767,376	5,577,342
	21%	6,552,184	6,377,931	6,202,202	6,026,204	5,848,306	5,669,110	5,488,010
	22%	6,409,252	6,243,932	6,077,136	5,910,072	5,741,107	5,570,844	5,398,677
	23%	6,266,320	6,109,933	5,952,071	5,793,939	5,633,908	5,472,578	5,309,345
	24%	6,123,388	5,975,934	5,827,005	5,677,807	5,526,709	5,374,313	5,220,012
25%	5,980,456	5,841,936	5,701,940	5,561,675	5,419,510	5,276,047	5,130,680	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban C
 Title: Urban C - 700 units
 Notes: Brownfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme	700 Units								
AH Policy requirement (% Target)	40%								
AH tenure split %	Affordable Rent:	75%							
	Shared ownership	25%							
	First Homes	0%							
Open Market Sale (OMS) housing	60%								
	100%								
CIL Rate (£ psm)	0.00 £ psm								
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
Studio	5.00%	21.0	5.00%	14.0	5%	35.0			
1 bed flat	30.00%	126.0	30.00%	84.0	30%	210.0			
2 bed flat	50.00%	210.0	50.00%	140.0	50%	350.0			
3 bed flat	15.00%	63.0	15.00%	42.0	15%	105.0			
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[blank]	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	420.0	100.0%	280.0	100%	700.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit (sqm) (sqft)					
Studio	40	431		40.0	431				
1 bed flat	50	538		50.0	538				
2 bed flat	75	807		75.0	807				
3 bed flat	86	926		86.0	926				
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AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit (sqm) (sqft)					
Studio	40	431		40.0	431				
1 bed flat	50	538		50.0	538				
2 bed flat	75	807		75.0	807				
3 bed flat	86	926		86.0	926				
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Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm) (sqft)				
Studio	840	9,042	560	6,028	1,400	15,069			
1 bed flat	6,300	67,813	4,200	45,208	10,500	113,021			
2 bed flat	15,750	169,532	10,500	113,021	26,250	282,553			
3 bed flat	5,418	58,319	3,612	38,879	9,030	97,198			
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	28,308	304,705	18,872	203,137	47,180	507,841			
	AH % by floor area:		40.00% AH % by floor area due to mix						
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
Studio	265,000	6,625	615	9,275,000					
1 bed flat	300,000	6,000	557	63,000,000					
2 bed flat	365,000	4,867	452	127,750,000					
3 bed flat	410,000	4,767	443	43,050,000					
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				243,075,000					
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV	Shared ownership £	£psm	% of MV	First Homes £	£psm	% of MV
Studio	132,500	3,313	50%	185,500	4,638	70%	0	0	70%
1 bed flat	150,000	3,000	50%	210,000	4,200	70%	0	0	70%
2 bed flat	182,500	2,433	50%	255,500	3,407	70%	0	0	70%
3 bed flat	205,000	2,384	50%	287,000	3,337	70%	0	0	70%
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200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban C
 Title: Urban C - 700 units
 Notes: Brownfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
Studio	21.0	@	265,000	5,565,000
1 bed flat	126.0	@	300,000	37,800,000
2 bed flat	210.0	@	365,000	76,650,000
3 bed flat	63.0	@	410,000	25,830,000
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	420.0			145,845,000
Affordable Rent GDV -				
Studio	10.5	@	132,500	1,391,250
1 bed flat	63.0	@	150,000	9,450,000
2 bed flat	105.0	@	182,500	19,162,500
3 bed flat	31.5	@	205,000	6,457,500
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	210.0			36,461,250
LCHO GDV -				
Studio	3.5	@	185,500	649,250
1 bed flat	21.0	@	210,000	4,410,000
2 bed flat	35.0	@	255,500	8,942,500
3 bed flat	10.5	@	287,000	3,013,500
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	70.0			17,015,250
First Homes GDV -				
Studio	0.0	@	0	-
1 bed flat	0.0	@	0	-
2 bed flat	0.0	@	0	-
3 bed flat	0.0	@	0	-
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	0.0			-
Sub-total GDV Residential	700.0			199,321,500
<i>AH on-site cost analysis:</i>				
	927	£ psm (total GIA sqm)		£MV less £GDV 43,753,500
				62,505 £ per unit (total units)
Grant	700	@	0	-
Total GDV				199,321,500

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban C
 Title: Urban C - 700 units
 Notes: Brownfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(280,000)
Statutory Planning Fees (Residential)				(93,799)
CIL		28,308 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
	Biodiversity offset	42,545	£ per gross hectare	(132,362)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	700 units @	0 per unit	(132,362)
	S106 analysis:	0.07% % of GDV	189 £ per unit (total units)	-
AH Commuted Sum		47,180 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		-
Construction Costs -				
Site Clearance and Demolition		5.77 acres @	110,000 £ per acre (if brownfield)	(634,223)
Infrastructure costs -	Year 1	30,000 build costs		(21,000,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	5.77 acres @	per acre	(21,000,000)
	Infra. Costs analysis:	10.54% % of GDV	30,000 £ per unit (total units)	-
Studio		1,400 sqm @	1,568 psm	(2,195,200)
1 bed flat		10,500 sqm @	1,568 psm	(16,464,000)
2 bed flat		26,250 sqm @	1,568 psm	(41,160,000)
3 bed flat		9,030 sqm @	1,568 psm	(14,159,040)
[blank]		- sqm @	psm	-
[blank]		- sqm @	psm	-
[blank]		47,180 - sqm @	psm	-
External works		73,978,240 @	15.0% 15,852 £per unit	(11,096,736)
Category 2 Housing		0% of All units	700 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	700 units @ 10,307 £ per dwelling	-
Water efficiency			700 units @ 9 £ per dwelling	(6,300)
Contingency		106,715,499 @	5.0%	(5,335,775)
Professional Fees		106,715,499 @	10.0%	(10,671,550)
Disposal Costs -				
Marketing and Promotion		145,845,000 OMS @	1.50%	(2,187,675)
Residential Sales Agent Costs		145,845,000 OMS @	1.00%	(1,458,450)
Residential Sales Legal Costs		145,845,000 OMS @	0.50%	(729,225)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(4,191,586)
Developers Profit -				
Margin on AH		53,476,500	6.00% on AH values	(3,208,590)
Profit on GDV		145,845,000	20.00%	(29,169,000)
		131,795,921	22.13% on costs	(29,169,000)
		199,321,500	16.24% blended	(32,377,590)
TOTAL COSTS				(164,173,511)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban C
 Title: Urban C - 700 units
 Notes: Brownfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				35,147,989
SDLT	35,147,989 @		5.0% (slabbed)	(1,746,899)
Acquisition Agent fees	35,147,989 @		1.0%	(351,480)
Acquisition Legal fees	35,147,989 @		0.5%	(175,740)
Interest on Land	35,147,989 @		7.50%	(2,636,099)
Residual Land Value				30,237,770
<i>RLV analysis:</i>	43,197 £ per plot	12,959,044 £ per ha	5,244,453 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		300.0 dph		
Site Area (Resi)		2.33 ha	5.77 acres	
<i>Density analysis:</i>		20,220 sqm/ha	88,080 sqft/ac	
Threshold Land Value	5,271 £ per plot	1,581,440 £ per ha	640,000 £ per acre	3,690,027
Gross to net land area	75%			

BALANCE				
Surplus/(Deficit)		11,377,604 £ per ha	4,604,453 £ per acre	26,547,744

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban C
 Title: Urban C - 700 units
 Notes: Brownfield

SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	26,547,744	-	36,034,530	33,662,993	31,291,457	28,919,921	26,547,744	24,175,023	21,802,302
	2,000	34,330,565	31,959,779	29,588,994	27,218,209	24,847,423	22,476,638	20,105,853	
	4,000	32,612,963	30,242,366	27,871,770	25,501,173	23,130,577	20,759,981	18,389,384	
	6,000	30,880,997	28,509,833	26,138,670	23,767,506	21,396,343	19,025,179	16,654,016	
	8,000	29,137,933	26,765,758	24,393,583	22,021,408	19,649,139	17,275,504	14,901,870	
	10,000	27,383,642	25,010,008	22,636,374	20,262,034	17,886,490	15,510,947	13,135,404	
	12,000	25,617,991	23,242,447	20,866,413	18,488,508	16,110,603	13,732,698	11,352,031	
	14,000	23,840,846	21,462,941	19,082,775	16,702,053	14,321,330	11,937,508	9,553,511	
	16,000	22,052,075	19,670,521	17,286,523	14,902,526	12,515,925	10,128,191	7,737,557	
	18,000	20,251,541	17,865,251	15,477,516	13,088,518	10,696,584	8,302,784	5,906,167	
	20,000	18,439,108	16,047,545	13,655,611	11,260,146	8,863,529	6,461,795	4,057,061	
	22,000	16,614,126	14,217,509	11,820,184	9,418,397	7,013,814	4,605,721	2,192,128	
	24,000	14,776,786	12,375,000	9,970,567	7,563,123	5,149,948	2,735,985	315,152	
	26,000	12,927,321	10,519,876	8,107,768	5,694,174	3,276,151	855,162	(1,574,008)	
	28,000	11,065,588	8,651,994	6,237,150	3,816,317	1,392,296	(1,036,885)	(3,475,495)	
	30,000	9,196,221	6,777,316	4,356,483	1,929,430	(501,748)	(2,940,358)	(5,667,830)	
	32,000	7,317,482	4,895,733	2,466,564	33,389	(2,406,111)	(5,046,671)	(7,909,327)	
34,000	5,432,867	3,003,698	568,525	(1,871,931)	(4,425,531)	(7,286,765)	(10,165,753)		
36,000	3,540,831	1,103,662	(1,337,750)	(3,804,391)	(6,665,520)	(9,540,613)	(12,437,280)		
38,000	1,638,799	(803,570)	(3,252,730)	(6,044,274)	(8,917,896)	(11,808,336)	(14,724,081)		
40,000	(269,389)	(2,718,549)	(5,423,028)	(8,295,320)	(11,182,819)	(14,090,087)	(17,026,334)		
CIL £ psm	26,547,744	£0	36,034,530	33,662,993	31,291,457	28,919,921	26,547,744	24,175,023	21,802,302
	£50	33,775,630	31,547,316	29,318,538	27,089,056	24,859,574	22,630,092	20,400,609	
	£100	31,493,425	29,408,862	27,324,299	25,239,736	23,155,173	21,070,329	18,984,173	
	£150	29,187,722	27,249,799	25,311,877	23,372,980	21,433,460	19,493,940	17,554,420	
	£200	26,863,750	25,072,619	23,281,489	21,490,358	19,699,021	17,905,849	16,112,678	
	£250	24,519,133	22,878,187	21,235,504	19,592,492	17,949,480	16,306,212	14,660,707	
	£300	22,154,081	20,663,055	19,172,030	17,680,201	16,186,647	14,693,093	13,198,394	
	£350	19,768,809	18,430,531	17,090,788	15,751,044	14,410,586	13,067,843	11,725,101	
	£400	17,361,408	16,177,379	14,993,341	13,806,254	12,619,168	11,430,586	10,240,022	
	£450	14,934,476	13,905,487	12,875,977	11,846,468	10,813,434	9,780,393	8,744,185	
	£500	12,484,212	11,614,197	10,742,180	9,868,585	8,994,148	8,116,539	7,237,471	
	£550	10,014,412	9,302,213	8,590,014	7,875,509	7,159,237	6,440,384	5,719,608	
	£600	7,531,571	6,978,025	6,424,478	5,867,076	5,309,550	4,751,792	4,189,263	
	£650	5,035,521	4,641,473	4,245,977	3,848,038	3,450,098	3,050,628	2,647,774	
	£700	2,526,089	2,292,398	2,055,755	1,818,256	1,580,756	1,340,480	1,098,148	
	£750	3,104	(70,015)	(146,212)	(222,409)	(298,606)	(378,770)	(459,722)	
	£800	(2,533,608)	(2,446,056)	(2,360,076)	(2,274,096)	(2,188,536)	(2,107,239)	(2,025,942)	
£850	(5,312,894)	(5,023,136)	(4,733,552)	(4,443,969)	(4,156,206)	(3,871,990)	(3,600,884)		
£900	(8,296,477)	(7,816,245)	(7,336,013)	(6,855,780)	(6,378,628)	(5,903,691)	(5,430,171)		
£950	(11,296,716)	(10,624,780)	(9,952,843)	(9,280,907)	(8,613,236)	(7,946,529)	(7,282,289)		
£1,000	(14,313,644)	(13,448,935)	(12,584,226)	(11,719,722)	(10,860,185)	(10,000,647)	(9,144,563)		
Change in build costs	26,547,744	80%	54,323,838	51,926,323	49,526,282	47,123,792	44,716,729	42,306,349	39,891,391
		85%	49,810,111	47,421,311	45,029,898	42,636,948	40,240,556	37,842,054	35,439,563
		90%	45,261,991	42,880,243	40,497,705	38,112,640	35,727,186	33,338,386	30,947,885
		95%	40,673,517	38,297,135	35,920,753	33,544,370	31,166,029	28,787,175	26,407,150
		100%	36,034,530	33,662,993	31,291,457	28,919,921	26,547,744	24,175,023	21,802,302
		105%	31,337,408	28,966,811	26,596,215	24,225,618	21,855,022	19,484,426	17,113,829
		110%	26,574,175	24,200,541	21,826,907	19,453,272	17,079,638	14,704,216	12,328,673
		115%	21,742,511	19,361,789	16,981,067	14,598,720	12,214,722	9,828,906	7,441,172
	120%	16,828,242	14,436,307	12,040,872	9,643,099	7,241,312	4,834,125	2,421,260	
Market units sale values	26,547,744	80%	8,387,868	7,773,874	7,158,945	6,541,295	5,921,239	5,298,998	4,673,357
		85%	15,484,554	14,412,668	13,340,782	12,267,863	11,193,234	10,118,080	9,040,437
		90%	22,432,773	20,918,578	19,404,384	17,890,190	16,375,971	14,859,720	13,343,470
		95%	29,275,871	27,329,905	25,383,939	23,437,973	21,491,595	19,544,180	17,596,764
		100%	36,034,530	33,662,993	31,291,457	28,919,921	26,547,744	24,175,023	21,802,302
		105%	42,727,622	39,935,163	37,142,704	34,350,246	31,557,787	28,765,328	25,972,870
		110%	49,371,561	46,162,421	42,953,280	39,744,140	36,534,999	33,325,859	30,116,718
		115%	55,980,726	52,357,711	48,734,273	45,110,835	41,487,397	37,863,958	34,240,520
	120%	62,560,816	58,525,638	54,490,459	50,455,280	46,420,102	42,384,923	38,349,744	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Urban C
 Title: Urban C - 700 units
 Notes: Brownfield

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	26,547,744								
	505,263	36,811,377	34,439,841	32,068,305	29,696,769	27,324,592	24,951,871	22,579,150	
	550,000	36,553,440	34,181,903	31,810,367	29,438,831	27,066,654	24,693,933	22,321,212	
	600,000	36,265,156	33,893,620	31,522,084	29,150,548	26,778,370	24,405,650	22,032,929	
	640,000	36,034,530	33,662,993	31,291,457	28,919,921	26,547,744	24,175,023	21,802,302	
	650,000	35,976,873	33,605,337	31,233,801	28,862,264	26,490,087	24,117,366	21,744,645	
	700,000	35,688,590	33,317,053	30,945,517	28,573,981	26,201,804	23,829,083	21,456,362	
TLV (per acre)	640,000	35,400,306	33,028,770	30,657,234	28,285,698	25,913,520	23,540,800	21,168,079	
	800,000	35,112,023	32,740,487	30,368,951	27,997,414	25,625,237	23,252,516	20,879,795	
	850,000	34,823,740	32,452,203	30,080,667	27,709,131	25,336,954	22,964,233	20,591,512	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	26,547,744								
	40	6,271,369	3,900,206	1,529,042	(842,121)	(3,214,122)	(5,586,297)	(7,958,472)	
	80	23,460,154	21,089,683	18,719,212	16,348,740	13,978,269	11,607,798	9,237,327	
	120	29,178,754	26,807,968	24,437,183	22,066,397	19,695,612	17,324,778	14,953,241	
	Density dph	160	32,036,920	29,665,952	27,294,416	24,922,880	22,551,343	20,179,807	17,808,271
		200	33,750,506	31,378,970	29,007,434	26,635,897	24,264,361	21,892,825	19,520,741
		240	34,892,518	32,520,982	30,149,445	27,777,909	25,406,373	23,034,243	20,661,522
		280	35,708,240	33,336,704	30,965,168	28,593,632	26,221,807	23,849,086	21,476,365
		300	36,034,530	33,662,993	31,291,457	28,919,921	26,547,744	24,175,023	21,802,302
	320	36,320,033	33,948,496	31,576,960	29,205,424	26,832,939	24,460,218	22,087,497	
	360	36,795,871	34,424,335	32,052,798	29,680,985	27,308,264	24,935,543	22,562,822	
	400	37,176,541	34,805,005	32,433,469	30,061,245	27,688,524	25,315,803	22,943,082	
			AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	26,547,744								
	15%	44,396,310	41,502,162	38,608,015	35,713,867	32,819,079	29,923,747	27,028,414	
	16%	42,723,954	39,934,328	37,144,703	34,355,078	31,564,812	28,774,002	25,983,192	
	17%	41,051,598	38,366,495	35,681,392	32,996,289	30,310,545	27,624,257	24,937,969	
	Profit % on GDV	18%	39,379,242	36,798,661	34,218,080	31,637,500	29,056,278	26,474,512	23,892,747
		19%	37,706,896	35,230,827	32,754,769	30,278,710	27,802,011	25,324,768	22,847,524
		20%	36,034,530	33,662,993	31,291,457	28,919,921	26,547,744	24,175,023	21,802,302
		21%	34,362,174	32,095,160	29,828,146	27,561,132	25,293,477	23,025,278	20,757,079
		22%	32,689,818	30,527,326	28,364,834	26,202,343	24,039,210	21,875,533	19,711,857
		23%	31,017,462	28,959,492	26,901,523	24,843,553	22,784,943	20,725,789	18,666,634
		24%	29,345,106	27,391,658	25,438,211	23,484,764	21,530,676	19,576,044	17,621,412
25%		27,672,750	25,823,825	23,974,900	22,125,975	20,276,409	18,426,299	16,576,189	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge A
 Title: Edge of Cambridge A- 3,870 units
 Notes: Greenfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme		3,870 Units							
AH Policy requirement (% Target)		40%							
AH tenure split %		Affordable Rent:		75%					
		Shared ownership:		25%					
		First Homes:		0%		0.0% % of total (>10% for HWP (Feb 2017))			
Open Market Sale (OMS) housing		60%							
		100%							
CIL Rate (£ psm)		0.00 £ psm							
Unit mix -									
	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	696.6	30.00%	464.4	30%	1,161.0			
3 bed House	40.00%	928.8	40.00%	619.2	40%	1,548.0			
4 bed House	30.00%	696.6	30.00%	464.4	30%	1,161.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	2,322.0	100.0%	1,548.0	100%	3,870.0			
OMS Unit Floor areas -									
	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit					
1 bed House		0		(sqm)	(sqft)				
2 bed House	75	807		75.0	807				
3 bed House	97	1,044		97.0	1,044				
4 bed House	150	1,615		150.0	1,615				
5 bed House		0		0.0	0				
1 bed Flat		0	85.0%	0.0	0				
2 bed Flat		0	85.0%	0.0	0				
AH Unit Floor areas -									
	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit					
1 bed House		0		(sqm)	(sqft)				
2 bed House	75	807		75.0	807				
3 bed House	97	1,044		97.0	1,044				
4 bed House	124	1,335		124.0	1,335				
5 bed House		0		0.0	0				
1 bed Flat		0	85.0%	0.0	0				
2 bed Flat		0	85.0%	0.0	0				
Total Gross Floor areas -									
	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units)				
1 bed House	0	0	0	0	0	0			
2 bed House	52,245	562,360	34,830	374,907	87,075	937,267			
3 bed House	90,094	969,759	60,062	646,506	150,156	1,616,266			
4 bed House	104,490	1,124,721	57,586	619,846	162,076	1,744,567			
5 bed House	0	0	0	0	0	0			
1 bed Flat	0	0	0	0	0	0			
2 bed Flat	0	0	0	0	0	0			
	246,829	2,656,841	152,478	1,641,259	399,307	4,298,100			
AH % by floor area: 38.19% AH % by floor area due to mix									
Open Market Sales values (£) -									
	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House		#DIV/0!	#DIV/0!	0					
2 bed House	400,000	5,333	495	464,000,000					
3 bed House	500,000	5,155	479	774,000,000					
4 bed House	670,000	4,467	415	777,870,000					
5 bed House		#DIV/0!	#DIV/0!	0					
1 bed Flat		#DIV/0!	#DIV/0!	0					
2 bed Flat		#DIV/0!	#DIV/0!	0					
				2,016,270,000					
Affordable Housing values (£) -									
	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
2 bed House	200,000	2,667	50%	280,000	3,733	70%	0	0	70%
3 bed House	250,000	2,577	50%	350,000	3,608	70%	0	0	70%
4 bed House	335,000	2,702	50%	469,000	3,782	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge A
 Title: Edge of Cambridge A- 3,870 units
 Notes: Greenfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	696.6	@	400,000	278,640,000
3 bed House	928.8	@	500,000	464,400,000
4 bed House	696.6	@	670,000	466,722,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	2,322.0			1,209,762,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	348.3	@	200,000	69,660,000
3 bed House	464.4	@	250,000	116,100,000
4 bed House	348.3	@	335,000	116,680,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	1,161.0			302,440,500
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	116.1	@	280,000	32,508,000
3 bed House	154.8	@	350,000	54,180,000
4 bed House	116.1	@	469,000	54,450,900
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	387.0			141,138,900
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential	3,870.0			1,653,341,400
<i>AH on-site cost analysis:</i>				
	909	£ psm (total GIA sqm)	£MV less £GDV	362,928,600
			93,780	£ per unit (total units)
Grant	3,870	@	0	-
Total GDV				1,653,341,400

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge A
 Title: Edge of Cambridge A- 3,870 units
 Notes: Greenfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(1,380,000)
Statutory Planning Fees (Residential)				(458,349)
CIL		246,829 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
	Biodiversity offset	42,545	£ per gross hectare	(8,232,458)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	3,870 units @	0 per unit	(8,232,458)
	S106 analysis:	0.50% % of GDV	2,127 £ per unit (total units)	
AH Commuted Sum		399,307 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		
Construction Costs -				
Site Clearance and Demolition		239.07 acres @	0 £ per acre (if brownfield)	-
Infrastructure costs -	Year 1	20,000	build costs	(77,400,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	239.07 acres @	per acre	(77,400,000)
	Infra. Costs analysis:	4.68% % of GDV	20,000 £ per unit (total units)	
1 bed House		- sqm @	1,277 psm	-
2 bed House		87,075 sqm @	1,277 psm	(111,194,775)
3 bed House		150,156 sqm @	1,277 psm	(191,749,212)
4 bed House		162,076 sqm @	1,277 psm	(206,970,541)
5 bed House		- sqm @	1,277 psm	-
1 bed Flat		- sqm @	psm	-
2 bed Flat	399,307	- sqm @	psm	-
External works		509,914,528 @	15.0% 19,764 £per unit	(76,487,179)
Category 2 Housing		0% of All units	3,870 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	3,870 units @ 10,307 £ per dwelling	-
Water efficiency			3,870 units @ 9 £ per dwelling	(34,830)
Contingency		663,836,537 @	5.0%	(33,191,827)
Professional Fees		663,836,537 @	10.0%	(66,383,654)
Disposal Costs -				
Marketing and Promotion		1,209,762,000 OMS @	1.50%	(18,146,430)
Residential Sales Agent Costs		1,209,762,000 OMS @	1.00%	(12,097,620)
Residential Sales Legal Costs		1,209,762,000 OMS @	0.50%	(6,048,810)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(1,888,425)
Developers Profit -				
Margin on AH		443,579,400	6.00% on AH values	(26,614,764)
Profit on GDV		1,209,762,000	20.00%	(241,952,400)
		811,664,110	29.81% on costs (241,952,400)	
		1,653,341,400	16.24% blended (268,567,164)	
TOTAL COSTS				(1,080,231,274)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge A
 Title: Edge of Cambridge A- 3,870 units
 Notes: Greenfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				573,110,126
SDLT	573,110,126 @		5.0% (slabbed)	(28,645,006)
Acquisition Agent fees	573,110,126 @		1.0%	(5,731,101)
Acquisition Legal fees	573,110,126 @		0.5%	(2,865,551)
Interest on Land	573,110,126 @		7.50%	(42,983,259)
Residual Land Value				492,885,209
<i>RLV analysis:</i>	127,361 £ per plot	5,094,421 £ per ha	2,061,684 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		40.0 dph		
Site Area (Resi)		96.75 ha	239.07 acres	
<i>Density analysis:</i>		4,127 sqm/ha	17,978 sqft/ac	
Threshold Land Value	12,355 £ per plot	494,200 £ per ha	200,000 £ per acre	47,813,850
Gross to net land area	50%			

BALANCE				
Surplus/(Deficit)		4,600,221 £ per ha	1,861,684 £ per acre	445,071,359

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge A
 Title: Edge of Cambridge A- 3,870 units
 Notes: Greenfield

SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	445,071,359	-	523,477,227	503,879,457	484,281,686	464,679,330	445,071,359	425,463,388	405,855,417
	7,500	494,355,179	474,775,004	455,194,830	435,614,655	416,034,480	396,454,306	376,874,131	
	15,000	464,677,146	445,094,781	425,512,081	405,924,527	386,336,973	366,749,419	347,161,865	
	22,500	434,419,751	414,803,062	395,186,374	375,569,685	355,948,861	336,317,894	316,686,926	
	30,000	403,552,339	383,885,877	364,212,704	344,525,001	324,835,382	305,124,087	285,406,534	
	37,500	372,063,809	352,313,037	332,547,455	312,761,061	292,960,485	273,131,048	253,273,791	
	45,000	339,922,405	320,057,418	300,162,816	280,241,630	260,286,793	240,291,180	220,247,609	
	52,500	307,097,035	287,082,653	267,029,082	246,929,133	226,775,559	206,561,055	186,276,649	
	60,000	273,563,553	253,365,676	233,108,486	212,784,611	192,386,621	171,892,508	151,297,997	
	67,500	239,292,574	218,868,530	198,361,861	177,767,676	157,061,487	136,234,454	115,255,997	
	75,000	204,237,355	183,551,849	162,748,601	141,828,072	120,761,816	99,522,188	78,078,072	
	82,500	168,374,489	147,374,809	126,226,606	104,915,400	83,415,156	61,694,052	39,696,482	
	90,000	131,663,188	110,295,084	88,744,969	66,981,422	44,972,503	22,676,343	33,595	
	97,500	94,061,158	72,268,792	50,248,524	27,968,097	5,364,921	(17,601,841)	(41,006,599)	
	105,000	55,524,545	33,250,450	10,690,395	(12,198,895)	(35,479,717)	(61,080,591)	(89,336,170)	
	112,500	16,007,885	(6,821,941)	(29,994,080)	(54,518,957)	(82,503,205)	(111,153,918)	(140,577,852)	
120,000	(24,547,204)	(48,031,174)	(75,796,443)	(104,136,812)	(133,165,413)	(162,944,360)	(193,617,709)		
127,500	(69,186,427)	(97,280,496)	(125,966,375)	(155,328,869)	(185,453,066)	(216,471,187)	(248,505,830)		
135,000	(118,945,207)	(147,962,781)	(177,644,053)	(208,090,120)	(239,431,982)	(271,729,250)	(309,578,107)		
142,500	(170,098,535)	(200,078,352)	(230,843,400)	(262,473,110)	(294,990,638)	(338,915,384)	(385,400,421)		
150,000	(222,640,986)	(253,693,547)	(285,582,866)	(318,275,947)	(367,252,662)	(417,737,698)	(474,222,735)		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	£0	523,477,227	503,879,457	484,281,686	464,679,330	445,071,359	425,463,388	405,855,417	
	£100	491,019,831	473,483,984	455,948,039	438,412,094	420,868,498	403,316,586	385,764,673	
	£200	457,853,931	442,454,594	427,046,319	411,627,005	396,206,387	380,765,010	365,321,353	
	£300	423,972,750	410,763,113	397,543,367	384,310,439	371,064,243	357,797,446	344,516,823	
	£400	389,332,711	378,382,377	367,419,411	356,437,819	345,428,825	334,398,727	323,341,242	
	£500	353,895,941	345,287,835	336,645,048	327,979,185	319,283,995	310,553,274	301,780,870	
	£600	317,632,547	311,432,090	305,199,252	298,922,911	292,605,434	286,241,371	279,821,589	
	£700	280,501,046	276,790,234	273,034,775	269,228,617	265,365,755	261,440,233	257,446,143	
	£800	242,458,419	241,324,606	240,132,860	238,877,249	237,551,888	236,140,030	234,636,711	
	£900	203,460,069	204,994,261	206,456,176	207,840,011	209,127,710	210,314,235	211,380,974	
	£1,000	163,455,711	167,756,748	171,966,010	176,081,883	180,071,779	183,939,869	187,683,112	
	£1,100	122,383,225	129,563,978	136,622,220	143,564,493	150,357,902	156,995,472	163,456,790	
	£1,200	80,204,553	90,358,584	100,383,190	110,256,337	119,952,528	129,459,553	138,745,652	
	£1,300	36,832,624	50,102,812	63,200,144	76,112,207	88,820,859	101,292,380	113,509,161	
	£1,400	(7,781,813)	8,718,064	25,017,048	41,093,674	56,926,809	72,476,214	87,723,434	
	£1,500	(54,680,728)	(33,843,563)	(14,207,080)	5,158,776	24,232,966	42,978,286	61,359,940	
£1,600	(109,727,873)	(82,517,285)	(55,642,844)	(31,747,827)	(9,299,454)	12,764,613	34,399,402		
£1,700	(166,493,410)	(135,011,098)	(103,911,333)	(73,238,292)	(43,710,655)	(18,200,040)	6,811,385		
£1,800	(224,983,379)	(189,072,130)	(153,607,632)	(118,606,006)	(84,147,311)	(50,302,015)	(21,435,673)		
£1,900	(285,272,543)	(244,745,758)	(204,722,348)	(165,251,774)	(126,384,928)	(88,194,982)	(50,793,063)		
£2,000	(347,084,817)	(302,006,208)	(257,326,187)	(213,199,316)	(169,763,975)	(127,100,160)	(85,286,712)		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	445,071,359	641,675,625	621,615,584	601,555,542	581,495,501	561,435,460	541,364,306	521,290,047	
	80%	612,132,689	592,194,705	572,251,918	552,301,807	532,351,697	512,401,586	492,443,394	
	85%	582,589,540	562,761,561	542,933,582	523,105,602	503,267,934	483,427,754	463,587,575	
	90%	553,042,070	533,328,416	513,610,441	493,892,466	474,174,491	454,453,922	434,723,673	
	95%	523,477,227	503,879,457	484,281,686	464,679,330	445,071,359	425,463,388	405,855,417	
	100%	493,912,384	474,424,699	454,937,013	435,449,328	415,961,642	396,470,259	376,972,292	
	105%	464,326,785	444,957,403	425,588,021	406,214,740	386,837,139	367,459,538	348,081,937	
	110%	434,738,204	415,478,995	396,219,786	376,960,577	357,701,368	338,442,159	319,177,604	
120%	405,129,783	385,987,001	366,844,219	347,701,438	328,553,479	309,404,444	290,255,408		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	445,071,359	309,501,115	303,297,642	297,094,169	290,888,125	284,671,214	278,454,304	272,226,785	
	80%	363,022,659	353,470,014	343,909,899	334,349,784	324,788,708	315,215,724	305,642,740	
	85%	416,521,402	403,618,083	390,714,763	377,802,433	364,887,854	351,973,275	339,050,655	
	90%	470,011,699	453,755,525	437,499,350	421,243,175	404,987,000	388,720,444	372,452,741	
	95%	523,477,227	503,879,457	484,281,686	464,679,330	445,071,359	425,463,388	405,855,417	
	100%	576,942,755	553,999,285	531,051,047	508,102,808	485,154,569	462,206,331	439,251,963	
	105%	630,391,805	604,103,299	577,814,793	551,526,286	525,237,780	498,942,910	472,644,154	
	110%	683,836,086	654,207,312	624,578,538	594,949,765	565,312,296	535,674,320	506,036,345	
120%	737,280,367	704,311,325	671,337,313	638,360,119	605,382,925	572,405,731	539,428,536		
Market units sale values	445,071,359	523,477,227	503,879,457	484,281,686	464,679,330	445,071,359	425,463,388	405,855,417	
	80%	576,942,755	553,999,285	531,051,047	508,102,808	485,154,569	462,206,331	439,251,963	
	85%	630,391,805	604,103,299	577,814,793	551,526,286	525,237,780	498,942,910	472,644,154	
	90%	683,836,086	654,207,312	624,578,538	594,949,765	565,312,296	535,674,320	506,036,345	
	95%	737,280,367	704,311,325	671,337,313	638,360,119	605,382,925	572,405,731	539,428,536	
	100%	798,231,848	764,311,325	731,337,313	698,360,119	665,382,925	632,405,731	599,428,536	
	105%	859,183,329	825,311,325	792,337,313	759,360,119	726,382,925	693,405,731	660,428,536	
	110%	920,134,810	886,311,325	853,337,313	820,360,119	787,382,925	754,405,731	721,428,536	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge A
 Title: Edge of Cambridge A- 3,870 units
 Notes: Greenfield

		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	445,071,359							
	80,000	552,165,537	532,567,767	512,969,996	493,367,640	473,759,669	454,151,698	434,543,727
	100,000	547,384,152	527,786,382	508,188,611	488,586,255	468,978,284	449,370,313	429,762,342
	120,000	542,602,767	523,004,997	503,407,226	483,804,870	464,196,899	444,588,928	424,980,957
	140,000	537,821,382	518,223,612	498,625,841	479,023,485	459,415,514	439,807,543	420,199,572
	160,000	533,039,997	513,442,227	493,844,456	474,242,100	454,634,129	435,026,158	415,418,187
	180,000	528,258,612	508,660,842	489,063,071	469,460,715	449,852,744	430,244,773	410,636,802
TLV (per acre)	200,000	523,477,227	503,879,457	484,281,686	464,679,330	445,071,359	425,463,388	405,855,417
	220,000	518,695,842	499,098,072	479,500,301	459,897,945	440,289,974	420,682,003	401,074,032
	240,000	513,914,457	494,316,687	474,718,916	455,116,560	435,508,589	415,900,618	396,292,647
	AH - % on site 40%							
	Balance (RLV - TLV)	445,071,359						
Density dph	10	357,919,118	338,335,259	318,751,400	299,167,541	279,583,682	259,999,823	240,415,964
	15	431,540,269	411,950,541	392,360,812	372,771,083	353,181,354	333,591,626	314,000,675
	20	468,325,741	448,736,012	429,146,283	409,549,958	389,952,188	370,354,417	350,756,647
	25	490,396,852	470,799,082	451,201,312	431,603,541	412,005,771	392,407,276	372,799,305
	30	505,099,241	485,501,471	465,903,700	446,305,930	426,706,852	407,098,881	387,490,910
	35	515,600,947	496,003,177	476,405,407	456,807,636	437,200,856	417,592,885	397,984,914
	40	523,477,227	503,879,457	484,281,686	464,679,330	445,071,359	425,463,388	405,855,417
	45	529,603,222	510,005,452	490,407,682	470,800,832	451,192,861	431,584,890	411,976,919
	50	534,504,019	514,906,248	495,306,005	475,698,034	456,090,063	436,482,091	416,871,146
	55	538,513,761	518,915,991	499,312,806	479,704,835	460,096,864	440,488,893	420,875,282
	60	541,855,213	522,257,443	502,651,807	483,043,836	463,435,865	443,827,894	424,212,062
AH - % on site 40%								
Balance (RLV - TLV)	445,071,359							
Profit % on GDV	15%	592,836,915	568,904,164	544,971,413	521,034,076	497,091,125	473,148,173	449,205,222
	16%	578,964,978	555,899,223	532,833,468	509,763,127	486,687,172	463,611,216	440,535,261
	17%	565,093,040	542,894,281	520,695,523	498,492,178	476,283,218	454,074,259	431,865,300
	18%	551,221,102	529,889,340	508,557,577	487,221,228	465,879,265	444,537,302	423,195,339
	19%	537,349,165	516,884,398	496,419,632	475,950,279	455,475,312	435,000,345	414,525,378
	20%	523,477,227	503,879,457	484,281,686	464,679,330	445,071,359	425,463,388	405,855,417
	21%	509,605,290	490,874,515	472,143,741	453,408,381	434,667,406	415,926,431	397,185,456
	22%	495,733,352	477,869,574	460,005,796	442,137,431	424,263,452	406,389,473	388,515,495
	23%	481,861,414	464,864,632	447,867,850	430,866,482	413,859,499	396,852,516	379,845,534
	24%	467,989,477	451,859,691	435,729,905	419,595,533	403,455,546	387,315,559	371,175,573
25%	454,117,539	438,854,749	423,591,959	408,324,583	393,051,593	377,778,602	362,505,612	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **Edge B**
 Title: **Edge of Cambridge B- 1,935 units**
 Notes: **Greenfield**

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme	1,935 Units								
AH Policy requirement (% Target)	40%								
AH tenure split %	Affordable Rent:		75%						
	Shared ownership		25%						
	First Homes		0%		0.0% % of total (>10% for HWP (Feb 2017))				
Open Market Sale (OMS) housing	60%								
	100%								
CIL Rate (£ psm)	0.00 £ psm								
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	348.3	30.00%	232.2	30%	580.5			
3 bed House	40.00%	464.4	40.00%	309.6	40%	774.0			
4 bed House	30.00%	348.3	30.00%	232.2	30%	580.5			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	1,161.0	100.0%	774.0	100%	1,935.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit (sqm) (sqft)					
1 bed House	0	0		0.0	0				
2 bed House	75	807		75.0	807				
3 bed House	97	1,044		97.0	1,044				
4 bed House	150	1,615		150.0	1,615				
5 bed House	0	0		0.0	0				
1 bed Flat	0	0	85.0%	0.0	0				
2 bed Flat	0	0	85.0%	0.0	0				
AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit (sqm) (sqft)					
1 bed House	0	0		0.0	0				
2 bed House	75	807		75.0	807				
3 bed House	97	1,044		97.0	1,044				
4 bed House	124	1,335		124.0	1,335				
5 bed House	0	0		0.0	0				
1 bed Flat	0	0	85.0%	0.0	0				
2 bed Flat	0	0	85.0%	0.0	0				
Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm) (sqft)				
1 bed House	0	0	0	0	0	0			
2 bed House	26,123	281,180	17,415	187,453	43,538	468,634			
3 bed House	45,047	484,880	30,031	323,253	75,078	808,133			
4 bed House	52,245	562,360	28,793	309,923	81,038	872,284			
5 bed House	0	0	0	0	0	0			
1 bed Flat	0	0	0	0	0	0			
2 bed Flat	0	0	0	0	0	0			
	123,414	1,328,420	76,239	820,630	199,653	2,149,050			
	AH % by floor area:		38.19% AH % by floor area due to mix						
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House		#DIV/0!	#DIV/0!	0					
2 bed House	400,000	5,333	495	232,200,000					
3 bed House	500,000	5,155	479	387,000,000					
4 bed House	670,000	4,467	415	388,935,000					
5 bed House		#DIV/0!	#DIV/0!	0					
1 bed Flat		#DIV/0!	#DIV/0!	0					
2 bed Flat		#DIV/0!	#DIV/0!	0					
				1,008,135,000					
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
2 bed House	200,000	2,667	50%	280,000	3,733	70%	0	0	70%
3 bed House	250,000	2,577	50%	350,000	3,608	70%	0	0	70%
4 bed House	335,000	2,702	50%	469,000	3,782	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge B
 Title: Edge of Cambridge B- 1,935 units
 Notes: Greenfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	348.3	@	400,000	139,320,000
3 bed House	464.4	@	500,000	232,200,000
4 bed House	348.3	@	670,000	233,361,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	1,161.0			604,881,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	174.2	@	200,000	34,830,000
3 bed House	232.2	@	250,000	58,050,000
4 bed House	174.2	@	335,000	58,340,250
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	580.5			151,220,250
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	58.1	@	280,000	16,254,000
3 bed House	77.4	@	350,000	27,090,000
4 bed House	58.1	@	469,000	27,225,450
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	193.5			70,569,450
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential	1,935.0			826,670,700
<i>AH on-site cost analysis:</i>				
	909	£ psm (total GIA sqm)	£MV less £GDV	181,464,300
			93,780	£ per unit (total units)
Grant	1,935	@	0	-
Total GDV				826,670,700

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge B
 Title: Edge of Cambridge B- 1,935 units
 Notes: Greenfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(710,000)
Statutory Planning Fees (Residential)				(235,824)
CIL		123,414 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
	Biodiversity offset	42,545	£ per gross hectare	(4,116,229)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	1,935 units @	0 per unit	(4,116,229)
	S106 analysis:	0.50% % of GDV	2,127 £ per unit (total units)	-
AH Commuted Sum		199,653 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		-
Construction Costs -				
Site Clearance and Demolition		119.53 acres @	0 £ per acre (if brownfield)	-
Infrastructure costs -	Year 1	20,000	build costs	(38,700,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	119.53 acres @	20,000 per acre	(38,700,000)
	Infra. Costs analysis:	4.68% % of GDV	20,000 £ per unit (total units)	-
1 bed House		- sqm @	1,277 psm	-
2 bed House		43,538 sqm @	1,277 psm	(55,597,388)
3 bed House		75,078 sqm @	1,277 psm	(95,874,606)
4 bed House		81,038 sqm @	1,277 psm	(103,485,271)
5 bed House		- sqm @	1,277 psm	-
1 bed Flat		- sqm @	psm	-
2 bed Flat	199,653	- sqm @	psm	-
External works		254,957,264 @	15.0% 19,764 £per unit	(38,243,590)
Category 2 Housing		0% of All units	1,935 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	1,935 units @ 10,307 £ per dwelling	-
Water efficiency			1,935 units @ 9 £ per dwelling	(17,415)
Contingency		331,918,269 @	5.0%	(16,595,913)
Professional Fees		331,918,269 @	10.0%	(33,191,827)
Disposal Costs -				
Marketing and Promotion		604,881,000 OMS @	1.50%	(9,073,215)
Residential Sales Agent Costs		604,881,000 OMS @	1.00%	(6,048,810)
Residential Sales Legal Costs		604,881,000 OMS @	0.50%	(3,024,405)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(948,595)
Developers Profit -				
Margin on AH		221,789,700	6.00% on AH values	(13,307,382)
Profit on GDV		604,881,000	20.00%	(120,976,200)
		405,863,087	29.81% on costs	(120,976,200)
		826,670,700	16.24% blended	(134,283,582)
TOTAL COSTS				(540,146,669)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge B
 Title: Edge of Cambridge B- 1,935 units
 Notes: Greenfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				286,524,031
SDLT	286,524,031 @		5.0% (slabbed)	(14,315,702)
Acquisition Agent fees	286,524,031 @		1.0%	(2,865,240)
Acquisition Legal fees	286,524,031 @		0.5%	(1,432,620)
Interest on Land	286,524,031 @		7.50%	(21,489,302)
Residual Land Value				246,421,167
<i>RLV analysis:</i>	127,349 £ per plot	5,093,978 £ per ha	2,061,504 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		40.0 dph		
Site Area (Resi)		48.38 ha	119.53 acres	
<i>Density analysis:</i>		4,127 sqm/ha	17,978 sqft/ac	
Threshold Land Value	12,355 £ per plot	494,200 £ per ha	200,000 £ per acre	23,906,925
Gross to net land area	50%			

BALANCE				
Surplus/(Deficit)		4,599,778 £ per ha	1,861,504 £ per acre	222,514,242

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **Edge B**
 Title: **Edge of Cambridge B- 1,935 units**
 Notes: **Greenfield**

SENSITIVITY ANALYSIS										
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	222,514,242	-	261,717,015	251,918,130	242,119,245	232,318,228	222,514,242	212,710,256	202,906,271	
	7,500	247,155,501	237,365,414	227,575,326	217,785,239	207,995,152	198,205,064	188,414,977		
	15,000	232,315,986	222,524,803	212,733,285	202,939,508	193,145,731	183,351,954	173,558,177		
	22,500	217,186,609	207,378,265	197,569,920	187,761,576	177,950,992	168,135,508	158,320,024		
	30,000	201,752,383	191,919,152	182,082,390	172,238,538	162,393,552	152,537,905	142,678,950		
	37,500	186,007,588	176,132,023	166,249,232	156,355,855	146,455,386	136,540,668	126,611,858		
	45,000	169,936,165	160,003,671	150,056,187	140,095,410	130,117,806	120,119,813	110,097,840		
	52,500	153,522,927	143,515,550	133,488,577	123,438,413	113,361,437	103,253,993	93,111,405		
	60,000	136,755,434	126,656,304	116,527,517	106,365,386	96,166,197	85,918,747	75,621,294		
	67,500	119,619,367	109,406,955	99,153,424	88,856,134	78,502,639	68,088,718	57,599,286		
	75,000	102,090,973	91,747,820	81,345,995	70,885,323	60,351,990	49,731,762	39,009,073		
	82,500	84,158,736	73,658,487	63,084,178	52,428,159	41,677,615	30,816,420	19,817,200		
	90,000	65,802,262	55,117,790	44,342,308	33,460,105	22,455,211	11,306,469	(15,579)		
	97,500	47,000,403	36,103,791	25,093,222	13,952,568	2,650,310	(8,833,753)	(20,536,827)		
	105,000	27,731,232	16,593,745	5,313,047	(6,132,052)	(17,773,153)	(30,580,958)	(44,709,586)		
	112,500	7,972,017	(3,443,575)	(15,030,103)	(27,299,591)	(41,292,822)	(55,619,027)	(70,332,148)		
120,000	(12,306,665)	(24,055,427)	(37,938,885)	(52,110,189)	(66,625,348)	(81,515,990)	(96,853,862)			
127,500	(34,633,601)	(48,681,468)	(63,025,255)	(77,707,656)	(92,770,640)	(108,280,904)	(124,299,460)			
135,000	(59,514,387)	(74,024,032)	(88,865,542)	(104,089,765)	(119,761,915)	(135,911,482)	(152,539,595)			
142,500	(85,092,199)	(100,082,986)	(115,466,707)	(131,282,479)	(147,542,492)	(164,000,234)	(180,500,752)			
150,000	(111,364,898)	(126,892,084)	(142,837,666)	(159,185,146)	(176,000,873)	(192,500,234)	(209,000,752)			
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	222,514,242	£0	261,717,015	251,918,130	242,119,245	232,318,228	222,514,242	212,710,256	202,906,271	
	£100	245,487,662	236,719,904	227,951,931	219,183,958	210,412,325	201,636,369	192,860,412		
	£200	228,904,210	221,204,541	213,500,572	205,790,915	198,080,774	190,366,085	182,638,423		
	£300	211,962,936	205,358,290	198,748,417	192,132,124	185,509,026	178,875,798	172,235,656		
	£400	194,642,393	189,167,226	183,685,919	178,195,123	172,690,800	167,175,925	161,647,355		
	£500	176,923,296	172,619,242	168,298,029	163,965,276	159,617,859	155,252,675	150,866,648		
	£600	158,790,868	155,690,824	152,574,588	149,436,417	146,277,861	143,096,010	139,886,478		
	£700	140,224,370	138,369,153	136,491,611	134,588,718	132,657,472	130,694,895	128,698,033		
	£800	121,202,290	120,635,577	120,039,896	119,412,282	118,749,791	118,044,238	117,292,765		
	£900	101,702,330	102,469,624	103,200,779	103,892,892	104,537,129	105,130,583	105,664,334		
	£1,000	81,699,143	83,850,068	85,954,901	88,013,038	90,008,383	91,942,820	93,804,830		
	£1,100	61,162,071	64,752,657	68,282,192	71,753,738	75,150,646	78,469,833	81,700,889		
	£1,200	40,071,887	45,149,116	50,161,844	55,098,627	59,947,140	64,701,268	69,344,722		
	£1,300	18,384,832	25,020,366	31,569,250	38,025,713	44,380,466	50,616,858	56,725,662		
	£1,400	(3,923,510)	4,326,882	12,476,822	20,515,577	28,432,582	36,207,931	43,832,176		
	£1,500	(27,380,477)	(16,955,076)	(7,136,373)	2,547,237	12,084,781	21,458,103	30,649,580		
£1,600	(54,905,437)	(41,299,583)	(27,861,535)	(15,907,208)	(4,682,331)	6,350,381	17,168,441			
£1,700	(83,289,636)	(67,547,903)	(51,997,167)	(36,659,809)	(21,888,855)	(9,132,853)	3,373,542			
£1,800	(112,536,094)	(94,579,580)	(76,846,747)	(59,345,071)	(42,114,875)	(25,191,120)	(10,750,900)			
£1,900	(142,682,195)	(122,417,886)	(102,405,579)	(82,669,402)	(63,234,818)	(44,138,991)	(25,436,919)			
£2,000	(173,589,266)	(151,049,648)	(128,708,710)	(106,644,363)	(84,925,797)	(63,592,721)	(42,684,856)			
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	222,514,242	80%	320,816,481	310,786,515	300,756,494	290,726,474	280,696,453	270,661,035	260,623,906	
		85%	306,044,907	296,075,915	286,104,682	276,129,627	266,154,571	256,179,516	246,200,579	
		90%	291,273,333	281,359,343	271,445,354	261,531,364	251,612,690	241,692,600	231,772,510	
		95%	276,499,436	266,642,771	256,783,783	246,924,796	237,065,808	227,205,684	217,340,560	
		100%	261,717,015	251,918,130	242,119,245	232,318,228	222,514,242	212,710,256	202,906,271	
		105%	246,934,594	237,190,751	227,446,908	217,703,065	207,959,222	198,213,692	188,464,709	
Change in build costs	222,514,242	110%	232,141,632	222,456,941	212,772,249	203,085,771	193,396,971	183,708,170	174,019,370	
		115%	217,347,341	207,717,736	198,088,132	188,458,527	178,828,923	169,199,318	159,567,203	
		120%	202,542,967	192,971,576	183,400,186	173,828,795	164,254,979	154,680,461	145,105,943	
			AH - % on site 40%							
			20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	222,514,242	80%	154,728,633	151,626,897	148,525,160	145,422,301	142,313,846	139,205,391	136,091,794	
		85%	181,489,405	176,713,246	171,933,189	167,153,131	162,372,755	157,586,263	152,799,771	
		90%	208,238,940	201,787,280	195,335,621	188,879,618	182,422,328	175,965,039	169,503,595	
		95%	234,984,251	226,856,164	218,728,076	210,599,989	202,471,901	194,338,785	186,204,933	
		100%	261,717,015	251,918,130	242,119,245	232,318,228	222,514,242	212,710,256	202,906,271	
		105%	288,449,779	276,978,205	265,504,086	254,029,967	242,555,847	231,081,728	219,604,705	
		110%	315,174,465	302,030,212	288,885,959	275,741,706	262,597,453	249,450,178	236,300,800	
		115%	341,896,606	327,082,219	312,267,832	297,453,445	282,634,871	267,815,883	252,996,896	
Market units sale values	222,514,242	120%	368,618,746	352,134,225	335,647,380	319,158,783	302,670,185	286,181,588	269,692,991	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **Edge B**
 Title: **Edge of Cambridge B- 1,935 units**
 Notes: **Greenfield**

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	222,514,242								
	80,000	276,061,170	266,262,285	256,463,400	246,662,383	236,858,397	227,054,411	217,250,426	
	100,000	273,670,477	263,871,592	254,072,707	244,271,690	234,467,705	224,663,719	214,859,733	
	120,000	271,279,785	261,480,900	251,682,015	241,880,998	232,077,012	222,273,026	212,469,041	
	140,000	268,889,092	259,090,207	249,291,322	239,490,305	229,686,320	219,882,334	210,078,348	
	160,000	266,498,400	256,699,515	246,900,630	237,099,613	227,295,627	217,491,641	207,687,656	
	180,000	264,107,707	254,308,822	244,509,937	234,708,920	224,904,935	215,100,949	205,296,963	
TLV (per acre)	200,000	261,717,015	251,918,130	242,119,245	232,318,228	222,514,242	212,710,256	202,906,271	
	220,000	259,326,322	249,527,437	239,728,552	229,927,535	220,123,550	210,319,564	200,515,578	
	240,000	256,935,630	247,136,745	237,337,860	227,536,843	217,732,857	207,928,871	198,124,886	
	AH - % on site 40%								
	Balance (RLV - TLV)	222,514,242							
		10	178,937,635	169,145,705	159,353,776	149,561,846	139,769,917	129,977,987	120,186,058
		15	215,748,374	205,953,509	196,158,645	186,363,781	176,568,916	166,774,052	156,978,739
20		234,141,109	224,346,245	214,551,381	204,753,380	194,954,495	185,155,610	175,356,725	
25		245,176,751	235,377,942	225,579,057	215,780,172	205,981,287	196,182,201	186,378,215	
30		252,528,022	242,729,137	232,930,252	223,131,366	213,331,989	203,528,003	193,724,018	
35		257,778,875	247,979,990	238,181,105	228,382,219	218,578,991	208,775,005	198,971,020	
Density dph	40.0	261,717,015	251,918,130	242,119,245	232,318,228	222,514,242	212,710,256	202,906,271	
	45	264,780,013	254,981,127	245,182,242	235,378,979	225,574,993	215,771,008	205,967,022	
	50	267,230,411	257,431,526	247,631,565	237,827,580	228,023,594	218,219,608	208,414,296	
	55	269,235,282	259,436,397	249,634,966	239,830,980	230,026,995	220,223,009	210,416,364	
	60	270,906,008	261,107,123	251,304,466	241,500,481	231,696,495	221,892,510	212,084,754	
	AH - % on site 40%								
	Balance (RLV - TLV)	222,514,242							
15%		296,396,859	284,430,483	272,464,108	260,495,601	248,524,125	236,552,649	224,581,173	
16%		289,460,890	277,928,013	266,395,135	254,860,126	243,322,148	231,784,171	220,246,193	
17%		282,524,921	271,425,542	260,326,163	249,224,652	238,120,172	227,015,692	215,911,212	
18%		275,588,953	264,923,071	254,257,190	243,589,177	232,918,195	222,247,214	211,576,232	
19%		268,652,984	258,420,600	248,188,217	237,953,702	227,716,219	217,478,735	207,241,251	
20%		261,717,015	251,918,130	242,119,245	232,318,228	222,514,242	212,710,256	202,906,271	
21%		254,781,046	245,415,659	236,050,272	226,682,753	217,312,265	207,941,778	198,571,290	
22%		247,845,077	238,913,188	229,981,299	221,047,278	212,110,289	203,173,299	194,236,310	
23%		240,909,109	232,410,717	223,912,326	215,411,804	206,908,312	198,404,821	189,901,329	
24%		233,973,140	225,908,247	217,843,354	209,776,329	201,706,336	193,636,342	185,566,349	
25%	227,037,171	219,405,776	211,774,381	204,140,854	196,504,359	188,867,864	181,231,368		
Profit % on GDV	20.00%								
	15%	296,396,859	284,430,483	272,464,108	260,495,601	248,524,125	236,552,649	224,581,173	
	16%	289,460,890	277,928,013	266,395,135	254,860,126	243,322,148	231,784,171	220,246,193	
	17%	282,524,921	271,425,542	260,326,163	249,224,652	238,120,172	227,015,692	215,911,212	
	18%	275,588,953	264,923,071	254,257,190	243,589,177	232,918,195	222,247,214	211,576,232	
	19%	268,652,984	258,420,600	248,188,217	237,953,702	227,716,219	217,478,735	207,241,251	
	20%	261,717,015	251,918,130	242,119,245	232,318,228	222,514,242	212,710,256	202,906,271	
	21%	254,781,046	245,415,659	236,050,272	226,682,753	217,312,265	207,941,778	198,571,290	
	22%	247,845,077	238,913,188	229,981,299	221,047,278	212,110,289	203,173,299	194,236,310	
	23%	240,909,109	232,410,717	223,912,326	215,411,804	206,908,312	198,404,821	189,901,329	
	24%	233,973,140	225,908,247	217,843,354	209,776,329	201,706,336	193,636,342	185,566,349	
25%	227,037,171	219,405,776	211,774,381	204,140,854	196,504,359	188,867,864	181,231,368		

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge C
 Title: Edge of Cambridge C - 500 units
 Notes: Greenfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme			500 Units						
AH Policy requirement (% Target)			40%						
AH tenure split %	Affordable Rent:		75%						
	Shared ownership		25%						
	First Homes		0%		0.0% % of total (>10% for HWP (Feb 2017))				
Open Market Sale (OMS) housing			60%						
			100%						
CIL Rate (£ psm)			0.00 £ psm						
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	90.0	30.00%	60.0	30%	150.0			
3 bed House	40.00%	120.0	40.00%	80.0	40%	200.0			
4 bed House	30.00%	90.0	30.00%	60.0	30%	150.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	300.0	100.0%	200.0	100%	500.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %			Gross (GIA) per unit (sqm) (sqft)			
1 bed House		0				0.0 0			
2 bed House	75	807				75.0 807			
3 bed House	97	1,044				97.0 1,044			
4 bed House	150	1,615				150.0 1,615			
5 bed House		0				0.0 0			
1 bed Flat		0	85.0%			0.0 0			
2 bed Flat		0	85.0%			0.0 0			
AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %			Gross (GIA) per unit (sqm) (sqft)			
1 bed House		0				0.0 0			
2 bed House	75	807				75.0 807			
3 bed House	97	1,044				97.0 1,044			
4 bed House	124	1,335				124.0 1,335			
5 bed House		0				0.0 0			
1 bed Flat		0	85.0%			0.0 0			
2 bed Flat		0	85.0%			0.0 0			
Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm) (sqft)				
1 bed House	0	0	0	0	0 0				
2 bed House	6,750	72,656	4,500	48,438	11,250 121,094				
3 bed House	11,640	125,292	7,760	83,528	19,400 208,820				
4 bed House	13,500	145,313	7,440	80,083	20,940 225,396				
5 bed House	0	0	0	0	0 0				
1 bed Flat	0	0	0	0	0 0				
2 bed Flat	0	0	0	0	0 0				
	31,890	343,261	19,700	212,049	51,590 555,310				
AH % by floor area:		38.19% AH % by floor area due to mix							
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House		#DIV/0!	#DIV/0!	0					
2 bed House	400,000	5,333	495	60,000,000					
3 bed House	500,000	5,155	479	100,000,000					
4 bed House	670,000	4,467	415	100,500,000					
5 bed House		#DIV/0!	#DIV/0!	0					
1 bed Flat		#DIV/0!	#DIV/0!	0					
2 bed Flat		#DIV/0!	#DIV/0!	0					
				260,500,000					
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed House	200,000	2,667	50%	280,000	3,733	70%	0	0	70%
3 bed House	250,000	2,577	50%	350,000	3,608	70%	0	0	70%
4 bed House	335,000	2,702	50%	469,000	3,782	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge C
 Title: Edge of Cambridge C - 500 units
 Notes: Greenfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	90.0	@	400,000	36,000,000
3 bed House	120.0	@	500,000	60,000,000
4 bed House	90.0	@	670,000	60,300,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	300.0			156,300,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	45.0	@	200,000	9,000,000
3 bed House	60.0	@	250,000	15,000,000
4 bed House	45.0	@	335,000	15,075,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	150.0			39,075,000
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	15.0	@	280,000	4,200,000
3 bed House	20.0	@	350,000	7,000,000
4 bed House	15.0	@	469,000	7,035,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	50.0			18,235,000
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential	500.0			213,610,000
<i>AH on-site cost analysis:</i>				
	909	£ psm (total GIA sqm)	£MV less £GDV	46,890,000
			93,780	£ per unit (total units)
Grant	500	@	0	-
Total GDV				213,610,000

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge C
 Title: Edge of Cambridge C - 500 units
 Notes: Greenfield

DEVELOPMENT COSTS						
Initial Payments -						
Planning Application Professional Fees, Surveys and reports						(210,000)
Statutory Planning Fees (Residential)						(70,799)
CIL						-
CIL analysis:		31,890 sqm	0.00% £ psm	0.00% £ psm	0 £ per unit (total units)	-
Site Specific S106 Contributions		Year 1	0	£ per dwelling		-
		Year 2	0			-
		Year 3	0			-
		Year 4	0			-
		Year 5	0			-
Biodiversity offset		42,545	£ per gross hectare			(759,732)
		Year 7				-
		Year 8				-
		Year 9				-
		Year 10				-
total		500 units @				(759,732)
S106 analysis:		0.36% % of GDV		1,519 £ per unit (total units)		-
AH Commuted Sum		51,590 sqm (total)		£ psm		-
Comm. Sum analysis:		0.00% % of GDV				-
Construction Costs -						
Site Clearance and Demolition						-
		30.89 acres @		0 £ per acre (if brownfield)		-
Infrastructure costs -						
Year 1		20,000	build costs			(10,000,000)
Year 2						-
Year 3						-
Year 4						-
Year 5						-
Year 6						-
Year 7						-
Year 8						-
Year 9						-
Year 10						-
total		30.89 acres @				(10,000,000)
Infra. Costs analysis:		4.68% % of GDV		20,000 £ per unit (total units)		-
1 bed House		- sqm @		1,277 psm		-
2 bed House		11,250 sqm @		1,277 psm		(14,366,250)
3 bed House		19,400 sqm @		1,277 psm		(24,773,800)
4 bed House		20,940 sqm @		1,277 psm		(26,740,380)
5 bed House		- sqm @		1,277 psm		-
1 bed Flat		- sqm @		psm		-
2 bed Flat		51,590	- sqm @	psm		-
External works						(9,882,065)
		65,880,430 @		15.0% 19,764 £per unit		
Category 2 Housing		0% of All units	500 units @	521 £ per dwelling		-
Category 3 Housing		0% of All units	500 units @	10,307 £ per dwelling		-
Water efficiency			500 units @	9 £ per dwelling		(4,500)
Contingency		85,766,995 @		5.0%		(4,288,350)
Professional Fees		85,766,995 @		10.0%		(8,576,699)
Disposal Costs -						
Marketing and Promotion		156,300,000 OMS @		1.50%		(2,344,500)
Residential Sales Agent Costs		156,300,000 OMS @		1.00%		(1,563,000)
Residential Sales Legal Costs		156,300,000 OMS @		0.50%		(781,500)
Interest (on Development Costs) -						(413,141)
		7.50% APR		0.604% pcm		
Developers Profit -						
Margin on AH		57,310,000		6.00% on AH values		(3,438,600)
Profit on GDV		156,300,000		20.00%		(31,260,000)
		104,774,716		29.84% on costs	(31,260,000)	
		213,610,000		16.24% blended	(34,698,600)	
TOTAL COSTS						(139,473,316)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge C
 Title: Edge of Cambridge C - 500 units
 Notes: Greenfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				74,136,684
SDLT	74,136,684 @		5.0% (slabbed)	(3,696,334)
Acquisition Agent fees	74,136,684 @		1.0%	(741,367)
Acquisition Legal fees	74,136,684 @		0.5%	(370,683)
Interest on Land	74,136,684 @		7.50%	(5,560,251)
Residual Land Value				63,768,049
<i>RLV analysis:</i>	127,536 £ per plot	5,101,444 £ per ha	2,064,526 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		40.0 dph		
Site Area (Resi)		12.50 ha	30.89 acres	
<i>Density analysis:</i>		4,127 sqm/ha	17,978 sqft/ac	
Threshold Land Value	8,825 £ per plot	353,000 £ per ha	142,857 £ per acre	4,412,500
Gross to net land area	70%			

BALANCE				
Surplus/(Deficit)		4,748,444 £ per ha	1,921,669 £ per acre	59,355,549

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge C
 Title: Edge of Cambridge C - 500 units
 Notes: Greenfield

SENSITIVITY ANALYSIS										
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	59,355,549	-	69,423,283	66,906,349	64,389,416	61,872,482	59,355,549	56,836,521	54,316,487	
		7,500	65,688,190	63,175,845	60,663,499	58,151,154	55,638,809	53,124,823	50,610,453	
		15,000	61,918,559	59,408,631	56,898,703	54,388,775	51,878,214	49,367,350	46,856,486	
		22,500	58,111,700	55,602,158	53,092,616	50,583,074	48,073,532	45,563,990	43,054,448	
		30,000	54,265,787	51,755,356	49,244,925	46,734,494	44,224,064	41,713,633	39,202,505	
		37,500	50,382,931	47,869,374	45,355,817	42,842,260	40,328,703	37,814,806	35,298,839	
		45,000	46,460,022	43,943,169	41,424,222	38,905,274	36,386,326	33,865,816	31,343,315	
		52,500	42,495,985	39,973,485	37,449,048	34,922,418	32,395,788	29,866,067	27,334,728	
		60,000	38,492,140	35,960,801	33,429,187	30,892,554	28,355,921	25,814,359	23,271,737	
		67,500	34,447,419	31,904,906	29,362,394	26,814,523	24,265,515	21,709,468	19,149,947	
		75,000	30,357,309	27,804,685	25,248,638	22,687,144	20,122,122	17,550,149	14,970,995	
		82,500	26,224,342	23,659,000	21,087,027	18,509,216	15,925,455	13,333,985	10,733,035	
		90,000	22,047,437	19,466,595	16,876,373	14,279,514	11,674,252	9,058,806	6,431,381	
		97,500	17,825,451	15,225,043	12,615,468	9,996,793	7,367,230	4,726,106	2,071,610	
		105,000	13,556,685	10,934,781	8,303,080	5,660,914	3,006,481	37,960	(2,346,482)	
		112,500	9,238,929	6,595,723	3,941,352	1,274,004	(1,408,148)	(4,106,946)	(7,220,747)	
	120,000	4,876,223	2,210,048	(469,814)	(3,165,199)	(6,118,227)	(9,295,241)	(12,502,419)		
	127,500	468,519	(2,223,451)	(5,017,887)	(8,188,018)	(11,381,374)	(14,602,693)	(17,856,114)		
	135,000	(3,985,371)	(7,081,072)	(10,266,490)	(13,475,658)	(16,710,856)	(19,980,178)	(23,281,172)		
	142,500	(9,155,289)	(12,352,623)	(15,575,920)	(18,827,317)	(22,107,947)	(25,419,462)	(28,772,282)		
	150,000	(14,448,897)	(17,684,083)	(20,947,331)	(24,239,330)	(27,561,468)	(30,919,008)	(34,331,044)		
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	59,355,549	£0	69,423,283	66,906,349	64,389,416	61,872,482	59,355,549	56,836,521	54,316,487	
		£100	65,262,442	63,011,045	60,759,647	58,508,250	56,253,523	53,998,533	51,743,466	
		£200	61,056,738	59,075,034	57,093,330	55,107,586	53,121,773	51,135,027	49,144,578	
		£300	56,805,342	55,097,579	53,386,323	51,673,907	49,960,575	48,242,984	46,524,893	
		£400	52,507,080	51,075,989	49,641,282	48,206,575	46,766,509	45,326,060	43,879,572	
		£500	48,160,755	47,009,868	45,857,272	44,701,386	43,542,457	42,378,921	41,212,462	
		£600	43,765,146	42,899,255	42,033,264	41,160,527	40,285,773	39,405,369	38,519,032	
		£700	39,317,805	38,743,010	38,165,828	37,583,435	36,995,369	36,402,430	35,803,044	
		£800	34,818,886	34,539,972	34,256,333	33,968,583	33,672,621	33,369,908	33,059,445	
		£900	30,267,208	30,288,959	30,303,905	30,313,351	30,315,730	30,309,061	30,292,361	
		£1,000	25,661,468	25,988,766	26,307,447	26,619,178	26,922,405	27,215,589	27,497,203	
		£1,100	21,000,337	21,638,167	22,265,841	22,885,052	23,494,262	24,091,945	24,678,587	
		£1,200	16,282,464	17,235,762	18,177,946	19,109,943	20,030,378	20,937,741	21,828,599	
		£1,300	11,506,473	12,780,432	14,042,604	15,292,800	16,529,101	17,749,253	18,952,233	
		£1,400	6,672,091	8,271,207	9,858,550	11,431,491	12,988,547	14,528,245	16,049,122	
		£1,500	1,781,310	3,710,173	5,625,500	7,525,805	9,409,611	11,274,330	13,115,427	
	£1,600	(3,167,268)	(902,828)	1,346,248	3,578,488	5,792,432	7,986,157	10,152,942		
	£1,700	(8,789,286)	(5,759,080)	(2,980,392)	(410,404)	2,139,179	4,662,375	7,161,596		
	£1,800	(14,682,442)	(11,248,469)	(7,836,449)	(4,448,462)	(1,554,314)	1,307,774	4,139,080		
	£1,900	(20,646,208)	(16,801,747)	(12,981,505)	(9,188,821)	(5,429,170)	(2,080,392)	1,090,242		
	£2,000	(26,674,180)	(22,420,123)	(18,184,505)	(13,982,004)	(9,812,443)	(5,682,758)	(1,988,638)		
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	59,355,549	80%	84,736,699	82,159,695	79,582,692	77,004,331	74,423,761	71,843,190	69,262,620	
		85%	80,911,696	78,348,935	75,786,175	73,223,414	70,660,078	68,093,734	65,527,389	
		90%	77,083,132	74,537,676	71,989,657	69,441,138	66,892,620	64,344,102	61,792,159	
		95%	73,253,207	70,722,013	68,190,819	65,658,863	63,124,587	60,590,311	58,056,035	
	Change in build costs	100%	69,423,283	66,906,349	64,389,416	61,872,482	59,355,549	56,836,521	54,316,487	
			105%	65,588,207	63,088,118	60,588,013	58,085,340	55,582,667	53,079,994	50,576,939
			110%	61,752,852	59,267,044	56,781,237	54,295,429	51,809,621	49,321,374	46,832,962
			115%	57,913,718	55,444,282	52,974,444	50,502,917	48,031,390	45,559,863	43,088,336
		120%	54,072,421	51,617,288	49,162,154	46,707,021	44,251,888	41,795,913	39,338,667	
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	59,355,549	80%	41,750,887	40,970,877	40,188,824	39,406,771	38,621,880	37,836,194	37,048,121	
		85%	48,674,100	47,459,474	46,243,645	45,025,788	43,807,931	42,587,928	41,366,511	
		90%	55,594,094	53,944,066	52,294,038	50,644,010	48,991,412	47,338,157	45,684,901	
		95%	62,508,828	60,426,629	58,343,670	56,258,575	54,173,480	52,088,386	50,000,717	
	Market units sale values	100%	69,423,283	66,906,349	64,389,416	61,872,482	59,355,549	56,836,521	54,316,487	
			105%	76,332,707	73,383,934	70,435,162	67,486,389	64,535,479	61,583,868	58,632,257
			110%	83,242,131	79,861,519	76,480,778	73,097,590	69,714,403	66,331,215	62,948,028
			115%	90,151,555	86,337,621	82,522,856	78,708,092	74,893,327	71,078,562	67,263,234
		120%	97,057,618	92,811,276	88,564,935	84,318,593	80,072,251	75,825,910	71,577,079	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge C
 Title: Edge of Cambridge C - 500 units
 Notes: Greenfield

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	59,355,549								
	80,000	71,364,783	68,847,849	66,330,916	63,813,982	61,297,049	58,778,021	56,257,987	
	100,000	70,747,033	68,230,099	65,713,166	63,196,232	60,679,299	58,160,271	55,640,237	
	120,000	70,129,283	67,612,349	65,095,416	62,578,482	60,061,549	57,542,521	55,022,487	
	TLV (per acre)	142,857	69,423,287	66,906,354	64,389,420	61,872,486	59,355,553	56,836,525	54,316,492
		160,000	68,893,783	66,376,849	63,859,916	61,342,982	58,826,049	56,307,021	53,786,987
		180,000	68,276,033	65,759,099	63,242,166	60,725,232	58,208,299	55,689,271	53,169,237
200,000		67,658,283	65,141,349	62,624,416	60,107,482	57,590,549	55,071,521	52,551,487	
220,000		67,040,533	64,523,599	62,006,666	59,489,732	56,972,799	54,453,771	51,933,737	
240,000	66,422,783	63,905,849	61,388,916	58,871,982	56,355,049	53,836,021	51,315,987		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	59,355,549								
	10	54,159,454	51,645,084	49,130,715	46,616,345	44,101,975	41,585,703	39,068,769	
	15	60,943,502	58,429,132	55,914,763	53,398,642	50,881,708	48,364,775	45,847,841	
	20	64,335,526	61,821,156	59,305,112	56,788,178	54,271,244	51,754,311	49,235,565	
	Density dph	25	66,370,741	63,855,767	61,338,833	58,821,900	56,304,966	53,787,968	51,267,934
		30	67,727,550	65,211,581	62,694,648	60,177,714	57,660,780	55,142,880	52,622,847
		35	68,696,700	66,180,020	63,663,086	61,146,153	58,629,219	56,110,675	53,590,641
		40	69,423,283	66,906,349	64,389,416	61,872,482	59,355,549	56,836,521	54,316,487
		45	69,988,205	67,471,272	64,954,338	62,437,405	59,920,471	57,401,068	54,881,034
	50	70,440,144	67,923,210	65,406,276	62,889,343	60,372,409	57,852,705	55,332,672	
	55	70,809,911	68,292,978	65,776,044	63,259,110	60,742,177	58,222,227	55,702,193	
60	71,118,051	68,601,117	66,084,184	63,567,250	61,050,195	58,530,161	56,010,128		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	59,355,549								
	15%	78,384,483	75,307,474	72,230,466	69,153,457	66,076,449	62,997,346	59,917,237	
	16%	76,592,243	73,627,249	70,662,256	67,697,262	64,732,269	61,765,181	58,797,087	
	17%	74,800,003	71,947,024	69,094,046	66,241,067	63,388,089	60,533,016	57,676,937	
	Profit % on GDV	18%	73,007,763	70,266,799	67,525,836	64,784,872	62,043,909	59,300,851	56,556,787
		19%	71,215,523	68,586,574	65,957,626	63,328,677	60,699,729	58,068,686	55,436,637
		20%	69,423,283	66,906,349	64,389,416	61,872,482	59,355,549	56,836,521	54,316,487
		21%	67,631,043	65,226,124	62,821,206	60,416,287	58,011,369	55,604,356	53,196,337
		22%	65,838,803	63,545,899	61,252,996	58,960,092	56,667,189	54,372,191	52,076,187
	23%	64,046,563	61,865,674	59,684,786	57,503,897	55,323,009	53,140,026	50,956,037	
	24%	62,254,323	60,185,449	58,116,576	56,047,702	53,978,829	51,907,861	49,835,887	
25%	60,462,083	58,505,224	56,548,366	54,591,507	52,634,649	50,675,696	48,715,737		

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **Edge D**
 Title: **Edge of Cambridge D - 3,870 units**
 Notes: **Brownfield**

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme	3,870 Units								
AH Policy requirement (% Target)	40%								
AH tenure split %	Affordable Rent: 75% Shared ownership: 25% First Homes: 0%								
Open Market Sale (OMS) housing	60%								
	100%								
CIL Rate (£ psm)	0.00 £ psm								
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	696.6	30.00%	464.4	30%	1,161.0			
3 bed House	40.00%	928.8	40.00%	619.2	40%	1,548.0			
4 bed House	30.00%	696.6	30.00%	464.4	30%	1,161.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	2,322.0	100.0%	1,548.0	100%	3,870.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit					
1 bed House	0	0		0.0	0	0			
2 bed House	75	807		75.0	807	807			
3 bed House	97	1,044		97.0	1,044	1,044			
4 bed House	150	1,615		150.0	1,615	1,615			
5 bed House	0	0		0.0	0	0			
1 bed Flat	0	0	85.0%	0.0	0	0			
2 bed Flat	0	0	85.0%	0.0	0	0			
AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit					
1 bed House	0	0		0.0	0	0			
2 bed House	75	807		75.0	807	807			
3 bed House	97	1,044		97.0	1,044	1,044			
4 bed House	124	1,335		124.0	1,335	1,335			
5 bed House	0	0		0.0	0	0			
1 bed Flat	0	0	85.0%	0.0	0	0			
2 bed Flat	0	0	85.0%	0.0	0	0			
Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units)				
1 bed House	0	0	0	0	0	0	0	0	0
2 bed House	52,245	562,360	34,830	374,907	87,075	937,267	937,267	937,267	937,267
3 bed House	90,094	969,759	60,062	646,506	150,156	1,616,266	1,616,266	1,616,266	1,616,266
4 bed House	104,490	1,124,721	57,586	619,846	162,076	1,744,567	1,744,567	1,744,567	1,744,567
5 bed House	0	0	0	0	0	0	0	0	0
1 bed Flat	0	0	0	0	0	0	0	0	0
2 bed Flat	0	0	0	0	0	0	0	0	0
	246,829	2,656,841	152,478	1,641,259	399,307	4,298,100	4,298,100	4,298,100	4,298,100
<i>AH % by floor area:</i>	<i>38.19% AH % by floor area due to mix</i>								
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House	0	#DIV/0!	#DIV/0!	0	0	0			
2 bed House	400,000	5,333	495	464,000,000	464,000,000	464,000,000			
3 bed House	500,000	5,155	479	774,000,000	774,000,000	774,000,000			
4 bed House	670,000	4,467	415	777,870,000	777,870,000	777,870,000			
5 bed House	0	#DIV/0!	#DIV/0!	0	0	0			
1 bed Flat	0	#DIV/0!	#DIV/0!	0	0	0			
2 bed Flat	0	#DIV/0!	#DIV/0!	0	0	0			
				2,016,270,000	2,016,270,000	2,016,270,000			
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV	Shared ownership £	£psm	% of MV	First Homes £	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed House	200,000	2,667	50%	280,000	3,733	70%	0	#DIV/0!	70%
3 bed House	250,000	2,577	50%	350,000	3,608	70%	0	#DIV/0!	70%
4 bed House	335,000	2,702	50%	469,000	3,782	70%	0	#DIV/0!	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%

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Scheme Ref: Edge D
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 Notes: Brownfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	696.6	@	400,000	278,640,000
3 bed House	928.8	@	500,000	464,400,000
4 bed House	696.6	@	670,000	466,722,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	2,322.0			1,209,762,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	348.3	@	200,000	69,660,000
3 bed House	464.4	@	250,000	116,100,000
4 bed House	348.3	@	335,000	116,680,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	1,161.0			302,440,500
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	116.1	@	280,000	32,508,000
3 bed House	154.8	@	350,000	54,180,000
4 bed House	116.1	@	469,000	54,450,900
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	387.0			141,138,900
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential	3,870.0			1,653,341,400
<i>AH on-site cost analysis:</i>				
	909 £ psm (total GIA sqm)		£MV less £GDV	362,928,600
			93,780 £ per unit (total units)	
Grant	3,870	@	0	-
Total GDV				1,653,341,400

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge D
 Title: Edge of Cambridge D - 3,870 units
 Notes: Brownfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(1,380,000)
Statutory Planning Fees (Residential)				(458,349)
CIL		246,829 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
	Biodiversity offset	42,545	£ per gross hectare	(8,232,458)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	3,870 units @	0 per unit	(8,232,458)
	S106 analysis:	0.50% % of GDV	2,127 £ per unit (total units)	
AH Commuted Sum		399,307 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		
Construction Costs -				
Site Clearance and Demolition		239.07 acres @	110,000 £ per acre (if brownfield)	(26,297,618)
Infrastructure costs -	Year 1	15,000	build costs	(58,050,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	239.07 acres @	15,000 per acre	(58,050,000)
	Infra. Costs analysis:	3.51% % of GDV	15,000 £ per unit (total units)	
1 bed House		- sqm @	1,277 psm	-
2 bed House		87,075 sqm @	1,277 psm	(111,194,775)
3 bed House		150,156 sqm @	1,277 psm	(191,749,212)
4 bed House		162,076 sqm @	1,277 psm	(206,970,541)
5 bed House		- sqm @	1,277 psm	-
1 bed Flat		- sqm @	psm	-
2 bed Flat	399,307	- sqm @	psm	-
External works		509,914,528 @	15.0% 19,764 £per unit	(76,487,179)
Category 2 Housing		0% of All units	3,870 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	3,870 units @ 10,307 £ per dwelling	-
Water efficiency			3,870 units @ 9 £ per dwelling	(34,830)
Contingency		670,784,155 @	5.0%	(33,539,208)
Professional Fees		670,784,155 @	10.0%	(67,078,415)
Disposal Costs -				
Marketing and Promotion		1,209,762,000 OMS @	1.50%	(18,146,430)
Residential Sales Agent Costs		1,209,762,000 OMS @	1.00%	(12,097,620)
Residential Sales Legal Costs		1,209,762,000 OMS @	0.50%	(6,048,810)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(2,062,993)
Developers Profit -				
Margin on AH		443,579,400	6.00% on AH values	(26,614,764)
Profit on GDV		1,209,762,000	20.00%	(241,952,400)
		819,828,438	29.51% on costs (241,952,400)	
		1,653,341,400	16.24% blended (268,567,164)	
TOTAL COSTS				(1,088,395,602)

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RESIDUAL LAND VALUE				
Residual Land Value (gross)				564,945,798
SDLT	564,945,798 @		5.0% (slabbed)	(28,236,790)
Acquisition Agent fees	564,945,798 @		1.0%	(5,649,458)
Acquisition Legal fees	564,945,798 @		0.5%	(2,824,729)
Interest on Land	564,945,798 @		7.50%	(42,370,935)
Residual Land Value				485,863,887
<i>RLV analysis:</i>	125,546 £ per plot	5,021,849 £ per ha	2,032,314 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		40.0 dph		
Site Area (Resi)		96.75 ha	239.07 acres	
<i>Density analysis:</i>		4,127 sqm/ha	17,978 sqft/ac	
Threshold Land Value	59,304 £ per plot	2,372,160 £ per ha	960,000 £ per acre	229,506,480
Gross to net land area	50%			

BALANCE				
Surplus/(Deficit)		2,649,689 £ per ha	1,072,314 £ per acre	256,357,407

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Scheme Ref: Edge D
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SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	256,357,407	-	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464
	5,000	315,371,458	295,787,599	276,203,740	256,619,881	237,036,021	217,452,162	197,868,303	
	10,000	295,745,581	276,166,893	256,588,204	237,009,516	217,430,370	197,850,956	178,271,542	
	15,000	275,862,014	256,274,460	236,686,906	217,099,352	197,511,798	177,924,243	158,336,689	
	20,000	255,716,437	236,111,734	216,507,032	196,902,330	177,290,344	157,673,656	138,056,967	
	25,000	235,305,197	215,674,229	196,039,442	176,391,887	156,744,333	137,067,811	117,421,350	
	30,000	214,622,089	194,950,786	175,263,082	155,575,379	135,865,847	116,153,793	96,416,544	
	35,000	193,660,793	173,925,310	154,188,061	134,423,630	114,649,355	94,853,050	75,028,892	
	40,000	172,400,291	152,603,985	132,782,781	112,944,341	93,079,353	73,178,709	53,244,359	
	45,000	150,845,096	130,965,260	111,060,727	91,117,315	71,138,127	51,117,593	31,048,527	
	50,000	128,990,271	109,007,060	88,989,141	68,929,368	48,820,535	28,655,381	8,423,095	
	55,000	106,810,208	86,717,386	66,575,002	46,375,773	26,112,358	5,777,358	(14,651,452)	
	60,000	84,311,749	64,086,635	43,801,622	23,442,418	2,998,983	(17,531,657)	(38,185,720)	
65,000	61,478,225	41,101,441	20,649,418	114,640	(20,534,608)	(41,295,869)	(62,199,116)		
70,000	38,299,853	17,760,876	(2,883,495)	(23,626,771)	(44,503,843)	(65,525,295)	(86,721,687)		
75,000	14,767,617	(5,966,530)	(26,811,827)	(47,790,130)	(68,924,575)	(90,236,421)	(111,760,682)		
80,000	(9,128,564)	(30,075,413)	(51,150,695)	(72,391,087)	(93,813,090)	(115,453,982)	(137,352,390)		
85,000	(33,406,920)	(54,580,688)	(75,918,915)	(97,445,724)	(119,193,728)	(141,200,478)	(163,513,262)		
90,000	(58,067,335)	(79,502,096)	(101,128,304)	(122,973,811)	(145,083,400)	(167,491,914)	(190,268,619)		
95,000	(83,134,619)	(104,854,764)	(126,793,393)	(148,994,939)	(171,495,560)	(194,358,532)	(217,648,725)		
100,000	(108,618,998)	(130,648,436)	(152,930,942)	(175,523,731)	(198,463,638)	(221,824,774)	(248,320,382)		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	256,357,407	£0	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464
	£50	318,579,842	300,011,956	281,444,070	262,867,732	244,287,872	225,708,012	207,126,501	
	£100	302,240,162	284,718,060	267,182,518	249,646,573	232,110,627	214,564,707	197,012,795	
	£150	285,727,657	269,253,833	252,777,946	236,302,059	219,812,234	203,318,425	186,817,590	
	£200	269,028,756	253,629,418	238,230,080	222,817,512	207,398,198	191,970,685	176,529,307	
	£250	252,146,948	237,841,001	223,527,523	209,199,444	194,866,756	180,514,472	166,151,942	
	£300	235,079,638	221,884,282	208,668,027	195,448,281	182,206,147	168,956,070	155,681,375	
	£350	217,822,084	205,748,301	193,654,348	181,549,744	169,426,990	157,281,061	145,116,245	
	£400	200,369,454	189,432,755	178,482,421	167,507,569	156,517,411	145,502,543	134,455,463	
	£450	182,716,830	172,936,618	163,144,411	153,322,075	143,475,698	133,602,690	123,696,817	
	£500	164,859,200	156,255,292	147,634,056	138,989,195	130,306,098	121,590,898	112,837,660	
	£550	146,791,463	139,384,092	131,953,827	124,494,420	116,999,672	109,463,434	101,879,603	
	£600	128,508,232	122,318,248	116,099,373	109,845,601	103,550,786	97,208,828	90,813,678	
£650	110,004,375	105,052,902	100,066,265	95,038,733	89,964,212	84,836,659	79,650,077		
£700	91,275,167	87,583,107	83,849,991	80,069,733	76,236,296	72,339,702	68,368,833		
£750	72,314,079	69,903,826	67,445,956	64,934,445	62,358,071	59,709,124	56,984,757		
£800	53,115,936	52,009,927	50,849,481	49,625,445	48,326,736	46,951,858	45,488,045		
£850	33,675,050	33,896,187	34,055,800	34,139,659	34,143,593	34,064,503	33,874,460		
£900	13,985,632	15,557,288	17,060,062	18,475,724	19,804,730	21,035,194	22,149,897		
£950	(5,958,215)	(3,012,186)	(142,676)	2,629,194	5,306,163	7,866,934	10,303,438		
£1,000	(26,162,491)	(21,817,749)	(17,557,445)	(13,404,459)	(9,356,169)	(5,441,162)	(1,665,400)		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	256,357,407	80%	452,961,885	432,913,283	412,853,242	392,793,201	372,733,159	352,673,118	332,598,908
		85%	423,418,737	403,480,753	383,542,770	363,599,507	343,649,396	323,699,286	303,749,175
		90%	393,875,588	374,047,609	354,219,630	334,391,650	314,563,671	294,725,454	274,885,274
		95%	364,315,973	344,608,118	324,896,489	305,178,514	285,460,539	265,742,564	246,021,373
	Change in build costs	100%	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464
		105%	305,176,629	285,697,073	266,210,916	246,723,231	227,235,545	207,747,860	188,258,340
		110%	275,588,047	256,218,665	236,849,283	217,479,901	198,110,518	178,733,441	159,355,841
		115%	245,992,282	226,739,231	207,481,048	188,221,839	168,962,630	149,703,421	130,444,212
120%	216,377,905	197,235,123	178,092,341	158,949,559	139,806,777	120,663,996	101,516,670		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	256,357,407	80%	120,736,605	114,545,523	108,342,291	102,138,818	95,932,476	89,715,566	83,498,655
		85%	174,270,781	164,722,211	155,171,161	145,611,046	136,050,931	126,489,627	116,916,643
		90%	227,782,664	214,879,345	201,976,025	189,072,705	176,161,757	163,247,178	150,332,598
		95%	281,273,937	265,027,413	248,773,253	232,517,078	216,260,903	200,004,728	183,738,789
	Market units sale values	100%	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464
		105%	388,216,658	365,277,292	342,337,095	319,388,856	296,440,617	273,492,379	250,544,140
		110%	441,677,853	415,389,347	389,100,840	362,812,334	336,523,828	310,235,322	283,941,854
		115%	495,122,134	465,493,360	435,864,586	406,235,813	376,607,039	346,972,020	317,334,045
120%	548,566,415	515,597,373	482,628,332	449,657,819	416,680,624	383,703,430	350,726,236		

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Scheme Ref: Edge D
 Title: Edge of Cambridge D - 3,870 units
 Notes: Brownfield

		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	256,357,407									
	600,000	420,816,060	401,218,290	381,620,519	362,022,749	342,422,337	322,814,366	303,206,394		
	700,000	396,908,135	377,311,365	357,713,594	338,115,824	318,515,412	298,907,441	279,299,469		
	800,000	373,002,210	353,404,440	333,806,669	314,208,899	294,608,487	275,000,516	255,392,544		
	900,000	349,095,285	329,497,515	309,899,744	290,301,974	270,701,562	251,093,591	231,485,619		
	960,000	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464		
	1,000,000	325,188,360	305,590,590	285,992,819	266,395,049	246,794,637	227,186,666	207,578,694		
TLV (per acre)	960,000	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464		
	1,000,000	325,188,360	305,590,590	285,992,819	266,395,049	246,794,637	227,186,666	207,578,694		
	1,100,000	301,281,435	281,683,665	262,085,894	242,488,124	222,887,712	203,279,741	183,671,769		
	1,200,000	277,374,510	257,776,740	238,178,969	218,581,199	198,980,787	179,372,816	159,764,844		
	1,300,000	253,467,585	233,869,815	214,272,044	194,674,274	175,073,862	155,465,891	135,857,919		
			AH - % on site 40%							
			20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	256,357,407									
	10	(455,775,028)	(475,354,442)	(494,933,856)	(514,513,270)	(534,094,323)	(553,676,688)	(573,259,053)		
	15	(104,263,242)	(123,843,417)	(143,423,591)	(163,003,766)	(182,583,941)	(202,164,115)	(221,744,311)		
	20	71,389,471	51,805,612	32,221,753	12,637,116	(6,952,612)	(26,542,341)	(46,132,070)		
	Density dph	25	176,749,866	157,160,137	137,570,408	117,980,679	98,390,951	78,797,832	59,200,062	
		30	246,978,908	227,389,179	207,797,564	188,199,793	168,602,023	149,004,253	129,406,482	
	40.0	35	297,140,548	277,542,777	257,945,007	238,347,237	218,749,466	199,150,152	179,542,181	
		40	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464	
		45	364,003,806	344,406,035	324,808,265	305,209,265	285,601,294	265,993,322	246,385,351	
		50	387,405,946	367,808,175	348,210,405	328,604,374	308,996,403	289,388,432	269,780,461	
55		406,553,151	386,955,381	367,353,798	347,745,827	328,137,856	308,529,885	288,917,904		
60		422,509,156	402,911,386	383,305,009	363,697,038	344,089,067	324,481,096	304,864,667		
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	256,357,407									
	15%	404,110,818	380,178,067	356,245,316	332,312,566	308,377,173	284,434,221	260,491,269		
	16%	390,238,881	367,173,126	344,107,371	321,041,616	297,973,219	274,897,264	251,821,308		
	17%	376,366,943	354,168,184	331,969,426	309,770,667	287,569,266	265,360,307	243,151,347		
	18%	362,495,005	341,163,243	319,831,480	298,499,718	277,165,313	255,823,350	234,481,386		
	19%	348,623,068	328,158,301	307,693,535	287,228,768	266,761,360	246,286,393	225,811,425		
	20%	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464		
	21%	320,879,193	302,148,418	283,417,644	264,686,870	245,953,453	227,212,478	208,471,503		
	22%	307,007,255	289,143,477	271,279,699	253,415,920	235,549,500	217,675,521	199,801,542		
	23%	293,135,317	276,138,535	259,141,753	242,144,971	225,145,547	208,138,564	191,131,581		
	24%	279,263,380	263,133,594	247,003,808	230,874,022	214,741,594	198,601,607	182,461,620		
25%	265,391,442	250,128,652	234,865,862	219,603,073	204,337,641	189,064,650	173,791,659			
Profit % on GDV	20.00%									
	15%	404,110,818	380,178,067	356,245,316	332,312,566	308,377,173	284,434,221	260,491,269		
	16%	390,238,881	367,173,126	344,107,371	321,041,616	297,973,219	274,897,264	251,821,308		
	17%	376,366,943	354,168,184	331,969,426	309,770,667	287,569,266	265,360,307	243,151,347		
	18%	362,495,005	341,163,243	319,831,480	298,499,718	277,165,313	255,823,350	234,481,386		
	19%	348,623,068	328,158,301	307,693,535	287,228,768	266,761,360	246,286,393	225,811,425		
	20%	334,751,130	315,153,360	295,555,589	275,957,819	256,357,407	236,749,436	217,141,464		
	21%	320,879,193	302,148,418	283,417,644	264,686,870	245,953,453	227,212,478	208,471,503		
	22%	307,007,255	289,143,477	271,279,699	253,415,920	235,549,500	217,675,521	199,801,542		
	23%	293,135,317	276,138,535	259,141,753	242,144,971	225,145,547	208,138,564	191,131,581		
	24%	279,263,380	263,133,594	247,003,808	230,874,022	214,741,594	198,601,607	182,461,620		
25%	265,391,442	250,128,652	234,865,862	219,603,073	204,337,641	189,064,650	173,791,659			

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge E
 Title: Edge of Cambridge E- 1,935 units
 Notes: Brownfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme				1,935 Units					
AH Policy requirement (% Target)				40%					
AH tenure split %		Affordable Rent:		75%					
		Shared ownership:		25%					
		First Homes:		0%		0.0% % of total (>10% for HWP (Feb 2017))			
Open Market Sale (OMS) housing				60%					
				100%					
CIL Rate (£ psm)				0.00		£ psm			
Unit mix -									
	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	348.3	30.00%	232.2	30%	580.5			
3 bed House	40.00%	464.4	40.00%	309.6	40%	774.0			
4 bed House	30.00%	348.3	30.00%	232.2	30%	580.5			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	1,161.0	100.0%	774.0	100%	1,935.0			
OMS Unit Floor areas -									
	Net area per unit (sqm)	(sqft)	Net to Gross %		Gross (GIA) per unit (sqm)	(sqft)			
1 bed House		0			0.0	0			
2 bed House	75	807			75.0	807			
3 bed House	97	1,044			97.0	1,044			
4 bed House	150	1,615			150.0	1,615			
5 bed House		0			0.0	0			
1 bed Flat		0	85.0%		0.0	0			
2 bed Flat		0	85.0%		0.0	0			
AH Unit Floor areas -									
	Net area per unit (sqm)	(sqft)	Net to Gross %		Gross (GIA) per unit (sqm)	(sqft)			
1 bed House		0			0.0	0			
2 bed House	75	807			75.0	807			
3 bed House	97	1,044			97.0	1,044			
4 bed House	124	1,335			124.0	1,335			
5 bed House		0			0.0	0			
1 bed Flat		0	85.0%		0.0	0			
2 bed Flat		0	85.0%		0.0	0			
Total Gross Floor areas -									
	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm)	(sqft)			
1 bed House	0	0	0	0	0	0			
2 bed House	26,123	281,180	17,415	187,453	43,538	468,634			
3 bed House	45,047	484,880	30,031	323,253	75,078	808,133			
4 bed House	52,245	562,360	28,793	309,923	81,038	872,284			
5 bed House	0	0	0	0	0	0			
1 bed Flat	0	0	0	0	0	0			
2 bed Flat	0	0	0	0	0	0			
	123,414	1,328,420	76,239	820,630	199,653	2,149,050			
AH % by floor area:		38.19% AH % by floor area due to mix							
Open Market Sales values (£) -									
	£ OMS (per unit)	£psm	£psf		total MV £ (no AH)				
1 bed House		#DIV/0!	#DIV/0!		0				
2 bed House	400,000	5,333	495		232,200,000				
3 bed House	500,000	5,155	479		387,000,000				
4 bed House	670,000	4,467	415		388,935,000				
5 bed House		#DIV/0!	#DIV/0!		0				
1 bed Flat		#DIV/0!	#DIV/0!		0				
2 bed Flat		#DIV/0!	#DIV/0!		0				
					1,008,135,000				
Affordable Housing values (£) -									
	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed House	200,000	2,667	50%	280,000	3,733	70%	0	0	70%
3 bed House	250,000	2,577	50%	350,000	3,608	70%	0	0	70%
4 bed House	335,000	2,702	50%	469,000	3,782	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge E
 Title: Edge of Cambridge E- 1,935 units
 Notes: Brownfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	348.3	@	400,000	139,320,000
3 bed House	464.4	@	500,000	232,200,000
4 bed House	348.3	@	670,000	233,361,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	1,161.0			604,881,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	174.2	@	200,000	34,830,000
3 bed House	232.2	@	250,000	58,050,000
4 bed House	174.2	@	335,000	58,340,250
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	580.5			151,220,250
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	58.1	@	280,000	16,254,000
3 bed House	77.4	@	350,000	27,090,000
4 bed House	58.1	@	469,000	27,225,450
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	193.5			70,569,450
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential	1,935.0			826,670,700
<i>AH on-site cost analysis:</i>				
	909 £ psm (total GIA sqm)		£MV less £GDV	181,464,300
			93,780 £ per unit (total units)	
Grant	1,935	@	0	-
Total GDV				826,670,700

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge E
 Title: Edge of Cambridge E- 1,935 units
 Notes: Brownfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(710,000)
Statutory Planning Fees (Residential)				(235,824)
CIL		123,414 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Site Specific S106 Contributions	Year 1	0 £ per dwelling		-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
	Biodiversity offset	42,545 £ per gross hectare		(4,116,229)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	1,935 units @	0 per unit	(4,116,229)
	S106 analysis:	0.50% % of GDV	2,127 £ per unit (total units)	-
AH Commuted Sum		199,653 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		-
Construction Costs -				
Site Clearance and Demolition		119.53 acres @	110,000 £ per acre (if brownfield)	(13,148,809)
Infrastructure costs -	Year 1	15,000 build costs		(29,025,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	119.53 acres @	per acre	(29,025,000)
	Infra. Costs analysis:	3.51% % of GDV	15,000 £ per unit (total units)	-
1 bed House		- sqm @	1,277 psm	-
2 bed House		43,538 sqm @	1,277 psm	(55,597,388)
3 bed House		75,078 sqm @	1,277 psm	(95,874,606)
4 bed House		81,038 sqm @	1,277 psm	(103,485,271)
5 bed House		- sqm @	1,277 psm	-
1 bed Flat		- sqm @	psm	-
2 bed Flat	199,653	- sqm @	psm	-
External works		254,957,264 @	15.0% 19,764 £per unit	(38,243,590)
Category 2 Housing		0% of All units	1,935 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	1,935 units @ 10,307 £ per dwelling	-
Water efficiency			1,935 units @ 9 £ per dwelling	(17,415)
Contingency		335,392,077 @	5.0%	(16,769,604)
Professional Fees		335,392,077 @	10.0%	(33,539,208)
Disposal Costs -				
Marketing and Promotion		604,881,000 OMS @	1.50%	(9,073,215)
Residential Sales Agent Costs		604,881,000 OMS @	1.00%	(6,048,810)
Residential Sales Legal Costs		604,881,000 OMS @	0.50%	(3,024,405)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(1,035,879)
Developers Profit -				
Margin on AH		221,789,700	6.00% on AH values	(13,307,382)
Profit on GDV		604,881,000	20.00%	(120,976,200)
		409,945,251	29.51% on costs	(120,976,200)
		826,670,700	16.24% blended	(134,283,582)
TOTAL COSTS				(544,228,833)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge E
 Title: Edge of Cambridge E- 1,935 units
 Notes: Brownfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				282,441,867
SDLT	282,441,867	@	5.0% (slabbed)	(14,111,593)
Acquisition Agent fees	282,441,867	@	1.0%	(2,824,419)
Acquisition Legal fees	282,441,867	@	0.5%	(1,412,209)
Interest on Land	282,441,867	@	7.50%	(21,183,140)
Residual Land Value				242,910,506
<i>RLV analysis:</i>	125,535 £ per plot	5,021,406 £ per ha	2,032,135 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		40.0 dph		
Site Area (Resi)		48.38 ha	119.53 acres	
<i>Density analysis:</i>		4,127 sqm/ha	17,978 sqft/ac	
Threshold Land Value	59,304 £ per plot	2,372,160 £ per ha	960,000 £ per acre	114,753,240
Gross to net land area	50%			

BALANCE				
Surplus/(Deficit)		2,649,246 £ per ha	1,072,135 £ per acre	128,157,266

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge E
 Title: Edge of Cambridge E- 1,935 units
 Notes: Brownfield

SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	128,157,266	-	167,353,966	157,555,081	147,756,196	137,957,311	128,157,266	118,353,280	108,549,295
	5,000	157,663,805	147,871,875	138,079,946	128,288,016	118,496,086	108,704,157	98,912,227	
	10,000	147,850,537	138,061,193	128,271,848	118,482,472	108,692,765	98,903,058	89,113,351	
	15,000	137,908,251	128,114,474	118,320,697	108,526,920	98,733,143	88,939,366	79,145,589	
	20,000	127,835,123	118,032,772	108,230,421	98,428,070	88,621,906	78,813,561	69,005,217	
	25,000	117,629,160	107,813,676	97,996,109	88,172,331	78,348,554	68,520,119	58,686,888	
	30,000	107,287,258	97,451,431	87,607,579	77,763,727	67,908,785	58,052,580	48,183,955	
	35,000	96,806,258	86,938,339	77,069,714	67,187,320	57,300,003	47,401,850	37,489,590	
	40,000	86,175,470	76,277,318	66,366,534	56,447,132	46,514,639	36,564,133	26,596,774	
	45,000	75,397,510	65,457,409	55,504,958	45,533,252	35,543,473	25,533,020	15,498,299	
	50,000	64,469,730	54,477,939	44,468,793	34,438,719	24,384,114	14,301,348	4,184,821	
	55,000	53,379,139	43,332,540	33,261,158	23,161,352	13,029,453	2,861,759	(7,353,036)	
	60,000	42,129,531	32,016,784	21,874,085	11,694,095	1,472,182	(8,793,533)	(19,120,764)	
	65,000	30,712,193	20,523,607	10,297,399	29,694	(10,295,207)	(20,676,240)	(31,128,271)	
	70,000	19,122,617	8,852,920	(1,469,651)	(11,841,490)	(22,280,430)	(32,791,565)	(43,390,176)	
	75,000	7,355,905	(3,011,369)	(13,434,422)	(23,923,777)	(34,491,412)	(45,147,752)	(55,910,517)	
	80,000	(4,592,587)	(15,066,419)	(25,604,472)	(36,224,876)	(46,936,297)	(57,757,381)	(68,707,017)	
85,000	(16,732,378)	(27,319,676)	(37,988,999)	(48,752,825)	(59,627,470)	(70,631,280)	(81,788,333)		
90,000	(29,063,209)	(39,780,800)	(50,594,328)	(61,517,728)	(72,572,960)	(83,777,883)	(95,166,914)		
95,000	(41,597,273)	(52,457,772)	(63,427,519)	(74,528,950)	(85,779,706)	(97,211,870)	(108,857,890)		
100,000	(54,340,099)	(65,355,258)	(76,496,951)	(87,794,016)	(99,264,652)	(110,945,914)	(124,201,132)		
CIL £ psm	128,157,266	£0	167,353,966	157,555,081	147,756,196	137,957,311	128,157,266	118,353,280	108,549,295
	£50	159,267,997	149,984,054	140,700,111	131,412,105	122,122,175	112,832,245	103,541,652	
	£100	151,097,827	142,336,776	133,569,170	124,801,198	116,033,225	107,260,429	98,484,473	
	£150	142,841,241	134,604,496	126,366,553	118,128,610	109,883,863	101,636,959	93,386,706	
	£200	134,491,623	126,791,954	119,092,285	111,386,169	103,676,512	95,962,922	88,242,234	
	£250	126,050,379	118,897,405	111,740,837	104,576,797	97,410,622	90,234,480	83,053,384	
	£300	117,516,380	110,918,702	104,310,747	97,700,874	91,079,978	84,455,110	77,817,763	
	£350	108,887,255	102,850,538	96,803,561	90,751,433	84,690,056	78,617,264	72,535,027	
	£400	100,160,588	94,692,415	89,217,248	83,729,998	78,235,093	72,727,659	67,204,292	
	£450	91,333,920	86,443,993	81,548,067	76,636,899	71,713,887	66,777,558	61,824,796	
	£500	82,404,744	78,102,971	73,792,533	69,470,229	65,128,733	60,771,310	56,394,868	
	£550	73,370,510	69,667,008	65,952,057	62,222,535	58,475,341	54,707,400	50,915,663	
	£600	64,228,620	61,133,719	58,024,465	54,897,763	51,750,537	48,579,739	45,382,344	
	£650	54,976,411	52,500,674	50,007,542	47,493,961	44,956,885	42,393,292	39,800,182	
	£700	45,611,240	43,765,401	41,899,031	40,009,089	38,092,558	36,144,630	34,159,379	
	£750	36,130,313	34,925,379	33,696,635	32,441,069	31,153,258	29,828,971	28,466,973	
	£800	26,530,854	25,978,044	25,398,014	24,786,379	24,137,215	23,449,964	22,718,432	
£850	16,810,019	16,920,784	17,000,786	17,043,103	17,045,262	17,005,908	16,911,266		
£900	6,964,912	7,750,939	8,502,524	9,210,748	9,875,446	10,491,063	11,048,606		
£950	(3,007,413)	(1,534,197)	(99,242)	1,287,090	2,625,772	3,906,547	5,125,185		
£1,000	(13,109,958)	(10,937,383)	(8,807,028)	(6,730,133)	(4,705,789)	(2,747,890)	(859,620)		
Change in build costs	128,157,266	80%	226,459,505	216,435,365	206,405,344	196,375,323	186,345,303	176,315,282	166,278,336
		85%	211,687,931	201,718,939	191,749,948	181,778,476	171,803,421	161,828,366	151,853,311
		90%	196,916,357	187,002,367	177,088,377	167,174,388	157,260,398	147,341,450	137,421,360
		95%	182,136,388	172,282,460	162,426,807	152,567,820	142,708,832	132,849,845	122,989,409
		100%	167,353,966	157,555,081	147,756,196	137,957,311	128,157,266	118,353,280	108,549,295
		105%	152,566,553	142,826,776	133,083,860	123,340,017	113,596,174	103,852,331	94,107,733
		110%	137,772,263	128,087,572	118,402,880	108,718,189	99,033,498	89,345,122	79,656,322
Market units sale values	128,157,266	80%	60,346,214	57,250,673	54,149,221	51,047,485	47,944,477	44,836,022	41,727,567
		85%	87,113,466	82,339,181	77,563,820	72,783,762	68,003,705	63,223,215	58,436,723
		90%	113,869,571	107,417,911	100,966,252	94,514,592	88,059,280	81,601,990	75,144,700
		95%	140,615,208	132,491,946	124,365,028	116,236,940	108,108,853	99,980,765	91,847,957
		100%	167,353,966	157,555,081	147,756,196	137,957,311	128,157,266	118,353,280	108,549,295
		105%	194,086,730	182,617,047	171,147,110	159,672,991	148,198,871	136,724,752	125,250,633
		110%	220,817,489	207,673,236	194,528,983	181,384,730	168,240,477	155,096,224	141,949,650
	115%	247,539,630	232,725,243	217,910,856	203,096,469	188,282,082	173,464,733	158,645,745	
	120%	274,261,770	257,777,249	241,292,729	224,807,632	208,319,035	191,830,438	175,341,841	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Edge E
 Title: Edge of Cambridge E- 1,935 units
 Notes: Brownfield

		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	128,157,266							
	80,000	272,544,436	262,745,551	252,946,666	243,147,781	233,347,736	223,543,750	213,739,765
	100,000	270,153,744	260,354,859	250,555,974	240,757,088	230,957,044	221,153,058	211,349,072
	120,000	267,763,051	257,964,166	248,165,281	238,366,396	228,566,351	218,762,365	208,958,380
	140,000	265,372,359	255,573,474	245,774,589	235,975,703	226,175,659	216,371,673	206,567,687
	160,000	262,981,666	253,182,781	243,383,896	233,585,011	223,784,966	213,980,980	204,176,995
	180,000	260,590,974	250,792,089	240,993,204	231,194,318	221,394,274	211,590,288	201,786,302
	200,000	258,200,281	248,401,396	238,602,511	228,803,626	219,003,581	209,199,595	199,395,610
	220,000	255,809,589	246,010,704	236,211,819	226,412,933	216,612,889	206,808,903	197,004,917
	240,000	253,418,896	243,620,011	233,821,126	224,022,241	214,222,196	204,418,210	194,614,225
		AH - % on site 40%						
Balance (RLV - TLV)	128,157,266							
	10	(227,909,934)	(237,699,641)	(247,489,348)	(257,279,055)	(267,069,749)	(276,860,931)	(286,652,114)
	15	(52,153,709)	(61,943,797)	(71,733,884)	(81,523,971)	(91,314,059)	(101,104,146)	(110,894,233)
	20	35,672,812	25,880,882	16,088,952	6,296,797	(3,498,067)	(13,292,932)	(23,087,796)
	25	88,353,172	78,558,307	68,763,443	58,968,579	49,173,714	39,377,317	29,578,432
	30	123,467,693	113,672,828	103,877,183	94,078,298	84,279,413	74,480,528	64,681,642
	35	148,548,675	138,749,790	128,950,905	119,152,020	109,353,134	99,553,639	89,749,653
	40	167,353,966	157,555,081	147,756,196	137,957,311	128,157,266	118,353,280	108,549,295
	45	181,980,304	172,181,419	162,382,534	152,583,195	142,779,209	132,975,224	123,171,238
	50	193,681,374	183,882,489	174,083,604	164,280,750	154,476,764	144,672,779	134,868,793
55	203,254,977	193,456,092	183,655,462	173,851,476	164,047,491	154,243,505	144,437,675	
60	211,232,979	201,434,094	191,631,067	181,827,082	172,023,096	162,219,111	152,411,057	
		AH - % on site 40%						
Balance (RLV - TLV)	128,157,266							
	15%	202,033,810	190,067,435	178,101,060	166,134,684	154,167,149	142,195,673	130,224,197
	16%	195,097,842	183,564,964	172,032,087	160,499,209	148,965,172	137,427,195	125,889,217
	17%	188,161,873	177,062,494	165,963,114	154,863,735	143,763,196	132,658,716	121,554,236
	18%	181,225,904	170,560,023	159,894,141	149,228,260	138,561,219	127,890,238	117,219,256
	19%	174,289,935	164,057,552	153,825,169	143,592,786	133,359,243	123,121,759	112,884,275
	20%	167,353,966	157,555,081	147,756,196	137,957,311	128,157,266	118,353,280	108,549,295
	21%	160,417,998	151,052,611	141,687,223	132,321,836	122,955,289	113,584,802	104,214,314
	22%	153,482,029	144,550,140	136,618,251	126,686,362	117,753,313	108,816,323	99,879,334
	23%	146,546,060	138,047,669	129,549,278	121,050,887	112,551,336	104,047,845	95,544,353
24%	139,610,091	131,545,198	123,480,305	115,415,412	107,349,360	99,279,366	91,209,373	
25%	132,674,122	125,042,728	117,411,333	109,779,938	102,147,383	94,510,888	86,874,392	
Profit % on GDV	20.00%							
	15%	202,033,810	190,067,435	178,101,060	166,134,684	154,167,149	142,195,673	130,224,197
	16%	195,097,842	183,564,964	172,032,087	160,499,209	148,965,172	137,427,195	125,889,217
	17%	188,161,873	177,062,494	165,963,114	154,863,735	143,763,196	132,658,716	121,554,236
	18%	181,225,904	170,560,023	159,894,141	149,228,260	138,561,219	127,890,238	117,219,256
	19%	174,289,935	164,057,552	153,825,169	143,592,786	133,359,243	123,121,759	112,884,275
	20%	167,353,966	157,555,081	147,756,196	137,957,311	128,157,266	118,353,280	108,549,295
	21%	160,417,998	151,052,611	141,687,223	132,321,836	122,955,289	113,584,802	104,214,314
	22%	153,482,029	144,550,140	136,618,251	126,686,362	117,753,313	108,816,323	99,879,334
	23%	146,546,060	138,047,669	129,549,278	121,050,887	112,551,336	104,047,845	95,544,353
24%	139,610,091	131,545,198	123,480,305	115,415,412	107,349,360	99,279,366	91,209,373	
25%	132,674,122	125,042,728	117,411,333	109,779,938	102,147,383	94,510,888	86,874,392	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: New A
 Title: New Settlement A- 5,120 units
 Notes: Greenfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme				5,120 Units					
AH Policy requirement (% Target)				40%					
AH tenure split %		Affordable Rent:		75%					
		Shared ownership		25%					
		First Homes		0%		0.0% % of total (>10% for HWP (Feb 2017))			
Open Market Sale (OMS) housing				60%					
				100%					
CIL Rate (£ psm)				0.00		£ psm			
Unit mix -									
	Mkt Units mix%	MV # units		AH mix%	AH # units	Overall mix%	Total # units		
1 bed House	0.00%	0.0		0.00%	0.0	0%	0.0		
2 bed House	30.00%	921.6		30.00%	614.4	30%	1,536.0		
3 bed House	40.00%	1,228.8		40.00%	819.2	40%	2,048.0		
4 bed House	30.00%	921.6		30.00%	614.4	30%	1,536.0		
5 bed House	0.00%	0.0		0.00%	0.0	0%	0.0		
1 bed Flat	0.00%	0.0		0.00%	0.0	0%	0.0		
2 bed Flat	0.00%	0.0		0.00%	0.0	0%	0.0		
Total number of units	100.0%	3,072.0		100.0%	2,048.0	100%	5,120.0		
OMS Unit Floor areas -									
	Net area per unit (sqm)	(sqft)		Net to Gross %		Gross (GIA) per unit (sqm)	(sqft)		
1 bed House		0				0.0	0		
2 bed House	75	807				75.0	807		
3 bed House	97	1,044				97.0	1,044		
4 bed House	150	1,615				150.0	1,615		
5 bed House		0				0.0	0		
1 bed Flat		0		85.0%		0.0	0		
2 bed Flat		0		85.0%		0.0	0		
AH Unit Floor areas -									
	Net area per unit (sqm)	(sqft)		Net to Gross %		Gross (GIA) per unit (sqm)	(sqft)		
1 bed House		0				0.0	0		
2 bed House	75	807				75.0	807		
3 bed House	97	1,044				97.0	1,044		
4 bed House	124	1,335				124.0	1,335		
5 bed House		0				0.0	0		
1 bed Flat		0		85.0%		0.0	0		
2 bed Flat		0		85.0%		0.0	0		
Total Gross Floor areas -									
	Mkt Units GIA (sqm)	(sqft)		AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm)	(sqft)		
1 bed House	0	0		0	0	0	0		
2 bed House	69,120	744,001		46,080	496,001	115,200	1,240,002		
3 bed House	119,194	1,282,989		79,462	855,326	198,656	2,138,315		
4 bed House	138,240	1,488,003		76,186	820,055	214,426	2,308,058		
5 bed House	0	0		0	0	0	0		
1 bed Flat	0	0		0	0	0	0		
2 bed Flat	0	0		0	0	0	0		
	326,554	3,514,994		201,728	2,171,382	528,282	5,686,376		
<i>AH % by floor area:</i>				38.19%		<i>AH % by floor area due to mix</i>			
Open Market Sales values (£) -									
	£ OMS (per unit)	£psm	£psf			total MV £ (no AH)			
1 bed House		#DIV/0!	#DIV/0!			0			
2 bed House	350,000	4,667	434			537,600,000			
3 bed House	425,000	4,381	407			870,400,000			
4 bed House	550,000	3,667	341			844,800,000			
5 bed House		#DIV/0!	#DIV/0!			0			
1 bed Flat		#DIV/0!	#DIV/0!			0			
2 bed Flat		#DIV/0!	#DIV/0!			0			
						2,252,800,000			
Affordable Housing values (£) -									
	Aff. Rent £	£psm	% of MV	Shared ownership £	£psm	% of MV	First Homes £	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%		#DIV/0!	70%
2 bed House	175,000	2,333	50%	245,000	3,267	70%		0	70%
3 bed House	212,500	2,191	50%	297,500	3,067	70%		0	70%
4 bed House	275,000	2,218	50%	385,000	3,105	70%		0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%		#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%		#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%		#DIV/0!	70%

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: New A
 Title: New Settlement A- 5,120 units
 Notes: Greenfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	921.6	@	350,000	322,560,000
3 bed House	1,228.8	@	425,000	522,240,000
4 bed House	921.6	@	550,000	506,880,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	3,072.0			1,351,680,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	460.8	@	175,000	80,640,000
3 bed House	614.4	@	212,500	130,560,000
4 bed House	460.8	@	275,000	126,720,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	1,536.0			337,920,000
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	153.6	@	245,000	37,632,000
3 bed House	204.8	@	297,500	60,928,000
4 bed House	153.6	@	385,000	59,136,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	512.0			157,696,000
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential	5,120.0			1,847,296,000
<i>AH on-site cost analysis:</i>				
	768	£ psm (total GIA sqm)	£MV less £GDV	405,504,000
			79,200	£ per unit (total units)
Grant	5,120	@	0	-
Total GDV				1,847,296,000

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: New A
 Title: New Settlement A- 5,120 units
 Notes: Greenfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(1,810,000)
Statutory Planning Fees (Residential)				(602,099)
CIL		326,554 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
Biodiversity offset		42,545	£ per gross hectare	(10,891,520)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	5,120 units @	0 per unit	(10,891,520)
	S106 analysis:	0.59% % of GDV	2,127 £ per unit (total units)	-
AH Commuted Sum		528,282 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		-
Construction Costs -				
Site Clearance and Demolition		316.29 acres @	0 £ per acre (if brownfield)	-
Infrastructure costs -	Year 1	30,000	build costs	(153,600,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	316.29 acres @	per acre	(153,600,000)
	Infra. Costs analysis:	8.31% % of GDV	30,000 £ per unit (total units)	-
1 bed House		-	1,191 psm	-
2 bed House		115,200 sqm @	1,191 psm	(137,203,200)
3 bed House		198,656 sqm @	1,191 psm	(236,599,296)
4 bed House		214,426 sqm @	1,191 psm	(255,380,890)
5 bed House		-	1,191 psm	-
1 bed Flat		-	psm	-
2 bed Flat	528,282	-	psm	-
External works		629,183,386 @	20.0% 24,577 £ per unit	(125,836,677)
Category 2 Housing		0% of All units	5,120 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	5,120 units @ 10,307 £ per dwelling	-
Water efficiency			5,120 units @ 9 £ per dwelling	(46,080)
Contingency		908,666,143 @	5.0%	(45,433,307)
Professional Fees		908,666,143 @	10.0%	(90,866,614)
Disposal Costs -				
Marketing and Promotion		1,351,680,000 OMS @	1.50%	(20,275,200)
Residential Sales Agent Costs		1,351,680,000 OMS @	1.00%	(13,516,800)
Residential Sales Legal Costs		1,351,680,000 OMS @	0.50%	(6,758,400)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(3,363,249)
Developers Profit -				
Margin on AH		495,616,000	6.00% on AH values	(29,736,960)
Profit on GDV		1,351,680,000	20.00%	(270,336,000)
		1,102,183,332	24.53% on costs (270,336,000)	
		1,847,296,000	16.24% blended (300,072,960)	
TOTAL COSTS				(1,402,256,292)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: New A
 Title: New Settlement A- 5,120 units
 Notes: Greenfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				445,039,708
SDLT	445,039,708 @		5.0% (slabbed)	(22,241,485)
Acquisition Agent fees	445,039,708 @		1.0%	(4,450,397)
Acquisition Legal fees	445,039,708 @		0.5%	(2,225,199)
Interest on Land	445,039,708 @		7.50%	(33,377,978)
Residual Land Value				382,744,649
<i>RLV analysis:</i>	74,755 £ per plot	2,990,193 £ per ha	1,210,114 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		40.0 dph		
Site Area (Resi)		128.00 ha	316.29 acres	
<i>Density analysis:</i>		4,127 sqm/ha	17,978 sqft/ac	
Threshold Land Value	12,355 £ per plot	494,200 £ per ha	200,000 £ per acre	63,257,600
Gross to net land area	50%			

BALANCE				
Surplus/(Deficit)		2,495,993 £ per ha	1,010,114 £ per acre	319,487,049

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: New A
 Title: New Settlement A- 5,120 units
 Notes: Greenfield

SENSITIVITY ANALYSIS										
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	319,487,049	-	405,666,590	384,121,705	362,576,819	341,031,934	319,487,049	297,942,164	276,397,279	
		3,000	389,916,438	368,367,628	346,816,194	325,264,759	303,713,325	282,161,891	260,610,456	
		6,000	373,926,871	352,361,675	330,796,479	309,226,534	287,651,603	266,076,673	244,495,932	
		9,000	357,703,779	336,108,994	314,508,832	292,907,012	271,291,329	249,672,953	228,039,797	
		12,000	341,229,488	319,596,332	297,948,578	276,295,664	254,621,659	232,934,448	211,228,559	
		15,000	324,507,029	302,811,802	281,105,282	259,381,672	237,631,452	215,855,470	194,048,625	
		18,000	307,514,975	285,753,268	263,968,217	242,153,917	220,304,412	198,413,699	176,475,726	
		21,000	290,258,218	268,410,101	246,526,360	224,600,977	202,627,884	180,600,965	158,498,650	
		24,000	272,721,130	250,768,594	228,768,383	206,711,118	184,593,398	162,392,223	140,096,970	
		27,000	254,892,374	232,818,678	210,682,647	188,472,285	166,177,081	143,777,850	121,249,500	
		30,000	236,768,222	214,552,347	192,257,193	169,872,096	147,371,530	124,736,993	101,934,275	
		33,000	218,337,305	195,957,814	173,479,734	150,885,722	128,150,380	105,247,893	82,128,525	
		36,000	199,587,939	177,022,964	154,337,649	131,509,044	108,503,877	85,288,226	61,803,896	
		39,000	180,507,509	157,735,352	134,817,973	111,717,952	88,410,077	64,835,203	40,932,710	
		42,000	161,083,813	138,081,252	114,895,353	91,501,148	67,842,942	43,863,979	19,488,731	
		45,000	141,306,771	118,041,226	94,564,715	70,829,566	46,784,467	22,349,846	(2,563,400)	
		48,000	121,160,758	97,606,652	73,802,915	49,691,696	25,210,962	266,686	(25,261,203)	
	51,000	100,632,236	76,763,586	52,594,701	28,063,726	3,093,824	(22,428,204)	(48,639,713)		
	54,000	79,708,059	55,486,825	30,914,433	5,920,962	(19,595,204)	(45,756,903)	(74,286,841)		
	57,000	58,374,100	33,765,139	8,748,100	(16,762,204)	(42,881,334)	(70,820,384)	(103,209,673)		
	60,000	36,615,527	11,575,238	(13,929,204)	(40,012,323)	(67,380,572)	(99,566,197)	(133,088,904)		
CIL £ psm	319,487,049	£0	405,666,590	384,121,705	362,576,819	341,031,934	319,487,049	297,942,164	276,397,279	
		£50	383,678,187	363,512,002	343,345,818	323,179,633	303,013,448	282,847,264	262,681,079	
		£100	361,229,117	342,480,635	323,732,152	304,980,196	286,226,312	267,472,428	248,718,544	
		£150	338,309,351	321,011,015	303,712,679	286,414,342	269,114,387	251,807,477	234,500,567	
		£200	314,890,879	299,088,855	283,282,838	267,470,640	251,658,441	235,841,953	220,017,794	
		£250	290,960,809	276,688,797	262,413,675	248,138,552	233,850,550	219,561,620	205,260,611	
		£300	266,485,659	253,791,886	241,098,113	228,388,979	215,679,286	202,952,697	190,219,146	
		£350	241,445,042	230,378,871	219,301,905	208,217,423	197,117,679	186,008,073	174,881,768	
		£400	215,813,641	206,423,370	197,013,921	187,596,448	178,162,473	168,707,193	159,231,516	
		£450	189,561,975	181,897,558	174,209,632	166,507,298	158,785,717	151,039,627	143,263,809	
		£500	162,659,474	156,774,456	150,863,015	144,931,063	138,973,355	132,984,689	126,959,903	
		£550	135,074,449	131,023,251	126,947,087	122,843,166	118,706,309	114,531,378	110,308,289	
		£600	106,763,386	104,613,910	102,433,871	100,218,122	97,961,555	95,656,545	93,290,247	
		£650	77,695,943	77,514,819	77,294,363	77,029,505	76,715,217	76,339,905	75,894,712	
		£700	47,827,588	49,684,882	51,496,721	53,249,921	54,942,536	56,563,573	58,101,044	
		£750	17,116,978	21,084,608	24,996,366	28,847,329	32,617,846	36,304,717	39,888,147	
		£800	(14,495,808)	(8,332,336)	(2,232,690)	3,783,853	9,714,542	15,539,666	21,239,822	
	£850	(47,055,621)	(38,609,435)	(30,241,046)	(21,968,554)	(13,804,254)	(5,762,538)	2,134,498		
	£900	(83,449,765)	(70,867,823)	(59,072,879)	(48,454,901)	(37,966,222)	(27,625,776)	(17,452,200)		
	£950	(123,732,743)	(108,266,218)	(92,930,968)	(77,749,249)	(62,813,545)	(50,077,564)	(37,547,488)		
	£1,000	(165,342,272)	(146,862,860)	(128,543,570)	(110,406,138)	(92,471,965)	(74,772,553)	(58,172,539)		
Change in build costs	319,487,049	80%	558,040,477	535,918,799	513,797,120	491,675,441	469,553,763	447,432,084	425,310,405	
		85%	519,968,469	497,993,380	476,018,291	454,043,202	432,068,113	410,091,675	388,111,671	
		90%	481,889,163	460,059,009	438,227,931	416,394,611	394,561,290	372,727,970	350,894,649	
		95%	443,788,141	422,039,856	400,411,571	378,723,286	357,035,001	335,346,716	313,658,432	
		100%	405,666,590	384,121,705	362,576,819	341,031,934	319,487,049	297,942,164	276,397,279	
		105%	367,524,064	346,120,954	324,717,844	303,314,734	281,911,624	260,508,514	239,105,404	
		110%	329,354,661	308,091,713	286,828,766	265,565,818	244,302,870	223,039,923	201,776,975	
		115%	291,152,429	270,028,043	248,903,656	227,779,270	206,654,883	185,529,156	164,399,253	
	120%	252,911,368	231,923,954	210,936,540	189,948,239	168,953,584	147,958,930	126,962,592		
Market units sale values	319,487,049	80%	165,922,018	159,375,624	152,828,961	146,278,046	139,727,131	133,176,216	126,625,301	
		85%	225,968,208	215,661,613	205,355,018	195,047,310	184,737,458	174,427,606	164,117,754	
		90%	285,923,773	271,865,147	257,806,520	243,747,894	229,689,267	215,630,641	201,572,014	
		95%	345,816,487	328,013,092	310,209,697	292,406,302	274,602,907	256,799,512	238,996,117	
		100%	405,666,590	384,121,705	362,576,819	341,031,934	319,487,049	297,942,164	276,397,279	
		105%	465,485,572	440,201,754	414,917,935	389,634,116	364,350,297	339,066,478	313,782,659	
		110%	525,284,027	496,262,805	467,241,582	438,220,360	409,199,138	380,177,916	351,156,693	
		115%	585,053,859	552,297,383	519,540,906	486,784,430	454,027,954	421,271,478	388,515,002	
	120%	644,819,122	608,328,281	571,837,441	535,346,601	498,854,724	462,362,683	425,870,643		

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: New A
 Title: New Settlement A- 5,120 units
 Notes: Greenfield

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	319,487,049								
	80,000	443,621,150	422,076,265	400,531,379	378,986,494	357,441,609	335,896,724	314,351,839	
	100,000	437,295,390	415,750,505	394,205,619	372,660,734	351,115,849	329,570,964	308,026,079	
	120,000	430,969,630	409,424,745	387,879,859	366,334,974	344,790,089	323,245,204	301,700,319	
	140,000	424,643,870	403,098,985	381,554,099	360,009,214	338,464,329	316,919,444	295,374,559	
TLV (per acre)	200,000	160,000	180,000	200,000	220,000	240,000			
	160,000	418,318,110	396,773,225	375,228,339	353,683,454	332,138,569	310,593,684	289,048,799	
	180,000	411,992,350	390,447,465	368,902,579	347,357,694	325,812,809	304,267,924	282,723,039	
	200,000	405,666,590	384,121,705	362,576,819	341,031,934	319,487,049	297,942,164	276,397,279	
	220,000	399,340,830	377,795,945	356,251,059	334,706,174	313,161,289	291,616,404	270,071,519	
240,000	393,015,070	371,470,185	349,925,299	328,380,414	306,835,529	285,290,644	263,745,759		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	319,487,049								
	10	185,713,647	164,148,451	142,583,254	121,018,058	99,447,807	77,872,876	56,297,946	
	15	283,576,544	262,025,109	240,473,675	218,922,241	197,370,806	175,819,372	154,267,938	
	20	332,445,197	310,897,814	289,350,431	267,803,047	246,255,664	224,708,280	203,160,897	
	Density dph	25	361,742,420	340,197,216	318,652,012	297,106,808	275,561,604	254,016,400	232,471,195
		30	381,272,648	359,727,444	338,182,240	316,637,035	295,091,831	273,546,627	252,001,423
	40.0	35	395,212,535	373,667,650	352,122,765	330,577,879	309,032,994	287,488,109	265,943,224
		40	405,666,590	384,121,705	362,576,819	341,031,934	319,487,049	297,942,164	276,397,279
		45	413,797,521	392,252,636	370,707,751	349,162,866	327,617,980	306,073,095	284,528,210
		50	420,302,266	398,757,381	377,212,496	355,667,611	334,122,726	312,577,840	291,032,380
55		425,624,331	404,079,445	382,534,560	360,989,355	339,442,940	317,896,524	296,350,109	
60		430,059,384	408,513,627	386,967,212	365,420,796	343,874,381	322,327,965	300,781,550	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	319,487,049								
	15%	483,162,910	456,774,505	430,386,099	403,997,694	377,609,289	351,220,884	324,832,479	
	16%	467,663,646	442,243,945	416,824,243	391,404,542	365,984,841	340,565,140	315,145,439	
	17%	452,164,382	427,713,385	403,262,387	378,811,390	354,360,393	329,909,396	305,458,399	
	Profit % on GDV	18%	436,665,118	413,182,825	389,700,531	366,218,238	342,735,945	319,253,652	295,771,359
		19%	421,165,854	398,652,265	376,138,675	353,625,086	331,111,497	308,597,908	286,084,319
	20.00%	20%	405,666,590	384,121,705	362,576,819	341,031,934	319,487,049	297,942,164	276,397,279
		21%	390,167,326	369,591,145	349,014,963	328,438,782	307,862,601	287,286,420	266,710,239
		22%	374,668,062	355,060,585	335,453,107	315,845,630	296,238,153	276,630,676	257,023,199
		23%	359,168,798	340,530,025	321,891,251	303,252,478	284,613,705	265,974,932	247,336,159
24%		343,669,534	325,999,465	308,329,395	290,659,326	272,989,257	255,319,188	237,649,119	
25%		328,170,270	311,468,905	294,767,539	278,066,174	261,364,809	244,663,444	227,962,079	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **New B**
 Title: **New Settlement B- 2,560 units**
 Notes: **Greenfield**

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme	2,560 Units								
AH Policy requirement (% Target)	40%								
AH tenure split %	Affordable Rent:	75%							
	Shared ownership:	25%							
	First Homes:	0%							
Open Market Sale (OMS) housing	60%								
	100%								
CIL Rate (£ psm)	0.00 £ psm								
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	460.8	30.00%	307.2	30%	768.0			
3 bed House	40.00%	614.4	40.00%	409.6	40%	1,024.0			
4 bed House	30.00%	460.8	30.00%	307.2	30%	768.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	1,536.0	100.0%	1,024.0	100%	2,560.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit					
1 bed House	0	0		0.0	0				
2 bed House	75	807		75.0	807				
3 bed House	97	1,044		97.0	1,044				
4 bed House	150	1,615		150.0	1,615				
5 bed House	0	0		0.0	0				
1 bed Flat	0	0	85.0%	0.0	0				
2 bed Flat	0	0	85.0%	0.0	0				
AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit					
1 bed House	0	0		0.0	0				
2 bed House	75	807		75.0	807				
3 bed House	97	1,044		97.0	1,044				
4 bed House	124	1,335		124.0	1,335				
5 bed House	0	0		0.0	0				
1 bed Flat	0	0	85.0%	0.0	0				
2 bed Flat	0	0	85.0%	0.0	0				
Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units)				
1 bed House	0	0	0	0	0				
2 bed House	34,560	372,001	23,040	248,000	57,600				
3 bed House	59,597	641,495	39,731	427,663	99,328				
4 bed House	69,120	744,001	38,093	410,027	107,213				
5 bed House	0	0	0	0	0				
1 bed Flat	0	0	0	0	0				
2 bed Flat	0	0	0	0	0				
	163,277	1,757,497	100,864	1,085,691	264,141				
	38.19% AH % by floor area due to mix								
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House		#DIV/0!	#DIV/0!	0					
2 bed House	350,000	4,667	434	268,800,000					
3 bed House	425,000	4,381	407	435,200,000					
4 bed House	550,000	3,667	341	422,400,000					
5 bed House		#DIV/0!	#DIV/0!	0					
1 bed Flat		#DIV/0!	#DIV/0!	0					
2 bed Flat		#DIV/0!	#DIV/0!	0					
	1,126,400,000								
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed House	175,000	2,333	50%	245,000	3,267	70%	0	0	70%
3 bed House	212,500	2,191	50%	297,500	3,067	70%	0	0	70%
4 bed House	275,000	2,218	50%	385,000	3,105	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: New B
 Title: New Settlement B- 2,560 units
 Notes: Greenfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	460.8	@	350,000	161,280,000
3 bed House	614.4	@	425,000	261,120,000
4 bed House	460.8	@	550,000	253,440,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	1,536.0			675,840,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	230.4	@	175,000	40,320,000
3 bed House	307.2	@	212,500	65,280,000
4 bed House	230.4	@	275,000	63,360,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	768.0			168,960,000
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	76.8	@	245,000	18,816,000
3 bed House	102.4	@	297,500	30,464,000
4 bed House	76.8	@	385,000	29,568,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	256.0			78,848,000
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential	2,560.0			923,648,000
<i>AH on-site cost analysis:</i>				
	768	£ psm (total GIA sqm)	£MV less £GDV	202,752,000
			79,200	£ per unit (total units)
Grant	2,560	@	0	-
Total GDV				923,648,000

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **New B**
 Title: **New Settlement B- 2,560 units**
 Notes: **Greenfield**

DEVELOPMENT COSTS						
Initial Payments -						
Planning Application Professional Fees, Surveys and reports						(920,000)
Statutory Planning Fees (Residential)						(307,699)
CIL		163,277 sqm		0.00 £ psm		-
	CIL analysis:	0.00% % of GDV		0 £ per unit (total units)		-
Site Specific S106 Contributions	Year 1	0	£ per dwelling			-
	Year 2	0				-
	Year 3	0				-
	Year 4	0				-
	Year 5	0				-
Biodiversity offset		42,545	£ per gross hectare			(5,445,760)
	Year 7					-
	Year 8					-
	Year 9					-
	Year 10					-
	total	2,560 units @		0 per unit		(5,445,760)
	S106 analysis:	0.59% % of GDV		2,127 £ per unit (total units)		-
AH Commuted Sum		264,141 sqm (total)		£ psm		-
	Comm. Sum analysis:	0.00% % of GDV				-
Construction Costs -						
Site Clearance and Demolition		158.14 acres @		0 £ per acre (if brownfield)		-
Infrastructure costs -	Year 1	30,000	build costs			(76,800,000)
	Year 2					-
	Year 3					-
	Year 4					-
	Year 5					-
	Year 6					-
	Year 7					-
	Year 8					-
	Year 9					-
	Year 10					-
	total	158.14 acres @		per acre		(76,800,000)
	Infra. Costs analysis:	8.31% % of GDV		30,000 £ per unit (total units)		-
1 bed House		-	sqm @	1,191 psm		-
2 bed House		57,600	sqm @	1,191 psm		(68,601,600)
3 bed House		99,328	sqm @	1,191 psm		(118,299,648)
4 bed House		107,213	sqm @	1,191 psm		(127,690,445)
5 bed House		-	sqm @	1,191 psm		-
1 bed Flat		-	sqm @	psm		-
2 bed Flat		264,141	sqm @	psm		-
External works		314,591,693	@	20.0% 24,577 £per unit		(62,918,339)
Category 2 Housing		0% of All units	2,560 units @	521 £ per dwelling		-
Category 3 Housing		0% of All units	2,560 units @	10,307 £ per dwelling		-
Water efficiency			2,560 units @	9 £ per dwelling		(23,040)
Contingency		454,333,071	@	5.0%		(22,716,654)
Professional Fees		454,333,071	@	10.0%		(45,433,307)
Disposal Costs -						
Marketing and Promotion		675,840,000	OMS @	1.50%		(10,137,600)
Residential Sales Agent Costs		675,840,000	OMS @	1.00%		(6,758,400)
Residential Sales Legal Costs		675,840,000	OMS @	0.50%		(3,379,200)
Interest (on Development Costs) -		7.50% APR		0.604% pcm		(1,685,929)
Developers Profit -						
Margin on AH		247,808,000		6.00% on AH values		(14,868,480)
Profit on GDV		675,840,000		20.00%		(135,168,000)
		551,117,620		24.53% on costs	(135,168,000)	
		923,648,000		16.24% blended	(150,036,480)	
TOTAL COSTS						(701,154,100)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **New B**
 Title: **New Settlement B- 2,560 units**
 Notes: **Greenfield**

RESIDUAL LAND VALUE				
Residual Land Value (gross)				222,493,900
SDLT	222,493,900 @		5.0% (slabbed)	(11,114,195)
Acquisition Agent fees	222,493,900 @		1.0%	(2,224,939)
Acquisition Legal fees	222,493,900 @		0.5%	(1,112,470)
Interest on Land	222,493,900 @		7.50%	(16,687,043)
Residual Land Value				191,355,254
<i>RLV analysis:</i>	74,748 £ per plot	2,989,926 £ per ha	1,210,006 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		40.0 dph		
Site Area (Resi)		64.00 ha	158.14 acres	
<i>Density analysis:</i>		4,127 sqm/ha	17,978 sqft/ac	
Threshold Land Value	12,355 £ per plot	494,200 £ per ha	200,000 £ per acre	31,628,800
Gross to net land area	50%			

BALANCE				
Surplus/(Deficit)		2,495,726 £ per ha	1,010,006 £ per acre	159,726,454

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **New B**
 Title: **New Settlement B- 2,560 units**
 Notes: **Greenfield**

SENSITIVITY ANALYSIS								
		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	159,726,454							
		202,816,225	192,043,782	181,271,339	170,498,897	159,726,454	148,954,012	138,181,569
	3,000	194,940,878	184,166,337	173,390,619	162,614,902	151,839,185	141,063,468	130,287,751
	6,000	186,945,683	176,163,084	165,380,486	154,595,375	143,807,910	133,020,444	122,229,934
	9,000	178,833,858	168,036,324	157,236,243	146,435,192	135,627,350	124,818,019	114,001,442
	12,000	170,596,287	159,779,709	148,955,689	138,129,088	127,292,085	116,448,335	105,595,244
	15,000	162,234,770	151,387,012	140,533,606	129,671,654	118,796,544	107,908,405	97,004,834
	18,000	153,738,306	142,857,304	131,964,630	121,057,331	110,132,428	99,186,920	88,217,781
	21,000	145,109,481	134,185,272	123,243,251	112,280,407	101,293,707	90,280,094	79,228,625
	24,000	136,340,636	125,364,215	114,363,803	103,335,015	92,275,999	81,175,097	70,027,152
	27,000	127,425,798	116,388,795	105,320,467	94,215,128	83,067,208	71,867,270	60,602,768
	30,000	118,363,254	107,255,159	96,107,264	84,914,554	73,663,947	62,346,185	50,944,492
	33,000	109,147,320	97,957,413	86,718,049	75,420,715	64,052,712	52,601,028	41,040,936
	36,000	99,772,151	88,489,500	77,146,513	65,731,876	54,228,784	42,620,584	30,877,747
	39,000	90,231,609	78,845,198	67,386,172	55,835,649	44,181,190	32,393,222	20,441,436
	42,000	80,519,261	69,017,471	57,424,177	45,726,726	33,897,092	21,906,887	9,718,523
	45,000	70,630,230	58,996,940	47,258,334	35,390,225	23,367,132	11,149,081	(1,308,301)
48,000	60,556,531	48,779,125	36,876,719	24,820,562	12,579,638	106,550	(12,658,177)	
51,000	50,291,739	38,357,055	26,272,065	14,005,833	1,520,119	(11,241,677)	(24,348,436)	
54,000	39,829,110	27,717,943	15,431,186	2,933,687	(9,825,177)	(22,907,031)	(37,178,711)	
57,000	29,161,580	16,856,539	4,347,256	(8,408,677)	(21,469,043)	(35,445,472)	(51,641,620)	
60,000	18,281,544	5,760,825	(6,992,177)	(20,034,538)	(33,725,332)	(49,819,378)	(66,582,521)	
CIL £ psm	159,726,454							
	£0	202,816,225	192,043,782	181,271,339	170,498,897	159,726,454	148,954,012	138,181,569
	£50	191,821,616	181,738,524	171,655,431	161,572,339	151,489,247	141,406,154	131,323,062
	£100	180,596,527	171,222,285	161,848,044	152,472,206	143,095,264	133,718,322	124,341,380
	£150	169,136,219	160,487,051	151,837,882	143,188,714	134,538,879	125,885,424	117,231,969
	£200	157,426,404	149,525,392	141,622,530	133,716,430	125,810,331	117,902,232	109,990,153
	£250	145,460,777	138,324,920	131,187,359	124,049,798	116,905,945	109,761,480	102,611,124
	£300	133,222,748	126,875,861	120,528,975	114,174,560	107,819,714	101,456,570	95,089,945
	£350	120,701,821	115,168,736	109,630,409	104,088,168	98,538,451	92,983,802	87,420,649
	£400	107,885,488	103,190,352	98,485,788	93,777,209	89,060,222	84,332,740	79,595,058
	£450	94,759,006	90,926,961	87,082,998	83,231,994	79,371,365	75,498,481	71,610,731
	£500	81,307,091	78,364,582	75,409,029	72,443,220	69,464,531	66,470,363	63,458,134
	£550	67,513,898	65,488,299	63,450,389	61,398,599	59,330,340	57,243,043	55,131,833
	£600	53,357,492	52,282,931	51,193,088	50,085,388	48,957,278	47,805,117	46,622,139
	£650	38,823,052	38,732,671	38,622,623	38,490,374	38,333,407	38,146,105	37,923,683
	£700	23,887,951	24,816,786	25,722,891	26,599,858	27,446,348	28,257,228	29,026,321
	£750	8,531,843	10,515,894	12,471,963	14,397,634	16,283,268	18,127,073	19,919,154
£800	(7,275,479)	(4,193,546)	(1,143,527)	1,865,133	4,830,861	7,743,803	10,594,255	
£850	(23,556,390)	(19,333,094)	(15,148,496)	(11,012,051)	(6,929,505)	(2,908,256)	1,040,839	
£900	(41,760,173)	(35,468,958)	(29,565,429)	(24,256,030)	(19,011,285)	(13,840,662)	(8,753,478)	
£950	(61,903,155)	(54,169,388)	(46,501,266)	(38,909,915)	(31,435,969)	(25,067,566)	(18,801,918)	
£1,000	(82,709,205)	(73,468,980)	(64,308,822)	(55,239,600)	(46,272,012)	(37,421,567)	(29,115,259)	
Change in build costs	159,726,454							
	80%	279,003,568	267,942,729	256,881,890	245,821,050	234,760,211	223,699,372	212,638,532
	85%	259,967,431	248,979,887	237,992,343	227,004,798	216,017,254	205,029,167	194,039,165
	90%	240,927,645	230,012,568	219,097,163	208,180,503	197,263,842	186,347,182	175,430,522
	95%	221,877,134	211,032,992	200,188,849	189,344,707	178,500,565	167,656,422	156,812,280
	100%	202,816,225	192,043,782	181,271,339	170,498,897	159,726,454	148,954,012	138,181,569
	105%	183,744,827	173,043,272	162,341,717	151,640,162	140,938,607	130,237,052	119,535,497
	110%	164,659,990	154,028,516	143,397,042	132,765,568	122,134,094	111,502,620	100,871,147
115%	145,558,737	134,996,544	124,434,351	113,872,157	103,309,964	92,746,963	82,182,012	
120%	126,438,069	115,944,362	105,450,655	94,956,366	84,459,039	73,961,712	63,463,404	
Market units sale values	159,726,454							
	80%	82,943,117	79,669,920	76,396,722	73,121,270	69,845,812	66,570,355	63,294,897
	85%	112,966,489	107,813,192	102,659,894	97,506,177	92,351,251	87,196,325	82,041,399
	90%	142,944,546	135,915,232	128,885,919	121,856,606	114,827,293	107,797,979	100,768,666
	95%	172,891,038	163,989,341	155,087,643	146,185,946	137,284,248	128,382,551	119,480,853
	100%	202,816,225	192,043,782	181,271,339	170,498,897	159,726,454	148,954,012	138,181,569
	105%	232,725,850	220,083,941	207,442,031	194,800,122	182,158,212	169,516,303	156,874,394
	110%	262,625,077	248,114,466	233,603,855	219,093,244	204,582,633	190,072,022	175,561,411
115%	292,510,127	276,131,889	259,753,650	243,375,412	226,997,174	210,618,936	194,240,698	
120%	322,392,891	304,147,470	285,902,050	267,656,579	249,410,559	231,164,539	212,918,519	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: **New B**
 Title: **New Settlement B- 2,560 units**
 Notes: **Greenfield**

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	159,726,454								
	80,000	221,793,505	211,021,062	200,248,619	189,476,177	178,703,734	167,931,292	157,158,849	
	100,000	218,630,625	207,858,182	197,085,739	186,313,297	175,540,854	164,768,412	153,995,969	
	120,000	215,467,745	204,695,302	193,922,859	183,150,417	172,377,974	161,605,532	150,833,089	
	TLV (per acre)	140,000	212,304,865	201,532,422	190,759,979	179,987,537	169,215,094	158,442,652	147,670,209
		160,000	209,141,985	198,369,542	187,597,099	176,824,657	166,052,214	155,279,772	144,507,329
		180,000	205,979,105	195,206,662	184,434,219	173,661,777	162,889,334	152,116,892	141,344,449
200,000		202,816,225	192,043,782	181,271,339	170,498,897	159,726,454	148,954,012	138,181,569	
220,000	199,653,345	188,880,902	178,108,459	167,336,017	156,563,574	145,791,132	135,018,689		
240,000	196,490,465	185,718,022	174,945,579	164,173,137	153,400,694	142,628,252	131,855,809		

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	159,726,454								
	10	92,839,070	82,056,472	71,273,874	60,491,276	49,706,011	38,918,546	28,131,081	
	15	141,770,794	130,995,077	120,219,360	109,443,643	98,667,926	87,892,208	77,116,491	
	20	166,205,258	155,431,566	144,657,874	133,884,183	123,110,491	112,336,799	101,563,107	
	Density dph	25	180,854,005	170,081,403	159,308,801	148,536,199	137,763,597	126,990,995	116,218,393
		30	190,619,119	179,846,517	169,073,915	158,301,313	147,528,710	136,756,108	125,983,506
		35	197,589,197	186,816,755	176,044,312	165,271,869	154,499,427	143,726,984	132,954,542
		40	202,816,225	192,043,782	181,271,339	170,498,897	159,726,454	148,954,012	138,181,569
		45	206,881,690	196,109,248	185,336,805	174,564,363	163,791,920	153,019,477	142,247,035
	50	210,134,063	199,361,620	188,589,178	177,816,735	167,044,293	156,271,850	145,499,254	
	55	212,795,095	202,022,652	191,250,210	180,477,741	169,704,534	158,931,326	148,158,118	
60	215,012,622	204,239,877	193,466,670	182,693,462	171,920,254	161,147,046	150,373,839		

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	159,726,454								
	15%	241,564,385	228,370,182	215,175,979	201,981,777	188,787,574	175,593,372	162,399,169	
	16%	233,814,753	221,104,902	208,395,051	195,685,201	182,975,350	170,265,500	157,555,649	
	17%	226,065,121	213,839,622	201,614,123	189,388,625	177,163,126	164,937,628	152,712,129	
	Profit % on GDV	18%	218,315,489	206,574,342	194,833,195	183,092,049	171,350,902	159,609,756	147,868,609
		19%	210,565,857	199,309,062	188,052,267	176,795,473	165,538,678	154,281,884	143,025,089
		20%	202,816,225	192,043,782	181,271,339	170,498,897	159,726,454	148,954,012	138,181,569
		21%	195,066,593	184,778,502	174,490,411	164,202,321	153,914,230	143,626,140	133,338,049
		22%	187,316,961	177,513,222	167,709,483	157,905,745	148,102,006	138,298,268	128,494,529
		23%	179,567,329	170,247,942	160,928,555	151,609,169	142,289,782	132,970,396	123,651,009
		24%	171,817,697	162,982,662	154,147,627	145,312,593	136,477,558	127,642,524	118,807,489
25%		164,068,065	155,717,382	147,366,699	139,016,017	130,665,334	122,314,652	113,963,969	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Greenfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme			50 Units						
AH Policy requirement (% Target)			40%						
AH tenure split %	Affordable Rent:		75%						
	Shared ownership		25%						
	First Homes		0%		0.0% % of total (>10% for HWP (Feb 2017))				
Open Market Sale (OMS) housing			60%						
			100%						
CIL Rate (£ psm)			0.00		£ psm				
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	9.0	30.00%	6.0	30%	15.0			
3 bed House	40.00%	12.0	40.00%	8.0	40%	20.0			
4 bed House	30.00%	9.0	30.00%	6.0	30%	15.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	30.0	100.0%	20.0	100%	50.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %			Gross (GIA) per unit (sqm) (sqft)			
1 bed House		0				0.0 0			
2 bed House	75	807				75.0 807			
3 bed House	97	1,044				97.0 1,044			
4 bed House	150	1,615				150.0 1,615			
5 bed House		0				0.0 0			
1 bed Flat		0	85.0%			0.0 0			
2 bed Flat		0	85.0%			0.0 0			
AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %			Gross (GIA) per unit (sqm) (sqft)			
1 bed House		0				0.0 0			
2 bed House	75	807				75.0 807			
3 bed House	97	1,044				97.0 1,044			
4 bed House	124	1,335				124.0 1,335			
5 bed House		0				0.0 0			
1 bed Flat		0	85.0%			0.0 0			
2 bed Flat		0	85.0%			0.0 0			
Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm) (sqft)				
1 bed House	0	0	0	0	0 0				
2 bed House	675	7,266	450	4,844	1,125 12,109				
3 bed House	1,164	12,529	776	8,353	1,940 20,882				
4 bed House	1,350	14,531	744	8,008	2,094 22,540				
5 bed House	0	0	0	0	0 0				
1 bed Flat	0	0	0	0	0 0				
2 bed Flat	0	0	0	0	0 0				
	3,189	34,326	1,970	21,205	5,159 55,531				
AH % by floor area:		38.19% AH % by floor area due to mix							
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House		#DIV/0!	#DIV/0!	0					
2 bed House	350,000	4,667	434	5,250,000					
3 bed House	425,000	4,381	407	8,500,000					
4 bed House	550,000	3,667	341	8,250,000					
5 bed House		#DIV/0!	#DIV/0!	0					
1 bed Flat		#DIV/0!	#DIV/0!	0					
2 bed Flat		#DIV/0!	#DIV/0!	0					
				22,000,000					
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed House	175,000	2,333	50%	245,000	3,267	70%	0	0	70%
3 bed House	212,500	2,191	50%	297,500	3,067	70%	0	0	70%
4 bed House	275,000	2,218	50%	385,000	3,105	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Greenfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	9.0	@	350,000	3,150,000
3 bed House	12.0	@	425,000	5,100,000
4 bed House	9.0	@	550,000	4,950,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	30.0			13,200,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	4.5	@	175,000	787,500
3 bed House	6.0	@	212,500	1,275,000
4 bed House	4.5	@	275,000	1,237,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	15.0			3,300,000
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	1.5	@	245,000	367,500
3 bed House	2.0	@	297,500	595,000
4 bed House	1.5	@	385,000	577,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	5.0			1,540,000
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential				
	50.0			18,040,000
<i>AH on-site cost analysis:</i>				
			£MV less £GDV	3,960,000
	768 £ psm (total GIA sqm)		79,200 £ per unit (total units)	
Grant				
	50	@	0	-
Total GDV				
				18,040,000

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Greenfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(60,000)
Statutory Planning Fees (Residential)				(19,250)
CIL		3,189 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
Biodiversity offset		42,545	£ per gross hectare	(78,787)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	50 units @	0 per unit	(78,787)
	S106 analysis:	0.44% % of GDV	1,576 £ per unit (total units)	-
AH Commuted Sum		5,159 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		-
Construction Costs -				
Site Clearance and Demolition		4.12 acres @	0 £ per acre (if brownfield)	-
Infrastructure costs -	Year 1	10,000	build costs	(500,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	4.12 acres @	per acre	(500,000)
	Infra. Costs analysis:	2.77% % of GDV	10,000 £ per unit (total units)	-
1 bed House		-	1,191 psm	-
2 bed House		1,125 sqm @	1,191 psm	(1,339,875)
3 bed House		1,940 sqm @	1,191 psm	(2,310,540)
4 bed House		2,094 sqm @	1,191 psm	(2,493,954)
5 bed House		-	1,191 psm	-
1 bed Flat		-	psm	-
2 bed Flat	5,159	-	psm	-
External works		6,144,369 @	20.0% 24,577 £ per unit	(1,228,874)
Category 2 Housing		0% of All units	50 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	50 units @ 10,307 £ per dwelling	-
Water efficiency			50 units @ 9 £ per dwelling	(450)
Contingency		7,873,693 @	5.0%	(393,685)
Professional Fees		7,873,693 @	10.0%	(787,369)
Disposal Costs -				
Marketing and Promotion		13,200,000 OMS @	1.50%	(198,000)
Residential Sales Agent Costs		13,200,000 OMS @	1.00%	(132,000)
Residential Sales Legal Costs		13,200,000 OMS @	0.50%	(66,000)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(88,568)
Developers Profit -				
Margin on AH		4,840,000	6.00% on AH values	(290,400)
Profit on GDV		13,200,000	20.00%	(2,640,000)
		9,697,352	27.22% on costs	(2,640,000)
		18,040,000	16.24% blended	(2,930,400)
TOTAL COSTS				(12,627,752)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Greenfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				5,412,248
SDLT	5,412,248 @		5.0% (slabbed)	(260,112)
Acquisition Agent fees	5,412,248 @		1.0%	(54,122)
Acquisition Legal fees	5,412,248 @		0.5%	(27,061)
Interest on Land	5,412,248 @		7.50%	(405,919)
Residual Land Value				4,665,033
<i>RLV analysis:</i>	93,301 £ per plot	2,799,020 £ per ha		1,132,748 £ per acre

THRESHOLD LAND VALUE				
Residential Density		30.0 dph		
Site Area (Resi)		1.67 ha	4.12 acres	
<i>Density analysis:</i>		3,095 sqm/ha	13,484 sqft/ac	
Threshold Land Value	9,152 £ per plot	274,555 £ per ha	111,111 £ per acre	457,592
Gross to net land area	90%			

BALANCE				
Surplus/(Deficit)		2,524,465 £ per ha	1,021,637 £ per acre	4,207,441

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Greenfield

SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	4,207,441	-	5,023,210	4,819,570	4,615,527	4,411,484	4,207,441	4,003,255	3,798,493
		5,000	4,774,751	4,571,308	4,367,865	4,164,422	3,960,474	3,756,432	3,552,389
		10,000	4,525,951	4,322,848	4,119,406	3,915,963	3,712,520	3,509,077	3,305,422
		15,000	4,275,990	4,073,027	3,870,065	3,667,103	3,464,060	3,260,618	3,057,175
		20,000	4,025,767	3,823,066	3,620,104	3,417,142	3,214,180	3,011,218	2,808,255
		25,000	3,774,294	3,571,693	3,369,091	3,166,490	2,963,888	2,761,256	2,558,294
		30,000	3,522,621	3,320,220	3,117,619	2,915,018	2,712,416	2,509,815	2,307,213
		35,000	3,269,629	3,067,267	2,864,905	2,662,544	2,460,182	2,257,821	2,055,459
		40,000	3,016,564	2,814,275	2,611,913	2,409,551	2,207,190	2,004,828	1,802,466
		45,000	2,762,042	2,559,794	2,357,545	2,155,296	1,953,048	1,750,799	1,548,550
		50,000	2,507,521	2,305,272	2,103,023	1,900,769	1,698,506	1,496,242	1,293,979
		55,000	2,251,499	2,049,236	1,846,972	1,644,709	1,442,446	1,240,182	1,037,919
		60,000	1,995,439	1,793,164	1,590,758	1,388,351	1,185,944	983,538	781,131
	65,000	1,737,962	1,535,556	1,333,149	1,130,743	928,336	725,930	523,523	
	70,000	1,480,354	1,277,882	1,075,203	872,524	669,845	467,166	264,488	
	75,000	1,221,396	1,018,717	816,038	613,359	410,680	208,001	5,322	
	80,000	962,230	759,551	556,872	354,193	151,305	(51,965)	(255,236)	
	85,000	703,065	500,385	297,115	93,844	(109,427)	(312,697)	(527,180)	
	90,000	442,924	239,653	36,383	(166,888)	(370,159)	(594,534)	(831,957)	
	95,000	182,192	(21,079)	(224,349)	(427,833)	(662,121)	(899,544)	(1,136,966)	
	100,000	(78,540)	(281,811)	(492,285)	(729,708)	(967,130)	(1,204,719)	(1,443,579)	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	4,207,441	£0	5,023,210	4,819,570	4,615,527	4,411,484	4,207,441	4,003,255	3,798,493
		£50	4,815,706	4,625,232	4,434,758	4,243,900	4,052,748	3,861,596	3,670,357
		£100	4,608,202	4,430,697	4,253,192	4,075,687	3,898,055	3,719,794	3,541,534
		£150	4,399,598	4,235,778	4,071,626	3,907,090	3,742,555	3,577,993	3,412,623
		£200	4,190,840	4,040,067	3,889,295	3,738,493	3,586,926	3,435,360	3,283,712
		£250	3,981,554	3,844,356	3,706,631	3,568,906	3,431,181	3,292,701	3,154,103
		£300	3,771,534	3,647,690	3,523,846	3,399,290	3,274,612	3,149,934	3,024,413
		£350	3,561,514	3,450,796	3,340,078	3,229,361	3,118,043	3,006,413	2,894,723
		£400	3,350,257	3,253,540	3,156,311	3,058,719	2,961,128	2,862,892	2,764,309
		£450	3,138,967	3,055,456	2,971,945	2,888,078	2,803,613	2,719,148	2,633,835
		£500	2,927,067	2,857,372	2,787,066	2,716,761	2,646,098	2,574,759	2,503,361
		£550	2,714,500	2,658,391	2,602,188	2,545,088	2,487,988	2,430,370	2,372,157
		£600	2,501,933	2,459,110	2,416,286	2,373,415	2,329,520	2,285,626	2,241,895
	£650	2,288,086	2,259,577	2,230,290	2,200,752	2,171,053	2,140,364	2,109,632	
	£700	2,074,234	2,059,091	2,043,948	2,028,041	2,011,789	1,995,103	1,977,620	
	£750	1,859,697	1,858,605	1,856,828	1,855,051	1,852,364	1,849,397	1,845,563	
	£800	1,644,553	1,657,291	1,669,707	1,681,296	1,692,884	1,703,257	1,713,507	
	£850	1,429,306	1,455,593	1,481,777	1,507,541	1,532,495	1,557,117	1,580,721	
	£900	1,212,861	1,253,683	1,293,526	1,333,157	1,372,106	1,410,426	1,447,866	
	£950	996,416	1,050,766	1,105,116	1,158,352	1,211,430	1,263,403	1,315,012	
	£1,000	779,971	847,848	915,726	983,547	1,050,071	1,116,380	1,181,432	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	4,207,441	80%	6,530,279	6,319,920	6,109,561	5,898,639	5,687,460	5,476,282	5,264,899
		85%	6,154,475	5,945,515	5,736,556	5,527,596	5,318,383	5,108,599	4,898,816
		90%	5,777,775	5,570,924	5,363,550	5,155,990	4,948,430	4,740,870	4,532,528
		95%	5,400,694	5,195,247	4,989,800	4,784,353	4,578,223	4,372,062	4,165,901
		100%	5,023,210	4,819,570	4,615,527	4,411,484	4,207,441	4,003,255	3,798,493
		105%	4,644,719	4,442,686	4,240,652	4,038,615	3,835,976	3,633,337	3,430,698
		110%	4,265,808	4,065,605	3,864,980	3,664,356	3,463,732	3,263,108	3,062,041
	115%	3,885,775	3,687,058	3,488,341	3,289,624	3,090,879	2,891,664	2,692,449	
	120%	3,504,822	3,307,905	3,110,989	2,913,837	2,716,535	2,519,233	2,321,931	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	4,207,441	80%	2,675,173	2,619,852	2,563,962	2,507,856	2,451,489	2,394,542	2,337,369
		85%	3,263,599	3,170,779	3,077,959	2,984,547	2,890,976	2,797,260	2,702,866
		90%	3,851,024	3,721,049	3,590,854	3,460,659	3,330,250	3,199,306	3,068,362
		95%	4,437,227	4,270,408	4,103,589	3,936,339	3,768,845	3,601,352	3,433,583
		100%	5,023,210	4,819,570	4,615,527	4,411,484	4,207,441	4,003,255	3,798,493
		105%	5,608,407	5,367,814	5,127,222	4,886,629	4,645,909	4,404,656	4,163,404
		110%	6,193,201	5,916,059	5,638,917	5,361,545	5,083,802	4,806,058	4,528,314
	115%	6,777,996	6,464,304	6,150,164	5,835,929	5,521,694	5,207,459	4,893,225	
	120%	7,362,490	7,011,764	6,661,038	6,310,312	5,959,587	5,608,861	5,257,875	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Greenfield

		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	4,207,441							
	80,000	5,151,335	4,947,695	4,743,652	4,539,609	4,335,566	4,131,380	3,926,619
	100,000	5,068,969	4,865,329	4,661,286	4,457,243	4,253,200	4,049,014	3,844,252
	111,111	5,023,210	4,819,570	4,615,527	4,411,484	4,207,441	4,003,255	3,798,493
	TLV (per acre)	4,986,602	4,782,962	4,578,919	4,374,876	4,170,833	3,966,647	3,761,885
	111,111	4,904,235	4,700,595	4,496,552	4,292,509	4,088,466	3,884,280	3,679,519
	120,000	4,821,869	4,618,229	4,414,186	4,210,143	4,006,100	3,801,914	3,597,152
140,000	4,739,502	4,535,862	4,331,819	4,127,776	3,923,733	3,719,547	3,514,785	
160,000	4,657,135	4,453,495	4,249,452	4,045,409	3,841,366	3,637,180	3,432,419	
180,000	4,574,769	4,371,129	4,167,086	3,963,043	3,759,000	3,554,814	3,350,052	
		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	4,207,441							
	10	3,967,915	3,764,472	3,561,005	3,356,963	3,152,920	2,948,877	2,744,673
	15	4,495,562	4,292,119	4,088,266	3,884,223	3,680,180	3,476,137	3,271,583
	20	4,759,386	4,555,939	4,351,897	4,147,854	3,943,811	3,739,768	3,535,038
	Density dph	4,917,680	4,714,118	4,510,075	4,306,032	4,101,989	3,897,873	3,693,111
	30	5,023,210	4,819,570	4,615,527	4,411,484	4,207,441	4,003,255	3,798,493
	30.0	5,098,588	4,894,893	4,690,850	4,486,807	4,282,764	4,078,528	3,873,766
	35	5,155,122	4,951,385	4,747,342	4,543,299	4,339,256	4,134,982	3,930,221
	40	5,199,093	4,995,323	4,791,280	4,587,237	4,383,195	4,178,892	3,974,130
	45	5,234,269	5,030,474	4,826,431	4,622,388	4,418,345	4,214,019	4,009,257
	50	5,263,050	5,059,234	4,855,191	4,651,148	4,447,105	4,242,759	4,037,998
55	5,287,034	5,083,200	4,879,157	4,675,114	4,471,071	4,266,710	4,061,948	
60								
		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	4,207,441							
	15%	5,780,010	5,529,070	5,277,727	5,026,384	4,775,041	4,523,555	4,271,493
	16%	5,628,650	5,387,170	5,145,287	4,903,404	4,661,521	4,419,495	4,176,893
	17%	5,477,290	5,245,270	5,012,847	4,780,424	4,548,001	4,315,435	4,082,293
	18%	5,325,930	5,103,370	4,880,407	4,657,444	4,434,481	4,211,375	3,987,693
	19%	5,174,570	4,961,470	4,747,967	4,534,464	4,320,961	4,107,315	3,893,093
	20%	5,023,210	4,819,570	4,615,527	4,411,484	4,207,441	4,003,255	3,798,493
	21%	4,871,850	4,677,670	4,483,087	4,288,504	4,093,921	3,899,195	3,703,893
	22%	4,720,490	4,535,770	4,350,647	4,165,524	3,980,401	3,795,135	3,609,293
	23%	4,569,130	4,393,870	4,218,207	4,042,544	3,866,881	3,691,075	3,514,693
	24%	4,417,770	4,251,970	4,085,767	3,919,564	3,753,361	3,587,015	3,420,093
25%	4,266,410	4,110,070	3,953,327	3,796,584	3,639,841	3,482,955	3,325,493	
		AH - % on site 40%						
		20%	25%	30%	35%	40%	45%	50%
Profit % on GDV	20.00%							
	15%	5,780,010	5,529,070	5,277,727	5,026,384	4,775,041	4,523,555	4,271,493
	16%	5,628,650	5,387,170	5,145,287	4,903,404	4,661,521	4,419,495	4,176,893
	17%	5,477,290	5,245,270	5,012,847	4,780,424	4,548,001	4,315,435	4,082,293
	18%	5,325,930	5,103,370	4,880,407	4,657,444	4,434,481	4,211,375	3,987,693
	19%	5,174,570	4,961,470	4,747,967	4,534,464	4,320,961	4,107,315	3,893,093
	20%	5,023,210	4,819,570	4,615,527	4,411,484	4,207,441	4,003,255	3,798,493
	21%	4,871,850	4,677,670	4,483,087	4,288,504	4,093,921	3,899,195	3,703,893
	22%	4,720,490	4,535,770	4,350,647	4,165,524	3,980,401	3,795,135	3,609,293
	23%	4,569,130	4,393,870	4,218,207	4,042,544	3,866,881	3,691,075	3,514,693
	24%	4,417,770	4,251,970	4,085,767	3,919,564	3,753,361	3,587,015	3,420,093
25%	4,266,410	4,110,070	3,953,327	3,796,584	3,639,841	3,482,955	3,325,493	

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Brownfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme	50 Units								
AH Policy requirement (% Target)	40%								
AH tenure split %	Affordable Rent:	75%							
	Shared ownership	25%							
	First Homes	0%							
Open Market Sale (OMS) housing	60%								
	100%								
CIL Rate (£ psm)	0.00 £ psm								
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	9.0	30.00%	6.0	30%	15.0			
3 bed House	40.00%	12.0	40.00%	8.0	40%	20.0			
4 bed House	30.00%	9.0	30.00%	6.0	30%	15.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	30.0	100.0%	20.0	100%	50.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit (sqm) (sqft)					
1 bed House		0		0.0 0					
2 bed House	75	807		75.0 807					
3 bed House	97	1,044		97.0 1,044					
4 bed House	150	1,615		150.0 1,615					
5 bed House		0		0.0 0					
1 bed Flat		0	85.0%	0.0 0					
2 bed Flat		0	85.0%	0.0 0					
AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %	Gross (GIA) per unit (sqm) (sqft)					
1 bed House		0		0.0 0					
2 bed House	75	807		75.0 807					
3 bed House	97	1,044		97.0 1,044					
4 bed House	124	1,335		124.0 1,335					
5 bed House		0		0.0 0					
1 bed Flat		0	85.0%	0.0 0					
2 bed Flat		0	85.0%	0.0 0					
Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm) (sqft)				
1 bed House	0	0	0	0	0 0				
2 bed House	675	7,266	450	4,844	1,125 12,109				
3 bed House	1,164	12,529	776	8,353	1,940 20,882				
4 bed House	1,350	14,531	744	8,008	2,094 22,540				
5 bed House	0	0	0	0	0 0				
1 bed Flat	0	0	0	0	0 0				
2 bed Flat	0	0	0	0	0 0				
	3,189	34,326	1,970	21,205	5,159 55,531				
AH % by floor area: 38.19% AH % by floor area due to mix									
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House		#DIV/0!	#DIV/0!	0					
2 bed House	350,000	4,667	434	5,250,000					
3 bed House	425,000	4,381	407	8,500,000					
4 bed House	550,000	3,667	341	8,250,000					
5 bed House		#DIV/0!	#DIV/0!	0					
1 bed Flat		#DIV/0!	#DIV/0!	0					
2 bed Flat		#DIV/0!	#DIV/0!	0					
				22,000,000					
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed House	175,000	2,333	50%	245,000	3,267	70%	0	0	70%
3 bed House	212,500	2,191	50%	297,500	3,067	70%	0	0	70%
4 bed House	275,000	2,218	50%	385,000	3,105	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Brownfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	9.0	@	350,000	3,150,000
3 bed House	12.0	@	425,000	5,100,000
4 bed House	9.0	@	550,000	4,950,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	30.0			13,200,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	4.5	@	175,000	787,500
3 bed House	6.0	@	212,500	1,275,000
4 bed House	4.5	@	275,000	1,237,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	15.0			3,300,000
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	1.5	@	245,000	367,500
3 bed House	2.0	@	297,500	595,000
4 bed House	1.5	@	385,000	577,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	5.0			1,540,000
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential				
	50.0			18,040,000
<i>AH on-site cost analysis:</i>				
			£MV less £GDV	3,960,000
	768 £ psm (total GIA sqm)		79,200 £ per unit (total units)	
Grant				
	50	@	0	-
Total GDV				
				18,040,000

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Brownfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(60,000)
Statutory Planning Fees (Residential)				(19,250)
CIL		3,189 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	-
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
Biodiversity offset		42,545	£ per gross hectare	(78,787)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	50 units @	0 per unit	(78,787)
	S106 analysis:	0.44% % of GDV	1,576 £ per unit (total units)	-
AH Commuted Sum		5,159 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		-
Construction Costs -				
Site Clearance and Demolition		4.12 acres @	110,000 £ per acre (if brownfield)	(453,017)
Infrastructure costs -	Year 1	10,000	build costs	(500,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	4.12 acres @	110,000 per acre	(953,017)
	Infra. Costs analysis:	5.28% % of GDV	19,060 £ per unit (total units)	-
1 bed House		- sqm @	1,191 psm	-
2 bed House		1,125 sqm @	1,191 psm	(1,339,875)
3 bed House		1,940 sqm @	1,191 psm	(2,310,540)
4 bed House		2,094 sqm @	1,191 psm	(2,493,954)
5 bed House		- sqm @	1,191 psm	-
1 bed Flat		- sqm @	psm	-
2 bed Flat	5,159	- sqm @	psm	-
External works		6,144,369 @	20.0% 24,577 £ per unit	(1,228,874)
Category 2 Housing		0% of All units	50 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	50 units @ 10,307 £ per dwelling	-
Water efficiency			50 units @ 9 £ per dwelling	(450)
Contingency		8,779,726 @	5.0%	(438,986)
Professional Fees		8,779,726 @	10.0%	(877,973)
Disposal Costs -				
Marketing and Promotion		13,200,000 OMS @	1.50%	(198,000)
Residential Sales Agent Costs		13,200,000 OMS @	1.00%	(132,000)
Residential Sales Legal Costs		13,200,000 OMS @	0.50%	(66,000)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(159,301)
Developers Profit -				
Margin on AH		4,840,000	6.00% on AH values	(290,400)
Profit on GDV		13,200,000	20.00%	(2,640,000)
		10,810,023	24.42% on costs	(2,640,000)
		18,040,000	16.24% blended	(2,930,400)
TOTAL COSTS				(13,740,423)

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Brownfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				4,299,577
SDLT	4,299,577 @		5.0% (slabbed)	(204,479)
Acquisition Agent fees	4,299,577 @		1.0%	(42,996)
Acquisition Legal fees	4,299,577 @		0.5%	(21,498)
Interest on Land	4,299,577 @		7.50%	(322,468)
Residual Land Value				3,708,136
<i>RLV analysis:</i>	74,163 £ per plot	2,224,882 £ per ha	900,397 £ per acre	

THRESHOLD LAND VALUE				
Residential Density		30.0 dph		
Site Area (Resi)		1.67 ha	4.12 acres	
<i>Density analysis:</i>		3,095 sqm/ha	13,484 sqft/ac	
Threshold Land Value	43,929 £ per plot	1,317,866 £ per ha	533,333 £ per acre	2,196,443
Gross to net land area	90%			

BALANCE				
Surplus/(Deficit)		907,016 £ per ha	367,064 £ per acre	1,511,693

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 Notes: Brownfield

SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	1,511,693	-	2,323,541	2,120,579	1,917,617	1,714,655	1,511,693	1,308,731	1,105,323
		2,500	2,198,339	1,995,599	1,792,637	1,589,674	1,386,712	1,183,750	980,788
		5,000	2,072,603	1,870,002	1,667,400	1,464,694	1,261,732	1,058,769	855,807
		7,500	1,946,867	1,744,266	1,541,664	1,339,063	1,136,461	933,789	730,827
		10,000	1,821,131	1,618,530	1,415,928	1,213,327	1,010,725	808,124	605,522
		12,500	1,695,120	1,492,758	1,290,192	1,087,590	884,989	682,387	479,786
		15,000	1,568,623	1,366,262	1,163,900	961,538	759,177	556,651	354,050
		17,500	1,442,127	1,239,765	1,037,404	835,042	632,681	430,319	227,957
		20,000	1,315,631	1,113,269	910,908	708,546	506,184	303,823	101,461
		22,500	1,188,872	986,624	784,375	582,050	379,688	177,326	(25,035)
		25,000	1,061,611	859,363	657,114	454,865	252,617	50,368	(151,881)
		27,500	934,351	732,102	529,853	327,604	125,356	(76,893)	(279,142)
		30,000	807,090	604,841	402,592	200,344	(1,905)	(204,154)	(406,402)
		32,500	679,561	477,298	275,034	72,771	(129,493)	(331,756)	(534,019)
		35,000	551,531	349,267	147,004	(55,259)	(257,523)	(459,786)	(662,050)
		37,500	423,501	221,237	18,974	(183,290)	(385,553)	(587,816)	(790,080)
	40,000	295,471	93,207	(109,056)	(311,320)	(513,674)	(716,080)	(918,487)	
	42,500	167,148	(35,258)	(237,665)	(440,071)	(642,478)	(844,884)	(1,047,291)	
	45,000	38,344	(164,062)	(366,469)	(568,875)	(771,282)	(973,688)	(1,176,095)	
	47,500	(90,460)	(292,866)	(495,273)	(697,679)	(900,086)	(1,102,632)	(1,305,311)	
	50,000	(219,264)	(421,670)	(624,178)	(826,857)	(1,029,536)	(1,232,214)	(1,434,893)	
CIL £ psm	1,511,693	£0	2,323,541	2,120,579	1,917,617	1,714,655	1,511,693	1,308,731	1,105,323
		£50	2,114,055	1,924,580	1,734,954	1,545,039	1,355,124	1,165,209	975,295
		£100	1,904,035	1,727,686	1,551,337	1,374,988	1,198,555	1,021,688	844,821
		£150	1,693,731	1,530,792	1,367,569	1,204,347	1,041,124	877,901	714,347
		£200	1,482,441	1,332,902	1,183,363	1,033,705	883,609	733,512	583,416
		£250	1,271,151	1,134,818	998,484	862,151	725,817	589,123	452,153
		£300	1,058,818	936,282	813,606	690,478	567,350	444,222	320,891
		£350	846,251	737,000	627,749	518,499	408,882	298,960	189,038
		£400	633,137	537,718	441,753	345,788	249,823	153,698	56,981
		£450	419,285	337,313	255,341	173,077	90,398	7,718	(75,075)
		£500	205,370	136,827	68,221	(385)	(69,028)	(138,422)	(207,816)
		£550	(9,774)	(64,269)	(118,900)	(174,140)	(229,380)	(284,620)	(340,671)
		£600	(224,919)	(265,967)	(307,015)	(348,063)	(389,769)	(431,643)	(473,525)
		£650	(440,955)	(467,772)	(495,267)	(522,868)	(550,470)	(578,667)	(607,175)
		£700	(657,400)	(670,689)	(683,979)	(697,673)	(711,828)	(725,983)	(740,833)
		£750	(873,845)	(873,607)	(873,368)	(873,130)	(873,187)	(873,895)	(874,603)
	£800	(1,090,291)	(1,076,524)	(1,062,758)	(1,048,992)	(1,035,225)	(1,021,807)	(1,009,069)	
	£850	(1,307,783)	(1,279,690)	(1,252,148)	(1,224,853)	(1,197,559)	(1,170,265)	(1,143,534)	
	£900	(1,525,536)	(1,483,834)	(1,442,132)	(1,400,715)	(1,359,893)	(1,319,071)	(1,278,249)	
	£950	(1,743,290)	(1,687,978)	(1,632,666)	(1,577,354)	(1,522,227)	(1,467,877)	(1,413,527)	
	£1,000	(1,961,044)	(1,892,122)	(1,823,201)	(1,754,279)	(1,685,358)	(1,616,683)	(1,548,806)	
Change in build costs	1,511,693	80%	3,839,664	3,630,005	3,420,346	3,210,687	3,001,028	2,791,024	2,580,665
		85%	3,461,452	3,253,781	3,046,073	2,837,818	2,629,563	2,421,308	2,213,052
		90%	3,082,961	2,876,700	2,670,438	2,464,177	2,257,915	2,051,247	1,844,396
		95%	2,703,574	2,499,197	2,294,766	2,089,914	1,885,062	1,680,210	1,475,358
		100%	2,323,541	2,120,579	1,917,617	1,714,655	1,511,693	1,308,731	1,105,323
		105%	1,942,367	1,741,187	1,540,007	1,338,827	1,137,320	935,773	734,226
		110%	1,560,563	1,360,900	1,161,141	961,382	761,623	561,864	362,105
		115%	1,177,044	978,967	780,889	582,812	384,734	186,657	(11,421)
	120%	792,363	595,856	399,348	202,841	6,333	(190,175)	(386,682)	
Market units sale values	1,511,693	80%	(39,097)	(92,851)	(146,778)	(200,705)	(255,063)	(309,657)	(364,335)
		85%	554,362	462,848	371,312	279,777	188,148	96,007	3,865
		90%	1,145,456	1,016,873	887,911	758,950	629,989	501,022	371,488
		95%	1,734,955	1,569,173	1,403,392	1,237,372	1,071,124	904,876	738,628
		100%	2,323,541	2,120,579	1,917,617	1,714,655	1,511,693	1,308,731	1,105,323
		105%	2,910,966	2,671,290	2,431,614	2,191,763	1,951,696	1,711,629	1,471,562
		110%	3,497,946	3,221,256	2,944,565	2,667,874	2,391,183	2,114,493	1,837,802
		115%	4,083,930	3,770,615	3,457,300	3,143,985	2,830,671	2,517,263	2,203,571
	120%	4,669,913	4,319,974	3,970,034	3,619,792	3,269,551	2,919,309	2,569,068	

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Scheme Ref: Dispersal A
 Title: Dispersal Village A- 50
 Notes: Brownfield

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	1,511,693								
	80,000	4,190,518	3,987,556	3,784,594	3,581,631	3,378,669	3,175,707	2,972,299	
	100,000	4,108,151	3,905,189	3,702,227	3,499,265	3,296,303	3,093,340	2,889,933	
	120,000	4,025,785	3,822,822	3,619,860	3,416,898	3,213,936	3,010,974	2,807,566	
	140,000	3,943,418	3,740,456	3,537,494	3,334,531	3,131,569	2,928,607	2,725,199	
	160,000	3,861,051	3,658,089	3,455,127	3,252,165	3,049,203	2,846,240	2,642,833	
	180,000	3,778,685	3,575,722	3,372,760	3,169,798	2,966,836	2,763,874	2,560,466	
	200,000	3,696,318	3,493,356	3,290,394	3,087,431	2,884,479	2,681,507	2,478,099	
TLV (per acre)									
533,333									
220,000	3,613,951	3,410,989	3,208,027	3,005,065	2,802,103	2,599,140	2,395,733		
240,000	3,531,585	3,328,622	3,125,660	2,922,698	2,719,736	2,516,774	2,313,366		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	1,511,693								
	10	(4,164,048)	(4,366,311)	(4,568,575)	(4,770,958)	(4,973,364)	(5,175,771)	(5,378,177)	
	15	(914,300)	(1,116,662)	(1,319,024)	(1,521,385)	(1,723,747)	(1,926,109)	(2,128,470)	
	20	706,037	503,435	300,834	98,233	(104,369)	(306,970)	(509,572)	
	Density dph								
	25	1,676,860	1,474,259	1,271,537	1,068,574	865,612	662,650	459,688	
	30	2,323,541	2,120,579	1,917,617	1,714,655	1,511,693	1,308,731	1,105,323	
	35	2,785,028	2,582,065	2,379,103	2,176,141	1,972,905	1,769,463	1,566,020	
	40	3,131,142	2,928,180	2,725,218	2,521,871	2,318,428	2,114,985	1,911,542	
	45	3,400,343	3,197,380	2,994,054	2,790,611	2,587,168	2,383,725	2,180,260	
	50	3,615,703	3,412,488	3,209,045	3,005,603	2,802,160	2,598,717	2,394,895	
55	3,791,834	3,588,391	3,384,948	3,181,505	2,978,062	2,774,549	2,570,506		
60	3,938,419	3,734,976	3,531,533	3,328,090	3,124,647	2,920,892	2,716,849		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	1,511,693								
	15%	3,080,341	2,830,079	2,579,817	2,329,555	2,079,293	1,829,031	1,578,323	
	16%	2,928,981	2,688,179	2,447,377	2,206,575	1,965,773	1,724,971	1,483,723	
	17%	2,777,621	2,546,279	2,314,937	2,083,595	1,852,253	1,620,911	1,389,123	
	18%	2,626,261	2,404,379	2,182,497	1,960,615	1,738,733	1,516,851	1,294,523	
	19%	2,474,901	2,262,479	2,050,057	1,837,635	1,625,213	1,412,791	1,199,923	
	20%	2,323,541	2,120,579	1,917,617	1,714,655	1,511,693	1,308,731	1,105,323	
	21%	2,172,181	1,978,679	1,785,177	1,591,675	1,398,173	1,204,671	1,010,723	
	22%	2,020,821	1,836,779	1,652,737	1,468,695	1,284,653	1,100,611	916,123	
	23%	1,869,461	1,694,879	1,520,297	1,345,715	1,171,133	996,551	821,523	
	24%	1,718,101	1,552,979	1,387,857	1,222,735	1,057,613	892,491	726,923	
25%	1,566,741	1,411,079	1,255,417	1,099,755	944,093	788,431	632,323		
Profit % on GDV	20.00%								
	15%	3,080,341	2,830,079	2,579,817	2,329,555	2,079,293	1,829,031	1,578,323	
	16%	2,928,981	2,688,179	2,447,377	2,206,575	1,965,773	1,724,971	1,483,723	
	17%	2,777,621	2,546,279	2,314,937	2,083,595	1,852,253	1,620,911	1,389,123	
	18%	2,626,261	2,404,379	2,182,497	1,960,615	1,738,733	1,516,851	1,294,523	
	19%	2,474,901	2,262,479	2,050,057	1,837,635	1,625,213	1,412,791	1,199,923	
	20%	2,323,541	2,120,579	1,917,617	1,714,655	1,511,693	1,308,731	1,105,323	
	21%	2,172,181	1,978,679	1,785,177	1,591,675	1,398,173	1,204,671	1,010,723	
	22%	2,020,821	1,836,779	1,652,737	1,468,695	1,284,653	1,100,611	916,123	
	23%	1,869,461	1,694,879	1,520,297	1,345,715	1,171,133	996,551	821,523	
	24%	1,718,101	1,552,979	1,387,857	1,222,735	1,057,613	892,491	726,923	
25%	1,566,741	1,411,079	1,255,417	1,099,755	944,093	788,431	632,323		

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Scheme Ref: Dispersal A
 Title: Dispersal Village A- 250
 Notes: Greenfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme			250 Units						
AH Policy requirement (% Target)			40%						
AH tenure split %	Affordable Rent:		75%						
	Shared ownership		25%						
	First Homes		0%		0.0% % of total (>10% for HWP (Feb 2017))				
Open Market Sale (OMS) housing			60%						
			100%						
CIL Rate (£ psm)			0.00		£ psm				
Unit mix -	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	45.0	30.00%	30.0	30%	75.0			
3 bed House	40.00%	60.0	40.00%	40.0	40%	100.0			
4 bed House	30.00%	45.0	30.00%	30.0	30%	75.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	150.0	100.0%	100.0	100%	250.0			
OMS Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %			Gross (GIA) per unit (sqm) (sqft)			
1 bed House	0	0				0.0 0			
2 bed House	75	807				75.0 807			
3 bed House	97	1,044				97.0 1,044			
4 bed House	150	1,615				150.0 1,615			
5 bed House	0	0				0.0 0			
1 bed Flat	0	0	85.0%			0.0 0			
2 bed Flat	0	0	85.0%			0.0 0			
AH Unit Floor areas -	Net area per unit (sqm)	(sqft)	Net to Gross %			Gross (GIA) per unit (sqm) (sqft)			
1 bed House	0	0				0.0 0			
2 bed House	75	807				75.0 807			
3 bed House	97	1,044				97.0 1,044			
4 bed House	124	1,335				124.0 1,335			
5 bed House	0	0				0.0 0			
1 bed Flat	0	0	85.0%			0.0 0			
2 bed Flat	0	0	85.0%			0.0 0			
Total Gross Floor areas -	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm) (sqft)				
1 bed House	0	0	0	0	0 0				
2 bed House	3,375	36,328	2,250	24,219	5,625 60,547				
3 bed House	5,820	62,646	3,880	41,764	9,700 104,410				
4 bed House	6,750	72,656	3,720	40,042	10,470 112,698				
5 bed House	0	0	0	0	0 0				
1 bed Flat	0	0	0	0	0 0				
2 bed Flat	0	0	0	0	0 0				
	15,945	171,631	9,850	106,025	25,795 277,655				
AH % by floor area:		38.19% AH % by floor area due to mix							
Open Market Sales values (£) -	£ OMS (per unit)	£psm	£psf	total MV £ (no AH)					
1 bed House		#DIV/0!	#DIV/0!	0					
2 bed House	350,000	4,667	434	26,250,000					
3 bed House	425,000	4,381	407	42,500,000					
4 bed House	550,000	3,667	341	41,250,000					
5 bed House		#DIV/0!	#DIV/0!	0					
1 bed Flat		#DIV/0!	#DIV/0!	0					
2 bed Flat		#DIV/0!	#DIV/0!	0					
				110,000,000					
Affordable Housing values (£) -	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
2 bed House	175,000	2,333	50%	245,000	3,267	70%	0	0	70%
3 bed House	212,500	2,191	50%	297,500	3,067	70%	0	0	70%
4 bed House	275,000	2,218	50%	385,000	3,105	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	#DIV/0!	#DIV/0!	70%

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Scheme Ref: Dispersal A
 Title: Dispersal Village A- 250
 Notes: Greenfield

GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	45.0	@	350,000	15,750,000
3 bed House	60.0	@	425,000	25,500,000
4 bed House	45.0	@	550,000	24,750,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	150.0			66,000,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	22.5	@	175,000	3,937,500
3 bed House	30.0	@	212,500	6,375,000
4 bed House	22.5	@	275,000	6,187,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	75.0			16,500,000
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	7.5	@	245,000	1,837,500
3 bed House	10.0	@	297,500	2,975,000
4 bed House	7.5	@	385,000	2,887,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	25.0			7,700,000
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential				
	250.0			90,200,000
<i>AH on-site cost analysis:</i>				
	768	£ psm (total GIA sqm)	£MV less £GDV	19,800,000
			79,200	£ per unit (total units)
Grant				
	250	@	0	-
Total GDV				
				90,200,000

200916 Cambridge strategic options residential appraisal v2

Scheme Ref: Dispersal A
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 Notes: Greenfield

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(130,000)
Statutory Planning Fees (Residential)				(42,049)
CIL		15,945 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
	Biodiversity offset	42,545	£ per gross hectare	(405,190)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	250 units @	0 per unit	(405,190)
	S106 analysis:	0.45% % of GDV	1,621 £ per unit (total units)	
AH Commuted Sum		25,795 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		
Construction Costs -				
Site Clearance and Demolition		17.65 acres @	0 £ per acre (if brownfield)	-
Infrastructure costs -	Year 1	10,000	build costs	(2,500,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	17.65 acres @	per acre	(2,500,000)
	Infra. Costs analysis:	2.77% % of GDV	10,000 £ per unit (total units)	
1 bed House		-	1,191 psm	-
2 bed House		5,625 sqm @	1,191 psm	(6,699,375)
3 bed House		9,700 sqm @	1,191 psm	(11,552,700)
4 bed House		10,470 sqm @	1,191 psm	(12,469,770)
5 bed House		-	1,191 psm	-
1 bed Flat		-	psm	-
2 bed Flat	25,795	-	psm	-
External works		30,721,845 @	20.0% 24,577 £ per unit	(6,144,369)
Category 2 Housing		0% of All units	250 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	250 units @ 10,307 £ per dwelling	-
Water efficiency			250 units @ 9 £ per dwelling	(2,250)
Contingency		39,368,464 @	5.0%	(1,968,423)
Professional Fees		39,368,464 @	10.0%	(3,936,846)
Disposal Costs -				
Marketing and Promotion		66,000,000 OMS @	1.50%	(990,000)
Residential Sales Agent Costs		66,000,000 OMS @	1.00%	(660,000)
Residential Sales Legal Costs		66,000,000 OMS @	0.50%	(330,000)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(220,408)
Developers Profit -				
Margin on AH		24,200,000	6.00% on AH values	(1,452,000)
Profit on GDV		66,000,000	20.00%	(13,200,000)
		48,051,381	27.47% on costs	(13,200,000)
		90,200,000	16.24% blended	(14,652,000)
TOTAL COSTS				(62,703,381)

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 Notes: Greenfield

RESIDUAL LAND VALUE				
Residual Land Value (gross)				27,496,619
SDLT	27,496,619 @		5.0% (slabbed)	(1,364,331)
Acquisition Agent fees	27,496,619 @		1.0%	(274,966)
Acquisition Legal fees	27,496,619 @		0.5%	(137,483)
Interest on Land	27,496,619 @		7.50%	(2,062,246)
Residual Land Value				23,657,592
<i>RLV analysis:</i>	94,630 £ per plot	3,312,063 £ per ha		1,340,374 £ per acre

THRESHOLD LAND VALUE				
Residential Density		35.0 dph		
Site Area (Resi)		7.14 ha	17.65 acres	
<i>Density analysis:</i>		3,611 sqm/ha	15,731 sqft/ac	
Threshold Land Value	9,413 £ per plot	329,466 £ per ha	133,333 £ per acre	2,353,327
Gross to net land area	75%			

BALANCE			
Surplus/(Deficit)	2,982,597 £ per ha	1,207,041 £ per acre	21,304,265

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 Notes: Greenfield

SENSITIVITY ANALYSIS										
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	21,304,265	-	25,459,705	24,421,551	23,383,396	22,343,902	21,304,265	20,264,628	19,224,577	
	5,000	24,213,997	23,177,024	22,140,052	21,102,944	20,064,790	19,026,635	17,988,480		
	10,000	22,960,603	21,924,511	20,888,419	19,852,327	18,816,234	17,779,328	16,742,356		
	15,000	21,699,431	20,663,916	19,628,400	18,592,885	17,557,370	16,521,854	15,486,339		
	20,000	20,430,389	19,395,145	18,359,901	17,324,656	16,289,412	15,254,168	14,218,923		
	25,000	19,153,383	18,118,103	17,082,822	16,047,541	15,012,261	13,976,980	12,941,699		
	30,000	17,868,318	16,832,692	15,797,066	14,761,439	13,725,794	12,689,511	11,653,228		
	35,000	16,575,099	15,538,816	14,502,533	13,465,531	12,428,278	11,391,025	10,353,773		
	40,000	15,273,628	14,236,376	13,198,276	12,159,739	11,121,202	10,082,664	9,043,651		
	45,000	13,963,810	12,924,876	11,884,737	10,844,599	9,804,460	8,763,332	7,721,273		
	50,000	12,645,546	11,604,122	10,562,064	9,520,005	8,477,022	7,432,723	6,388,423		
	55,000	11,318,736	10,274,452	9,230,152	8,185,577	7,138,714	6,091,851	5,042,903		
	60,000	9,982,624	8,935,761	7,888,898	6,840,491	5,790,741	4,739,863	3,686,898		
	65,000	8,638,080	7,588,329	6,538,579	5,485,959	4,432,994	3,376,912	2,319,632		
	70,000	7,285,020	6,232,055	5,178,382	4,121,874	3,064,070	2,003,689	940,139		
75,000	5,923,343	4,866,835	3,808,509	2,748,127	1,684,669	618,992	(450,135)			
80,000	4,552,947	3,492,566	2,429,199	1,364,233	295,106	(777,302)	(1,853,584)			
85,000	3,173,729	2,109,142	1,040,346	(30,729)	(1,105,052)	(2,184,271)	(3,418,901)			
90,000	1,785,587	715,844	(358,159)	(1,435,739)	(2,545,476)	(3,808,469)	(5,078,249)			
95,000	388,414	(687,207)	(1,766,426)	(2,933,431)	(4,199,506)	(5,472,013)	(6,752,158)			
100,000	(1,017,894)	(2,099,601)	(3,322,275)	(4,590,543)	(5,865,777)	(7,148,292)	(8,437,103)			
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	21,304,265	£0	25,459,705	24,421,551	23,383,396	22,343,902	21,304,265	20,264,628	19,224,577	
	£50	24,420,011	23,448,276	22,475,566	21,502,256	20,528,947	19,555,619	18,580,437		
	£100	23,375,123	22,469,721	21,563,223	20,656,724	19,750,226	18,842,342	17,933,877		
	£150	22,324,970	21,485,823	20,646,625	19,807,427	18,967,382	18,126,120	17,284,859		
	£200	21,268,520	20,497,117	19,725,714	18,954,220	18,180,653	17,407,086	16,632,489		
	£250	20,206,647	19,503,539	18,800,430	18,095,946	17,390,571	16,685,141	15,977,206		
	£300	19,139,330	18,505,022	17,870,449	17,233,768	16,597,087	15,958,887	15,319,540		
	£350	18,066,497	17,501,500	16,935,111	16,367,631	15,799,961	15,229,707	14,659,259		
	£400	16,988,076	16,492,906	15,995,244	15,497,480	14,998,207	14,497,556	13,995,181		
	£450	15,903,994	15,478,319	15,050,788	14,623,258	14,192,923	13,762,391	13,328,618		
	£500	14,814,176	14,458,453	14,101,680	13,743,949	13,384,057	13,022,831	12,659,532		
	£550	13,718,550	13,433,342	13,147,858	12,860,284	12,571,559	12,280,135	11,987,205		
	£600	12,616,579	12,402,919	12,189,258	11,972,402	11,754,983	11,534,307	11,311,491		
	£650	11,508,407	11,367,112	11,225,034	11,080,247	10,933,865	10,785,300	10,633,150		
	£700	10,394,234	10,325,852	10,255,763	10,183,758	10,108,981	10,032,246	9,952,140		
£750	9,273,984	9,279,067	9,281,552	9,282,878	9,280,278	9,275,462	9,267,547			
£800	8,147,961	8,227,069	8,302,334	8,376,669	8,447,704	8,515,378	8,579,689			
£850	7,016,089	7,168,764	7,318,426	7,465,860	7,611,203	7,751,946	7,889,056			
£900	5,878,293	6,105,085	6,329,763	6,550,890	6,769,646	6,985,119	7,195,605			
£950	4,734,494	5,036,013	5,336,040	5,631,699	5,924,461	6,213,692	6,498,522			
£1,000	3,584,615	3,961,476	4,336,551	4,708,228	5,075,595	5,439,140	5,797,997			
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	21,304,265	80%	32,932,316	31,863,124	30,793,932	29,724,564	28,653,338	27,582,112	26,510,885	
		85%	31,066,818	30,005,259	28,943,011	27,880,762	26,818,514	25,754,833	24,690,540	
		90%	29,198,816	28,145,268	27,091,720	26,036,785	24,981,480	23,926,175	22,870,195	
		95%	27,330,814	26,284,222	25,237,629	24,191,037	23,144,445	22,096,085	21,047,724	
	Change in build costs	100%	25,459,705	24,421,551	23,383,396	22,343,902	21,304,265	20,264,628	19,224,577	
		105%	23,588,180	22,556,994	21,525,808	20,494,622	19,463,436	18,431,404	17,398,723	
		110%	21,713,042	20,690,036	19,667,029	18,644,003	17,619,786	16,595,568	15,571,351	
115%		19,836,616	18,821,520	17,805,615	16,789,592	15,773,568	14,757,545	13,741,521		
120%		17,957,046	16,948,948	15,940,851	14,932,753	13,924,655	12,916,558	11,908,039		
		AH - % on site 40%								
		20%	25%	30%	35%	40%	45%	50%		
Balance (RLV - TLV)	21,304,265	80%	13,755,678	13,452,626	13,148,974	12,844,994	12,539,398	12,233,747	11,926,063	
		85%	16,686,039	16,198,847	15,710,407	15,221,967	14,732,844	14,242,543	13,752,055	
		90%	19,612,792	18,941,508	18,270,096	17,597,177	16,924,258	16,251,142	15,576,367	
		95%	22,537,820	21,682,283	20,826,746	19,971,209	19,115,091	18,257,885	17,400,679	
	Market units sale values	100%	25,459,705	24,421,551	23,383,396	22,343,902	21,304,265	20,264,628	19,224,577	
		105%	28,381,591	27,159,644	25,937,576	24,715,507	23,493,439	22,271,118	21,047,416	
		110%	31,300,611	29,896,112	28,491,612	27,087,113	25,682,226	24,276,240	22,870,255	
115%		34,219,510	32,632,580	31,045,649	29,457,901	27,869,632	26,281,363	24,693,094		
120%		37,138,409	35,368,698	33,598,145	31,827,592	30,057,039	28,286,486	26,515,933		

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Scheme Ref: Dispersal A
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 Notes: Greenfield

		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	21,304,265								
	80,000	26,401,033	25,362,878	24,324,723	23,285,229	22,245,592	21,205,955	20,165,905	
	100,000	26,048,033	25,009,878	23,971,723	22,932,229	21,892,592	20,852,955	19,812,905	
	120,000	25,695,033	24,656,878	23,618,723	22,579,229	21,539,592	20,499,955	19,459,905	
	TLV (per acre)	133,333	25,459,705	24,421,551	23,383,396	22,343,902	21,304,265	20,264,628	19,224,577
		140,000	25,342,033	24,303,878	23,265,723	22,226,229	21,186,592	20,146,955	19,106,905
		160,000	24,989,033	23,950,878	22,912,723	21,873,229	20,833,592	19,793,955	18,753,905
		180,000	24,636,033	23,597,878	22,559,723	21,520,229	20,480,592	19,440,955	18,400,905
		200,000	24,283,033	23,244,878	22,206,723	21,167,229	20,127,592	19,087,955	18,047,905
	220,000	23,930,033	22,891,878	21,853,723	20,814,229	19,774,592	18,734,955	17,694,905	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	21,304,265								
	10	18,674,325	17,637,353	16,599,363	15,561,208	14,523,053	13,484,899	12,445,934	
	15	21,841,554	20,803,399	19,765,245	18,727,090	17,688,768	16,649,131	15,609,494	
	20	23,424,495	22,386,341	21,348,186	20,310,031	19,270,548	18,230,911	17,191,274	
	Density dph	25	24,374,260	23,336,105	22,297,951	21,259,253	20,219,616	19,179,979	18,140,342
		30	25,007,436	23,969,282	22,931,127	21,891,965	20,852,328	19,812,691	18,772,941
		35	25,459,705	24,421,551	23,383,396	22,343,902	21,304,265	20,264,628	19,224,577
		40	25,798,907	24,760,752	23,722,492	22,682,855	21,643,218	20,603,581	19,563,305
		45	26,062,730	25,024,576	23,986,122	22,946,485	21,906,848	20,867,211	19,826,759
	50	26,273,789	25,235,635	24,197,026	23,157,389	22,117,752	21,078,115	20,037,523	
	55	26,446,474	25,408,319	24,369,584	23,329,947	22,290,310	21,250,673	20,209,966	
	60	26,590,377	25,552,223	24,513,382	23,473,745	22,434,108	21,394,471	20,353,669	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	21,304,265								
	15%	29,243,705	27,969,051	26,694,396	25,418,402	24,142,265	22,866,128	21,589,577	
	16%	28,486,905	27,259,551	26,032,196	24,803,502	23,574,665	22,345,828	21,116,577	
	17%	27,730,105	26,550,051	25,369,996	24,188,602	23,007,065	21,825,528	20,643,577	
	Profit % on GDV	18%	26,973,305	25,840,551	24,707,796	23,573,702	22,439,465	21,305,228	20,170,577
		19%	26,216,505	25,131,051	24,045,596	22,958,802	21,871,865	20,784,928	19,697,577
		20%	25,459,705	24,421,551	23,383,396	22,343,902	21,304,265	20,264,628	19,224,577
		21%	24,702,905	23,712,051	22,721,196	21,729,002	20,736,665	19,744,328	18,751,577
		22%	23,946,105	23,002,551	22,058,996	21,114,102	20,169,065	19,224,028	18,278,577
	23%	23,189,305	22,293,051	21,396,796	20,499,202	19,601,465	18,703,728	17,805,577	
	24%	22,432,505	21,583,551	20,734,596	19,884,302	19,033,865	18,183,428	17,332,577	
	25%	21,675,705	20,874,051	20,072,396	19,269,402	18,466,265	17,663,128	16,859,577	

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Scheme Ref: Dispersal A
 Title: Dispersal Village A- 250
 Notes: Greenfield

ASSUMPTIONS - RESIDENTIAL USES									
Total number of units in scheme				250 Units					
AH Policy requirement (% Target)				40%					
AH tenure split %		Affordable Rent:		75%					
		Shared ownership:		25%					
		First Homes:		0%		0.0% % of total (>10% for HWP (Feb 2017))			
Open Market Sale (OMS) housing				60%					
				100%					
CIL Rate (£ psm)				0.00		£ psm			
Unit mix -									
	Mkt Units mix%	MV # units	AH mix%	AH # units	Overall mix%	Total # units			
1 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed House	30.00%	45.0	30.00%	30.0	30%	75.0			
3 bed House	40.00%	60.0	40.00%	40.0	40%	100.0			
4 bed House	30.00%	45.0	30.00%	30.0	30%	75.0			
5 bed House	0.00%	0.0	0.00%	0.0	0%	0.0			
1 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
2 bed Flat	0.00%	0.0	0.00%	0.0	0%	0.0			
Total number of units	100.0%	150.0	100.0%	100.0	100%	250.0			
OMS Unit Floor areas -									
	Net area per unit (sqm)	(sqft)	Net to Gross %		Gross (GIA) per unit (sqm)	(sqft)			
1 bed House		0			0.0	0			
2 bed House	75	807			75.0	807			
3 bed House	97	1,044			97.0	1,044			
4 bed House	150	1,615			150.0	1,615			
5 bed House		0			0.0	0			
1 bed Flat		0	85.0%		0.0	0			
2 bed Flat		0	85.0%		0.0	0			
AH Unit Floor areas -									
	Net area per unit (sqm)	(sqft)	Net to Gross %		Gross (GIA) per unit (sqm)	(sqft)			
1 bed House		0			0.0	0			
2 bed House	75	807			75.0	807			
3 bed House	97	1,044			97.0	1,044			
4 bed House	124	1,335			124.0	1,335			
5 bed House		0			0.0	0			
1 bed Flat		0	85.0%		0.0	0			
2 bed Flat		0	85.0%		0.0	0			
Total Gross Floor areas -									
	Mkt Units GIA (sqm)	(sqft)	AH units GIA (sqm)	(sqft)	Total GIA (all units) (sqm)	(sqft)			
1 bed House	0	0	0	0	0	0			
2 bed House	3,375	36,328	2,250	24,219	5,625	60,547			
3 bed House	5,820	62,646	3,880	41,764	9,700	104,410			
4 bed House	6,750	72,656	3,720	40,042	10,470	112,698			
5 bed House	0	0	0	0	0	0			
1 bed Flat	0	0	0	0	0	0			
2 bed Flat	0	0	0	0	0	0			
	15,945	171,631	9,850	106,025	25,795	277,655			
AH % by floor area:		38.19% AH % by floor area due to mix							
Open Market Sales values (£) -									
	£ OMS (per unit)	£psm	£psf		total MV £ (no AH)				
1 bed House		#DIV/0!	#DIV/0!		0				
2 bed House	350,000	4,667	434		26,250,000				
3 bed House	425,000	4,381	407		42,500,000				
4 bed House	550,000	3,667	341		41,250,000				
5 bed House		#DIV/0!	#DIV/0!		0				
1 bed Flat		#DIV/0!	#DIV/0!		0				
2 bed Flat		#DIV/0!	#DIV/0!		0				
					110,000,000				
Affordable Housing values (£) -									
	Aff. Rent £	£psm	% of MV Shared ownership	£	£psm	% of MV First Homes	£	£psm	% of MV
1 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed House	175,000	2,333	50%	245,000	3,267	70%	0	0	70%
3 bed House	212,500	2,191	50%	297,500	3,067	70%	0	0	70%
4 bed House	275,000	2,218	50%	385,000	3,105	70%	0	0	70%
5 bed House	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
1 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%
2 bed Flat	0	#DIV/0!	50%	0	#DIV/0!	70%	0	#DIV/0!	70%

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GROSS DEVELOPMENT VALUE				
OMS GDV - (part houses due to % mix)				
1 bed House	0.0	@	0	-
2 bed House	45.0	@	350,000	15,750,000
3 bed House	60.0	@	425,000	25,500,000
4 bed House	45.0	@	550,000	24,750,000
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	150.0			66,000,000
Affordable Rent GDV -				
1 bed House	0.0	@	0	-
2 bed House	22.5	@	175,000	3,937,500
3 bed House	30.0	@	212,500	6,375,000
4 bed House	22.5	@	275,000	6,187,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	75.0			16,500,000
LCHO GDV -				
1 bed House	0.0	@	0	-
2 bed House	7.5	@	245,000	1,837,500
3 bed House	10.0	@	297,500	2,975,000
4 bed House	7.5	@	385,000	2,887,500
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	25.0			7,700,000
First Homes GDV -				
1 bed House	0.0	@	0	-
2 bed House	0.0	@	0	-
3 bed House	0.0	@	0	-
4 bed House	0.0	@	0	-
5 bed House	0.0	@	0	-
1 bed Flat	0.0	@	0	-
2 bed Flat	0.0	@	0	-
	0.0			-
Sub-total GDV Residential				
	250.0			90,200,000
<i>AH on-site cost analysis:</i>				
	768 £ psm (total GIA sqm)		£MV less £GDV	19,800,000
			79,200 £ per unit (total units)	
Grant				
	250	@	0	-
Total GDV				
				90,200,000

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DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees, Surveys and reports				(130,000)
Statutory Planning Fees (Residential)				(42,049)
CIL		15,945 sqm	0.00 £ psm	-
	CIL analysis:	0.00% % of GDV	0 £ per unit (total units)	
Site Specific S106 Contributions	Year 1	0	£ per dwelling	-
	Year 2	0		-
	Year 3	0		-
	Year 4	0		-
	Year 5	0		-
	Biodiversity offset	42,545	£ per gross hectare	(405,190)
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	250 units @	0 per unit	(405,190)
	S106 analysis:	0.45% % of GDV	1,621 £ per unit (total units)	
AH Commuted Sum		25,795 sqm (total)	£ psm	-
	Comm. Sum analysis:	0.00% % of GDV		
Construction Costs -				
Site Clearance and Demolition		17.65 acres @	0 £ per acre (if brownfield)	-
Infrastructure costs -	Year 1	10,000	build costs	(2,500,000)
	Year 2			-
	Year 3			-
	Year 4			-
	Year 5			-
	Year 6			-
	Year 7			-
	Year 8			-
	Year 9			-
	Year 10			-
	total	17.65 acres @	110,000 per acre	(4,441,500)
	Infra. Costs analysis:	4.92% % of GDV	17,766 £ per unit (total units)	
1 bed House		- sqm @	1,191 psm	-
2 bed House		5,625 sqm @	1,191 psm	(6,699,375)
3 bed House		9,700 sqm @	1,191 psm	(11,552,700)
4 bed House		10,470 sqm @	1,191 psm	(12,469,770)
5 bed House		- sqm @	1,191 psm	-
1 bed Flat		- sqm @	psm	-
2 bed Flat	25,795	- sqm @	psm	-
External works		30,721,845 @	20.0% 24,577 £ per unit	(6,144,369)
Category 2 Housing		0% of All units	250 units @ 521 £ per dwelling	-
Category 3 Housing		0% of All units	250 units @ 10,307 £ per dwelling	-
Water efficiency			250 units @ 9 £ per dwelling	(2,250)
Contingency		41,309,964 @	5.0%	(2,065,498)
Professional Fees		41,309,964 @	10.0%	(4,130,996)
Disposal Costs -				
Marketing and Promotion		66,000,000 OMS @	1.50%	(990,000)
Residential Sales Agent Costs		66,000,000 OMS @	1.00%	(660,000)
Residential Sales Legal Costs		66,000,000 OMS @	0.50%	(330,000)
Interest (on Development Costs) -		7.50% APR	0.604% pcm	(295,718)
Developers Profit -				
Margin on AH		24,200,000	6.00% on AH values	(1,452,000)
Profit on GDV		66,000,000	20.00%	(13,200,000)
		50,359,416	26.21% on costs (13,200,000)	
		90,200,000	16.24% blended (14,652,000)	
TOTAL COSTS				(65,011,416)

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RESIDUAL LAND VALUE				
Residual Land Value (gross)				25,188,584
SDLT	25,188,584 @		5.0% (slabbed)	(1,248,929)
Acquisition Agent fees	25,188,584 @		1.0%	(251,886)
Acquisition Legal fees	25,188,584 @		0.5%	(125,943)
Interest on Land	25,188,584 @		7.50%	(1,889,144)
Residual Land Value				21,672,682
<i>RLV analysis:</i>	86,691 £ per plot	3,034,175 £ per ha		1,227,914 £ per acre

THRESHOLD LAND VALUE				
Residential Density		35.0 dph		
Site Area (Resi)		7.14 ha	17.65 acres	
<i>Density analysis:</i>		3,611 sqm/ha	15,731 sqft/ac	
Threshold Land Value	45,184 £ per plot	1,581,440 £ per ha	640,000 £ per acre	11,296,000
Gross to net land area	75%			

BALANCE				
Surplus/(Deficit)		1,452,735 £ per ha	587,914 £ per acre	10,376,682

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SENSITIVITY ANALYSIS									
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	10,376,682	-	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366
	2,500	13,902,432	12,865,460	11,828,488	10,791,515	9,754,543	8,717,379	7,679,224	
	5,000	13,275,149	12,239,057	11,202,965	10,166,612	9,129,640	8,092,667	7,055,695	
	7,500	12,646,469	11,610,376	10,574,284	9,538,192	8,502,100	7,466,008	6,429,916	
	10,000	12,014,945	10,979,429	9,943,914	8,908,398	7,872,883	6,837,328	5,801,235	
	12,500	11,382,464	10,346,948	9,311,433	8,275,917	7,240,402	6,204,886	5,169,371	
	15,000	10,746,627	9,711,383	8,676,139	7,640,894	6,605,650	5,570,406	4,535,161	
	17,500	10,110,253	9,074,972	8,039,691	7,004,411	5,969,130	4,933,849	3,898,569	
	20,000	9,470,102	8,434,821	7,399,541	6,364,260	5,328,979	4,293,699	3,258,418	
	22,500	8,829,293	7,793,667	6,758,041	5,722,414	4,686,788	3,651,162	2,615,536	
	25,000	8,185,273	7,149,646	6,114,020	5,078,394	4,042,738	3,006,455	1,970,172	
	27,500	7,539,956	6,503,673	5,467,390	4,431,107	3,394,824	2,358,541	1,322,258	
	30,000	6,892,042	5,855,759	4,819,468	3,782,215	2,744,963	1,707,710	670,457	
	32,500	6,242,143	5,204,891	4,167,638	3,130,385	2,093,133	1,054,611	16,074	
	35,000	5,590,313	4,552,990	3,514,453	2,475,915	1,437,378	398,841	(640,932)	
	37,500	4,935,757	3,897,219	2,858,682	1,819,750	779,611	(260,528)	(1,300,666)	
40,000	4,279,986	3,240,293	2,200,154	1,160,015	119,795	(922,263)	(1,964,322)		
42,500	3,620,697	2,580,558	1,540,190	498,132	(543,927)	(1,586,405)	(2,630,704)		
45,000	2,960,586	1,918,527	876,468	(165,591)	(1,209,840)	(2,254,139)	(3,299,854)		
47,500	2,296,863	1,254,804	211,025	(833,275)	(1,877,899)	(2,924,762)	(3,971,625)		
50,000	1,631,889	587,590	(456,710)	(1,502,807)	(2,549,670)	(3,597,510)	(4,647,261)		
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	10,376,682	£0	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366
		£50	13,482,409	12,511,808	11,540,073	10,568,338	9,596,602	8,624,867	7,651,923
		£100	12,431,970	11,527,478	10,622,649	9,717,820	8,812,990	7,907,260	7,000,761
		£150	11,375,521	10,538,090	9,700,659	8,863,227	8,025,414	7,186,216	6,347,018
		£200	10,313,112	9,543,576	8,774,041	8,004,505	7,233,459	6,462,056	5,690,653
		£250	9,245,007	8,543,870	7,842,733	7,140,951	6,437,843	5,734,735	5,030,372
		£300	8,171,134	7,538,904	6,906,675	6,272,823	5,638,515	5,004,036	4,367,354
		£350	7,091,419	6,528,610	5,965,416	5,400,419	4,835,422	4,269,090	3,701,611
		£400	6,005,787	5,512,918	5,018,853	4,523,683	4,028,514	3,530,865	3,033,101
		£450	4,914,162	4,491,759	4,067,377	3,642,557	3,216,844	2,789,313	2,360,773
		£500	3,816,469	3,464,869	3,110,925	2,756,982	2,401,160	2,044,388	1,685,391
		£550	2,712,631	2,431,965	2,149,431	1,866,898	1,581,526	1,295,860	1,007,135
		£600	1,602,571	1,393,414	1,182,830	971,546	757,886	542,988	325,964
		£650	486,210	349,146	211,056	71,482	(69,813)	(213,380)	(358,630)
		£700	(636,148)	(700,912)	(765,959)	(833,244)	(901,626)	(973,293)	(1,046,899)
		£750	(1,765,007)	(1,756,453)	(1,747,898)	(1,742,692)	(1,738,127)	(1,736,800)	(1,738,193)
	£800	(2,900,264)	(2,817,546)	(2,735,650)	(2,656,541)	(2,579,165)	(2,503,952)	(2,432,558)	
	£850	(4,041,714)	(3,884,264)	(3,728,550)	(3,574,852)	(3,424,077)	(3,275,379)	(3,130,036)	
	£900	(5,189,436)	(4,956,681)	(4,726,544)	(4,497,686)	(4,272,917)	(4,050,506)	(3,831,334)	
	£950	(6,343,511)	(6,034,869)	(5,729,698)	(5,426,006)	(5,125,738)	(4,829,020)	(4,535,827)	
	£1,000	(7,504,018)	(7,118,997)	(6,738,080)	(6,359,034)	(5,982,649)	(5,610,972)	(5,243,164)	
		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	10,376,682	80%	22,010,195	20,942,735	19,874,805	18,805,613	17,736,421	16,667,229	15,596,978
		85%	20,142,193	19,081,689	18,021,186	16,960,682	15,899,388	14,837,139	13,774,891
		90%	18,272,351	17,220,259	16,167,095	15,113,547	14,059,999	13,006,451	11,951,744
		95%	16,400,826	15,355,702	14,310,579	13,265,456	12,219,820	11,173,227	10,126,635
		100%	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366
		105%	12,651,955	11,621,966	10,591,976	9,561,987	8,531,998	7,501,846	6,470,660
		110%	10,773,371	9,751,276	8,729,181	7,707,086	6,684,549	5,661,543	4,638,536
Change in build costs	100%	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366	
	105%	12,651,955	11,621,966	10,591,976	9,561,987	8,531,998	7,501,846	6,470,660	
	110%	10,773,371	9,751,276	8,729,181	7,707,086	6,684,549	5,661,543	4,638,536	
	115%	8,892,583	7,878,113	6,863,608	5,848,512	4,833,416	3,818,320	2,803,223	
	120%	7,008,487	6,001,033	4,993,580	3,986,126	2,978,672	1,971,219	963,765	
			AH - % on site 40%						
			20%	25%	30%	35%	40%	45%	50%
Balance (RLV - TLV)	10,376,682	80%	2,803,643	2,503,450	2,202,528	1,900,678	1,598,827	1,295,205	991,553
		85%	5,740,889	5,255,622	4,769,701	4,282,939	3,796,178	3,308,619	2,820,179
		90%	8,672,986	8,003,115	7,333,243	6,662,472	5,991,188	5,319,904	4,648,016
		95%	11,601,830	10,747,702	9,893,574	9,039,445	8,185,268	7,329,731	6,474,194
		100%	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366
		105%	17,451,186	16,230,414	15,009,641	13,788,869	12,568,096	11,346,746	10,124,678
		110%	20,373,072	18,969,681	17,566,291	16,162,488	14,757,989	13,353,489	11,948,990
Market units sale values	115%	23,294,885	21,707,955	20,121,024	18,534,094	16,947,163	15,360,233	13,773,302	
	120%	26,213,784	24,444,423	22,675,061	20,905,699	19,136,337	17,366,976	15,596,806	

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		AH - % on site 40%							
		20%	25%	30%	35%	40%	45%	50%	
Balance (RLV - TLV)	10,376,682								
	100,000	24,058,336	23,021,363	21,983,991	20,945,837	19,907,682	18,869,527	17,831,366	
	200,000	22,293,336	21,256,363	20,218,991	19,180,837	18,142,682	17,104,527	16,066,366	
	300,000	20,528,336	19,491,363	18,453,991	17,415,837	16,377,682	15,339,527	14,301,366	
	400,000	18,763,336	17,726,363	16,688,991	15,650,837	14,612,682	13,574,527	12,536,366	
	500,000	16,998,336	15,961,363	14,923,991	13,885,837	12,847,682	11,809,527	10,771,366	
	600,000	15,233,336	14,196,363	13,158,991	12,120,837	11,082,682	10,044,527	9,006,366	
	640,000	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366	
TLV (per acre)	400,000	18,763,336	17,726,363	16,688,991	15,650,837	14,612,682	13,574,527	12,536,366	
	500,000	16,998,336	15,961,363	14,923,991	13,885,837	12,847,682	11,809,527	10,771,366	
	600,000	15,233,336	14,196,363	13,158,991	12,120,837	11,082,682	10,044,527	9,006,366	
	640,000	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366	
	700,000	13,468,336	12,431,363	11,393,991	10,355,837	9,317,682	8,279,527	7,241,366	
	800,000	11,703,336	10,666,363	9,628,991	8,590,837	7,552,682	6,514,527	5,476,366	
	AH - % on site 40%								
	Balance (RLV - TLV)	10,376,682							
10		(19,632,484)	(20,667,729)	(21,702,973)	(22,738,217)	(23,773,462)	(24,808,706)	(25,843,950)	
15		(3,681,885)	(4,717,978)	(5,754,070)	(6,790,162)	(7,826,254)	(8,862,346)	(9,898,438)	
20		4,286,913	3,250,821	2,214,729	1,177,225	140,252	(896,720)	(1,933,693)	
Density dph		25	9,066,432	8,029,460	6,992,487	5,955,515	4,918,543	3,880,920	2,842,766
		30	12,251,959	11,214,987	10,178,014	9,140,834	8,102,679	7,064,524	6,026,370
		35	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366
		40	16,233,868	15,196,648	14,158,494	13,120,339	12,082,184	11,044,030	10,004,897
		45	17,561,171	16,523,150	15,484,995	14,446,841	13,408,686	12,370,280	11,330,644
		50	18,622,506	17,584,351	16,546,197	15,508,042	14,469,887	13,430,878	12,391,241
35.0		55	19,490,762	18,452,607	17,414,452	16,376,298	15,338,143	14,298,639	13,259,002
	60	20,214,308	19,176,153	18,137,999	17,099,844	16,061,410	15,021,773	13,982,136	
	AH - % on site 40%								
	Balance (RLV - TLV)	10,376,682							
		15%	18,311,336	17,037,863	15,763,991	14,489,337	13,214,682	11,940,027	10,665,366
		16%	17,554,536	16,328,363	15,101,791	13,874,437	12,647,082	11,419,727	10,192,366
17%		16,797,736	15,618,863	14,439,591	13,259,537	12,079,482	10,899,427	9,719,366	
18%		16,040,936	14,909,363	13,777,391	12,644,637	11,511,882	10,379,127	9,246,366	
19%		15,284,136	14,199,863	13,115,191	12,029,737	10,944,282	9,858,827	8,773,366	
20%		14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366	
21%		13,770,536	12,780,863	11,790,791	10,799,937	9,809,082	8,818,227	7,827,366	
22%		13,013,736	12,071,363	11,128,591	10,185,037	9,241,482	8,297,927	7,354,366	
23%		12,256,936	11,361,863	10,466,391	9,570,137	8,673,882	7,777,627	6,881,366	
24%		11,500,136	10,652,363	9,804,191	8,955,237	8,106,282	7,257,327	6,408,366	
25%	10,743,336	9,942,863	9,141,991	8,340,337	7,538,682	6,737,027	5,935,366		
Profit % on GDV	20.00%								
	15%	18,311,336	17,037,863	15,763,991	14,489,337	13,214,682	11,940,027	10,665,366	
	16%	17,554,536	16,328,363	15,101,791	13,874,437	12,647,082	11,419,727	10,192,366	
	17%	16,797,736	15,618,863	14,439,591	13,259,537	12,079,482	10,899,427	9,719,366	
	18%	16,040,936	14,909,363	13,777,391	12,644,637	11,511,882	10,379,127	9,246,366	
	19%	15,284,136	14,199,863	13,115,191	12,029,737	10,944,282	9,858,827	8,773,366	
	20%	14,527,336	13,490,363	12,452,991	11,414,837	10,376,682	9,338,527	8,300,366	
	21%	13,770,536	12,780,863	11,790,791	10,799,937	9,809,082	8,818,227	7,827,366	
	22%	13,013,736	12,071,363	11,128,591	10,185,037	9,241,482	8,297,927	7,354,366	
	23%	12,256,936	11,361,863	10,466,391	9,570,137	8,673,882	7,777,627	6,881,366	
	24%	11,500,136	10,652,363	9,804,191	8,955,237	8,106,282	7,257,327	6,408,366	
25%	10,743,336	9,942,863	9,141,991	8,340,337	7,538,682	6,737,027	5,935,366		

2004 Cambridge strategic options Commercial appraisals v2 R&D (GF)

SCHEME DETAILS - ASSUMPTIONS					
Science Park (R&D space)		Greenfield			
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Science Park (R&D space)	5,000	53,820	85.0%	5,882.4	63,317
area 2	0	0	85.0%	0.0	0
area 3	0	0	85.0%	0.0	0
area 4	0	0	85.0%	0.0	0
area 5	0	0	85.0%	0.0	0
area 6	0	0	85.0%	0.0	0
total floor area	5,000	53,820	85.0%	5,882	63,317

GROSS DEVELOPMENT VALUE				
	sqft		£ psf	£
Science Park (R&D space)	53,820	@	36.00	1,937,504
area 2	0	@	0.00	-
area 3	0	@	0.00	-
area 4	0	@	0.00	-
area 5	0	@	0.00	-
area 6	0	@	0.00	-
Estimated Gross Rental Value per annum				1,937,504
Yield		@	5.25%	
capitalised rent				36,904,834
/less				
Rent Free / Void allowance	12 months rent			(1,937,504)
Purchasers costs		@	5.76%	(1,904,423)
GDV				33,062,907

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees and reports				(100,000)
Statutory Planning Fees				(32,059)
Combined CIL	5,882 sqm @		0.00 £ psm	-
Site Specific S106/278				-
Construction Costs -				
Demolition and Site Clearance (allowance)	3.63 acres @		0 per acre	-
Science Park (R&D space)	5,882.35 sqm @		2,289.00 psm	(13,464,706)
	5,882.35 sqm @		per unit	-
	- sqm @		£ psm	-
	- sqm @		£ per scheme	-
Biodiversity offset	- sqm @		42.545 £ per gross hectare	(62,566)
	- sqm @		psm	-
External works	13,527,272 @		15%	(2,029,091)
Contingency	15,556,363 @		5%	(777,818)
Professional Fees	16,334,181 @		10%	(1,633,418)
Disposal Costs -				
Letting Agents Costs	1,937,504 ERV @		10.00%	(193,750)
Letting Legal Costs	1,937,504 ERV @		5.00%	(96,875)
Investment Sale Agents Costs	33,062,907 GDV @		1.00%	(330,629)
Investment Sale Legal Costs	33,062,907 GDV @		0.50%	(165,315)
Marketing and Promotion	33,062,907 GDV @		1.00%	(330,629)
Finance Costs -				
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm	(1,454,722)
Developers Profit	27,551,320 @		20.00% on costs	
	33,062,907 @		16.67% on GDV	(5,511,587)
TOTAL COSTS				(26,183,165)

2004 Cambridge strategic options Commercial appraisals v2 R&D (GF)

RESIDUAL LAND VALUE			
Residual Land Value (gross)			6,879,742
SDLT (HMRC % rates)	6,879,742 @		(275,190)
Acquisition Agent fees	6,879,742 @	1%	(68,797)
Acquisition Legal fees	6,879,742 @	0.5%	(34,399)
Interest on Land	6,879,742 @	7.5%	(515,981)
Residual Land Value (net)			5,985,376

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	1.471 ha	3.63 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	247,110 £ per ha	100,000 £ per acre	
Gross to net	14,706	34.00%	363,382

BALANCE	
Surplus/(Deficit)	5,621,993

SENSITIVITY ANALYSIS								
		GDV						
Balance	5,621,993	85%	90%	95%	100%	105%	110%	115%
	0	2,134,414	3,296,940	4,459,467	5,621,993	6,784,520	7,947,046	9,109,573
	100	1,498,650	2,661,177	3,823,703	4,986,230	6,148,756	7,311,283	8,473,809
	200	862,886	2,025,413	3,187,939	4,350,466	5,512,992	6,675,519	7,838,045
	300	227,123	1,389,649	2,552,176	3,714,702	4,877,229	6,039,755	7,202,282
	400	(415,404)	753,885	1,916,412	3,078,939	4,241,465	5,403,992	6,566,518
CIL £psm / Section 106	500	(1,146,167)	118,122	1,280,648	2,443,175	3,605,701	4,768,228	5,930,754
	600	(1,876,930)	(540,692)	644,885	1,807,411	2,969,938	4,132,464	5,294,991
	700	(2,607,692)	(1,271,455)	13,403	1,171,647	2,334,174	3,496,700	4,659,227
	800	(3,338,455)	(2,002,218)	(665,981)	535,884	1,698,410	2,860,937	4,023,463
	900	(4,069,218)	(2,732,981)	(1,396,743)	(96,851)	1,062,647	2,225,173	3,387,700
	1000	(4,799,981)	(3,463,744)	(2,127,506)	(791,269)	426,883	1,589,409	2,751,936
	1100	(5,530,744)	(4,194,507)	(2,858,269)	(1,522,032)	(203,553)	953,646	2,116,172
	1200	(6,261,507)	(4,925,269)	(3,589,032)	(2,252,795)	(916,557)	317,882	1,480,409
		Build costs						
Balance	5,621,993	85%	90%	95%	100%	105%	110%	115%
	0	8,140,727	7,301,149	6,461,571	5,621,993	4,782,415	3,942,838	3,103,260
	100	7,504,963	6,665,385	5,825,807	4,986,230	4,146,652	3,307,074	2,467,496
	200	6,869,199	6,029,622	5,190,044	4,350,466	3,510,888	2,671,310	1,831,732
	300	6,233,436	5,393,858	4,554,280	3,714,702	2,875,124	2,035,547	1,195,969
	400	5,597,672	4,758,094	3,918,516	3,078,939	2,239,361	1,399,783	560,205
CIL £psm / Section 106	500	4,961,908	4,122,330	3,282,753	2,443,175	1,603,597	764,019	(72,250)
	600	4,326,145	3,486,567	2,646,989	1,807,411	967,833	128,255	(763,313)
	700	3,690,381	2,850,803	2,011,225	1,171,647	332,070	(529,044)	(1,494,076)
	800	3,054,617	2,215,039	1,375,462	535,884	(301,636)	(1,259,807)	(2,224,839)
	900	2,418,854	1,579,276	739,698	(96,851)	(1,025,538)	(1,990,570)	(2,955,602)
	1000	1,783,090	943,512	103,934	(791,269)	(1,756,301)	(2,721,333)	(3,686,365)
	1100	1,147,326	307,748	(557,000)	(1,522,032)	(2,487,064)	(3,452,096)	(4,417,128)
	1200	511,562	(326,796)	(1,287,763)	(2,252,795)	(3,217,827)	(4,182,859)	(5,147,891)

2004 Cambridge strategic options Commercial appraisals v2 R&D (BF)

SCHEME DETAILS - ASSUMPTIONS					
Science Park (R&D space)		Brownfield			
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Science Park (R&D space)	5,000	53,820	85.0%	5,882.4	63,317
area 2	0	0	85.0%	0.0	0
area 3	0	0	85.0%	0.0	0
area 4	0	0	85.0%	0.0	0
area 5	0	0	85.0%	0.0	0
area 6	0	0	85.0%	0.0	0
total floor area	5,000	53,820	85.0%	5,882	63,317

GROSS DEVELOPMENT VALUE				
	sqft	@	£ psf	£
Science Park (R&D space)	53,820	@	36.00	1,937,504
area 2	0	@	0.00	-
area 3	0	@	0.00	-
area 4	0	@	0.00	-
area 5	0	@	0.00	-
area 6	0	@	0.00	-
Estimated Gross Rental Value per annum				1,937,504
Yield		@	5.25%	
capitalised rent				36,904,834
/less				
Rent Free / Void allowance	12 months rent			(1,937,504)
Purchasers costs		@	5.76%	(1,904,423)
GDV				33,062,907

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees and reports				(100,000)
Statutory Planning Fees				(32,059)
Combined CIL	5,882 sqm @		0.00 £ psm	-
Site Specific S106/278				-
Construction Costs -				
Demolition and Site Clearance (allowance)	3.63 acres @		110,000 per acre	(399,721)
Science Park (R&D space)	5,882.35 sqm @		2,289.00 psm	(13,464,706)
	5,882.35 sqm @		per unit	-
	- sqm @		£ psm	-
	- sqm @		£ per scheme	-
Biodiversity offset	- sqm @		42.545 £ per gross hectare	(62,566)
	- sqm @		psm	-
External works	13,527,272 @		15%	(2,029,091)
Contingency	15,956,083 @		5%	(797,804)
Professional Fees	16,753,888 @		10%	(1,675,389)
Disposal Costs -				
Letting Agents Costs	1,937,504 ERV @		10.00%	(193,750)
Letting Legal Costs	1,937,504 ERV @		5.00%	(96,875)
Investment Sale Agents Costs	33,062,907 GDV @		1.00%	(330,629)
Investment Sale Legal Costs	33,062,907 GDV @		0.50%	(165,315)
Marketing and Promotion	33,062,907 GDV @		1.00%	(330,629)
Finance Costs -				
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm	(1,540,393)
Developers Profit	27,551,320 @		20.00% on costs	
	33,062,907 @		16.67% on GDV	(5,511,587)
TOTAL COSTS				(26,730,513)

2004 Cambridge strategic options Commercial appraisals v2 R&D (BF)

RESIDUAL LAND VALUE			
Residual Land Value (gross)			6,332,394
SDLT (HMRC % rates)	6,332,394 @		(253,296)
Acquisition Agent fees	6,332,394 @	1%	(63,324)
Acquisition Legal fees	6,332,394 @	0.5%	(31,662)
Interest on Land	6,332,394 @	7.5%	(474,930)
Residual Land Value (net)			5,509,183

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	1.471 ha	3.63 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	1,186,128 £ per ha	480,000 £ per acre	
Gross to net	14,706	34.00%	1,744,235

BALANCE	
Surplus/(Deficit)	3,764,947

SENSITIVITY ANALYSIS								
		GDV						
Balance		85%	90%	95%	100%	105%	110%	115%
	0	277,368	1,439,894	2,602,421	3,764,947	4,927,474	6,090,001	7,252,527
	100	(358,396)	804,131	1,966,657	3,129,184	4,291,710	5,454,237	6,616,763
	200	(994,160)	168,367	1,330,894	2,493,420	3,655,947	4,818,473	5,981,000
	300	(1,625,981)	(467,397)	695,130	1,857,656	3,020,183	4,182,709	5,345,236
	400	(2,343,605)	(1,103,160)	59,366	1,221,893	2,384,419	3,546,946	4,709,472
CIL £psm / Section 106	500	(3,074,368)	(1,738,741)	(576,398)	586,129	1,748,656	2,911,182	4,073,709
	600	(3,805,131)	(2,468,893)	(1,212,161)	(49,635)	1,112,892	2,275,418	3,437,945
	700	(4,535,894)	(3,199,656)	(1,863,419)	(685,398)	477,128	1,639,655	2,802,181
	800	(5,266,656)	(3,930,419)	(2,594,182)	(1,316,299)	(158,636)	1,003,891	2,166,417
	900	(5,997,419)	(4,661,182)	(3,324,945)	(1,988,707)	(794,399)	368,127	1,530,654
	1000	(6,728,182)	(5,391,945)	(4,055,707)	(2,719,470)	(1,426,553)	(267,636)	894,890
	1100	(7,458,945)	(6,122,708)	(4,786,470)	(3,450,233)	(2,113,995)	(903,400)	259,126
	1200	(8,189,708)	(6,853,471)	(5,517,233)	(4,180,996)	(2,844,758)	(1,532,092)	(376,637)
Balance		Build costs						
Balance		85%	90%	95%	100%	105%	110%	115%
	0	6,283,681	5,444,103	4,604,525	3,764,947	2,925,370	2,085,792	1,246,214
	100	5,647,917	4,808,339	3,968,762	3,129,184	2,289,606	1,450,028	610,450
	200	5,012,154	4,172,576	3,332,998	2,493,420	1,653,842	814,264	(25,313)
	300	4,376,390	3,536,812	2,697,234	1,857,656	1,018,079	178,501	(661,077)
	400	3,740,626	2,901,048	2,061,471	1,221,893	382,315	(457,263)	(1,296,841)
CIL £psm / Section 106	500	3,104,862	2,265,285	1,425,707	586,129	(253,449)	(1,093,027)	(1,960,752)
	600	2,469,099	1,629,521	789,943	(49,635)	(889,213)	(1,728,258)	(2,691,514)
	700	1,833,335	993,757	154,179	(685,398)	(1,522,456)	(2,457,245)	(3,422,277)
	800	1,197,571	357,994	(481,584)	(1,316,299)	(2,222,976)	(3,188,008)	(4,153,040)
	900	561,808	(277,770)	(1,117,348)	(1,988,707)	(2,953,739)	(3,918,771)	(4,883,803)
	1000	(73,956)	(913,534)	(1,754,438)	(2,719,470)	(3,684,502)	(4,649,534)	(5,614,566)
	1100	(709,720)	(1,542,576)	(2,485,201)	(3,450,233)	(4,415,265)	(5,380,297)	(6,345,329)
	1200	(1,340,900)	(2,250,932)	(3,215,964)	(4,180,996)	(5,146,028)	(6,111,060)	(7,076,092)

2004 Cambridge strategic options Commercial appraisals v2

Office TC (BF)

SCHEME DETAILS - ASSUMPTIONS					
Cambridge TC Office		Brownfield			
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Cambridge TC Office	5,000	53,820	85.0%	5,882.4	63,317
area 2	0	0	85.0%	0.0	0
area 3	0	0	85.0%	0.0	0
area 4	0	0	85.0%	0.0	0
area 5	0	0	85.0%	0.0	0
area 6	0	0	85.0%	0.0	0
total floor area	5,000	53,820	85.0%	5,882	63,317

GROSS DEVELOPMENT VALUE					
	sqft	@	£ psf	£	
Cambridge TC Office	53,820	@	46.00	2,475,699	
area 2	0	@	0.00	-	
area 3	0	@	0.00	-	
area 4	0	@	0.00	-	
area 5	0	@	0.00	-	
area 6	0	@	0.00	-	
Estimated Gross Rental Value per annum				2,475,699	
Yield		@	5.00%		
capitalised rent				49,513,986	
/less					
Rent Free / Void allowance		12 months rent		(2,475,699)	
Purchasers costs		@	5.76%	(2,561,843)	44,476,444
GDV					44,476,444

DEVELOPMENT COSTS					
Initial Payments -					
Planning Application Professional Fees and reports					(100,000)
Statutory Planning Fees					(32,059)
Combined CIL	5,882 sqm @		0.00 £ psm		-
Site Specific S106/278					-
Construction Costs -					
Demolition and Site Clearance (allowance)	2.08 acres @		110,000 per acre		(228,412)
Cambridge TC Office	5,882.35 sqm @		1,912.00 psm		(11,247,059)
	5,882.35 sqm @		per unit		-
	- sqm @		£ psm		-
	- sqm @		£ per scheme		-
Biodiversity offset	- sqm @		42.545 £ per gross hectare		(35,752)
	- sqm @		psm		-
External works	11,282,811 @		15%		(1,692,422)
Contingency	13,203,644 @		5%		(660,182)
Professional Fees	13,863,827 @		10%		(1,386,383)
Disposal Costs -					
Letting Agents Costs	2,475,699 ERV @		10.00%		(247,570)
Letting Legal Costs	2,475,699 ERV @		5.00%		(123,785)
Investment Sale Agents Costs	44,476,444 GDV @		1.00%		(444,764)
Investment Sale Legal Costs	44,476,444 GDV @		0.50%		(222,382)
Marketing and Promotion	44,476,444 GDV @		1.00%		(444,764)
Finance Costs -					
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm		(1,267,617)
Developers Profit	37,062,220 @		20.00%	on costs	
	44,476,444 @		16.67%	on GDV	(7,414,223)
TOTAL COSTS					(25,547,374)

2004 Cambridge strategic options Commercial appraisals v2
Office TC (BF)

RESIDUAL LAND VALUE			
Residual Land Value (gross)			18,929,070
SDLT (HMRC % rates)	18,929,070 @		(757,163)
Acquisition Agent fees	18,929,070 @	1%	(189,291)
Acquisition Legal fees	18,929,070 @	0.5%	(94,645)
Interest on Land	18,929,070 @	7.5%	(1,419,680)
Residual Land Value (net)			16,468,291

THRESHOLD LAND VALUE			
Site density	7,000 sqm per hectare		
Site Area	0.840 ha	2.08 acres	
	7,000 sqm/ha	30,493 sqft/ac	
Threshold Land Value	1,186,128 £ per ha	480,000 £ per acre	
Gross to net	8,403	59.50%	996,706

BALANCE	
Surplus/(Deficit)	15,471,585

SENSITIVITY ANALYSIS									
		GDV							
Balance		15,471,585	85%	90%	95%	100%	105%	110%	115%
		0	10,780,069	12,343,908	13,907,746	15,471,585	17,035,423	18,599,262	20,163,100
		250	9,190,660	10,754,499	12,318,337	13,882,175	15,446,014	17,009,852	18,573,691
		500	7,601,251	9,165,089	10,728,928	12,292,766	13,856,605	15,420,443	16,984,282
		750	6,011,842	7,575,680	9,139,519	10,703,357	12,267,195	13,831,034	15,394,872
		1000	4,422,432	5,986,271	7,550,109	9,113,948	10,677,786	12,241,625	13,805,463
CIL £psm / Section 106		1250	2,833,023	4,396,862	5,960,700	7,524,539	9,088,377	10,652,215	12,216,054
		1500	1,243,614	2,807,452	4,371,291	5,935,129	7,498,968	9,062,806	10,626,645
		1750	(345,795)	1,218,043	2,781,882	4,345,720	5,909,558	7,473,397	9,037,235
		2000	(2,075,440)	(371,366)	1,192,472	2,756,311	4,320,149	5,883,988	7,447,826
		2250	(3,902,347)	(2,104,832)	(396,937)	1,166,902	2,730,740	4,294,578	5,858,417
		2500	(5,729,254)	(3,931,739)	(2,134,223)	(422,508)	1,141,331	2,705,169	4,269,008
		2750	(7,556,162)	(5,758,646)	(3,961,131)	(2,163,615)	(448,078)	1,115,760	2,679,598
		3000	(9,383,069)	(7,585,553)	(5,788,038)	(3,990,522)	(2,193,007)	(473,649)	1,090,189
		Build costs							
Balance		15,471,585	85%	90%	95%	100%	105%	110%	115%
		0	17,575,481	16,874,182	16,172,883	15,471,585	14,770,286	14,068,987	13,367,688
		250	15,986,072	15,284,773	14,583,474	13,882,175	13,180,877	12,479,578	11,778,279
		500	14,396,662	13,695,364	12,994,065	12,292,766	11,591,467	10,890,169	10,188,870
		750	12,807,253	12,105,954	11,404,656	10,703,357	10,002,058	9,300,760	8,599,461
		1000	11,217,844	10,516,545	9,815,246	9,113,948	8,412,649	7,711,350	7,010,052
CIL £psm / Section 106		1250	9,628,435	8,927,136	8,225,837	7,524,539	6,823,240	6,121,941	5,420,642
		1500	8,039,025	7,337,727	6,636,428	5,935,129	5,233,831	4,532,532	3,831,233
		1750	6,449,616	5,748,318	5,047,019	4,345,720	3,644,421	2,943,123	2,241,824
		2000	4,860,207	4,158,908	3,457,610	2,756,311	2,055,012	1,353,713	652,415
		2250	3,270,798	2,569,499	1,868,200	1,166,902	465,603	(235,696)	(934,936)
		2500	1,681,389	980,090	278,791	(422,508)	(1,142,798)	(1,948,889)	(2,754,979)
		2750	91,979	(604,867)	(1,357,525)	(2,163,615)	(2,969,706)	(3,775,796)	(4,581,887)
		3000	(1,572,251)	(2,378,341)	(3,184,432)	(3,990,522)	(4,796,613)	(5,602,703)	(6,408,794)

2004 Cambridge strategic options Commercial appraisals v2 Office Fringe (GF)

SCHEME DETAILS - ASSUMPTIONS					
Cambridge fringe office park		Greenfield			
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Cambridge fringe office park	2,000	21,528	85.0%	2,352.9	25,327
area 2	0	0	85.0%	0.0	0
area 3	0	0	85.0%	0.0	0
area 4	0	0	85.0%	0.0	0
area 5	0	0	85.0%	0.0	0
area 6	0	0	85.0%	0.0	0
total floor area	2,000	21,528	85.0%	2,353	25,327

GROSS DEVELOPMENT VALUE				
	sqft	@	£ psf	£
Cambridge fringe office park	21,528	@	36.00	775,002
area 2	0	@	0.00	-
area 3	0	@	0.00	-
area 4	0	@	0.00	-
area 5	0	@	0.00	-
area 6	0	@	0.00	-
Estimated Gross Rental Value per annum				775,002
Yield		@	5.50%	
capitalised rent				14,090,937
less				(775,002)
Rent Free / Void allowance	12 months rent			(775,002)
Purchasers costs		@	5.76%	(725,225)
GDV				12,590,710

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees and reports				(40,000)
Statutory Planning Fees				(12,320)
Combined CIL	2,353 sqm @		0.00 £ psm	-
Site Specific S106/278				-
Construction Costs -				
Demolition and Site Clearance (allowance)	1.45 acres @		0 per acre	-
Cambridge fringe office park	2,352.94 sqm @		1,912.00 psm	(4,498,824)
	2,352.94 sqm @		per unit	-
	- sqm @		£ psm	-
	- sqm @		£ per scheme	-
Biodiversity offset	- sqm @		42.545 £ per gross hectare	(25,026)
	- sqm @		psm	-
External works	4,523,850 @		15%	(678,578)
Contingency	5,202,428 @		5%	(260,121)
Professional Fees	5,462,549 @		10%	(546,255)
Disposal Costs -				
Letting Agents Costs	775,002 ERV @		10.00%	(77,500)
Letting Legal Costs	775,002 ERV @		5.00%	(38,750)
Investment Sale Agents Costs	12,590,710 GDV @		1.00%	(125,907)
Investment Sale Legal Costs	12,590,710 GDV @		0.50%	(62,954)
Marketing and Promotion	12,590,710 GDV @		1.00%	(125,907)
Finance Costs -				
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm	(367,546)
Developers Profit				
	10,491,839 @		20.00%	on costs
	12,590,710 @		16.67%	on GDV
TOTAL COSTS				(8,958,559)

2004 Cambridge strategic options Commercial appraisals v2
Office Fringe (GF)

RESIDUAL LAND VALUE			
Residual Land Value (gross)			3,632,151
SDLT (HMRC % rates)	3,632,151 @		(145,286)
Acquisition Agent fees	3,632,151 @	1%	(36,322)
Acquisition Legal fees	3,632,151 @	0.5%	(18,161)
Interest on Land	3,632,151 @	7.5%	(272,411)
Residual Land Value (net)			3,159,972

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	0.588 ha	1.45 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	247,110 £ per ha	100,000 £ per acre	
Gross to net	5,882	34.00%	145,353

BALANCE	
Surplus/(Deficit)	3,014,619

SENSITIVITY ANALYSIS									
		GDV							
Balance		3,014,619	85%	90%	95%	100%	105%	110%	115%
	0		1,686,511	2,129,214	2,571,916	3,014,619	3,457,321	3,900,024	4,342,727
	150		1,318,600	1,761,303	2,204,005	2,646,708	3,089,410	3,532,113	3,974,816
	300		950,689	1,393,392	1,836,094	2,278,797	2,721,499	3,164,202	3,606,905
	450		582,778	1,025,481	1,468,183	1,910,886	2,353,588	2,796,291	3,238,994
	600		219,008	657,570	1,100,272	1,542,975	1,985,677	2,428,380	2,871,083
CIL £psm / Section 106	750	(154,193)	289,659	732,361	1,175,064	1,617,766	2,060,469	2,503,172	2,945,875
	900	(577,079)	(75,938)	364,450	807,153	1,249,856	1,692,558	2,135,261	2,577,964
	1050	(999,965)	(491,112)	1,432	439,242	881,945	1,324,647	1,767,350	2,210,647
	1200	(1,422,852)	(913,998)	(405,145)	78,803	514,034	956,736	1,399,439	1,872,528
	1350	(1,845,738)	(1,336,884)	(828,031)	(319,177)	149,473	588,825	1,031,528	1,563,617
	1500	(2,268,624)	(1,759,770)	(1,250,917)	(742,063)	(233,210)	225,124	663,617	1,295,706
	1650	(2,691,510)	(2,182,657)	(1,673,803)	(1,164,949)	(656,096)	(147,242)	295,706	863,617
	1800	(3,114,396)	(2,605,543)	(2,096,689)	(1,587,836)	(1,078,982)	(570,129)	(69,683)	1,295,706
Balance		3,014,619	85%	90%	95%	100%	105%	110%	115%
	0		3,840,783	3,565,395	3,290,007	3,014,619	2,739,231	2,463,842	2,188,454
	150		3,472,872	3,197,484	2,922,096	2,646,708	2,371,320	2,095,931	1,820,543
	300		3,104,961	2,829,573	2,554,185	2,278,797	2,003,409	1,728,020	1,452,632
	450		2,737,050	2,461,662	2,186,274	1,910,886	1,635,498	1,360,109	1,084,721
	600		2,369,140	2,093,751	1,818,363	1,542,975	1,267,587	992,198	716,810
CIL £psm / Section 106	750	2,001,229	1,725,840	1,450,452	1,175,064	899,676	624,287	348,899	71,810
	900	1,633,318	1,357,929	1,082,541	807,153	531,765	260,994	(14,655)	(146,655)
	1050	1,265,407	990,018	714,630	439,242	167,408	(110,368)	(423,019)	(845,905)
	1200	897,496	622,107	346,719	78,803	(212,829)	(529,367)	(845,905)	(1,268,792)
	1350	529,585	258,789	(16,910)	(319,177)	(635,715)	(952,253)	(1,268,792)	(1,691,678)
	1500	165,203	(112,624)	(425,525)	(742,063)	(1,058,601)	(1,375,140)	(1,691,678)	(2,114,564)
	1650	(215,335)	(531,873)	(848,411)	(1,164,949)	(1,481,488)	(1,798,026)	(2,114,564)	(2,537,450)
	1800	(638,221)	(954,759)	(1,271,297)	(1,587,836)	(1,904,374)	(2,220,912)	(2,537,450)	

2004 Cambridge strategic options Commercial appraisals v2
Office Fringe (BF)

SCHEME DETAILS - ASSUMPTIONS					
Cambridge fringe office park		Brownfield			
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Cambridge fringe office park	2,000	21,528	85.0%	2,352.9	25,327
area 2	0	0	85.0%	0.0	0
area 3	0	0	85.0%	0.0	0
area 4	0	0	85.0%	0.0	0
area 5	0	0	85.0%	0.0	0
area 6	0	0	85.0%	0.0	0
total floor area	2,000	21,528	85.0%	2,353	25,327

GROSS DEVELOPMENT VALUE				
	sqft	@	£ psf	£
Cambridge fringe office park	21,528	@	36.00	775,002
area 2	0	@	0.00	-
area 3	0	@	0.00	-
area 4	0	@	0.00	-
area 5	0	@	0.00	-
area 6	0	@	0.00	-
Estimated Gross Rental Value per annum				775,002
Yield		@	5.50%	
capitalised rent				14,090,937
less				(775,002)
Rent Free / Void allowance	12 months rent			(775,002)
Purchasers costs		@	5.76%	(725,225)
				12,590,710
GDV				12,590,710

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees and reports				(40,000)
Statutory Planning Fees				(12,320)
Combined CIL	2,353 sqm @		0.00 £ psm	-
Site Specific S106/278				-
Construction Costs -				
Demolition and Site Clearance (allowance)	1.45 acres @		110,000 per acre	(159,888)
Cambridge fringe office park	2,352.94 sqm @		1,912.00 psm	(4,498,824)
	2,352.94 sqm @		per unit	-
	- sqm @		£ psm	-
	- sqm @		£ per scheme	-
Biodiversity offset	- sqm @		42.545 £ per gross hectare	(25,026)
	- sqm @		psm	-
External works	4,523,850 @		15%	(678,578)
Contingency	5,362,316 @		5%	(268,116)
Professional Fees	5,630,432 @		10%	(563,043)
Disposal Costs -				
Letting Agents Costs	775,002 ERV @		10.00%	(77,500)
Letting Legal Costs	775,002 ERV @		5.00%	(38,750)
Investment Sale Agents Costs	12,590,710 GDV @		1.00%	(125,907)
Investment Sale Legal Costs	12,590,710 GDV @		0.50%	(62,954)
Marketing and Promotion	12,590,710 GDV @		1.00%	(125,907)
Finance Costs -				
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm	(394,499)
Developers Profit				
	10,491,839 @		20.00% on costs	
	12,590,710 @		16.67% on GDV	(2,098,871)
TOTAL COSTS				(9,170,183)

2004 Cambridge strategic options Commercial appraisals v2
Office Fringe (BF)

RESIDUAL LAND VALUE			
Residual Land Value (gross)			3,420,527
SDLT (HMRC % rates)	3,420,527 @		(136,821)
Acquisition Agent fees	3,420,527 @	1%	(34,205)
Acquisition Legal fees	3,420,527 @	0.5%	(17,103)
Interest on Land	3,420,527 @	7.5%	(256,540)
Residual Land Value (net)			2,975,858

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	0.588 ha	1.45 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	1,186,128 £ per ha	480,000 £ per acre	
Gross to net	5,882	34.00%	697,694

BALANCE	
Surplus/(Deficit)	2,278,164

SENSITIVITY ANALYSIS									
		GDV							
Balance		2,278,164	85%	90%	95%	100%	105%	110%	115%
	0		950,057	1,392,759	1,835,462	2,278,164	2,720,867	3,163,570	3,606,272
	100		704,783	1,147,485	1,590,188	2,032,890	2,475,593	2,918,296	3,360,998
	200		459,509	902,211	1,344,914	1,787,616	2,230,319	2,673,022	3,115,724
	300		214,235	656,937	1,099,640	1,542,342	1,985,045	2,427,748	2,870,450
	400		(31,039)	411,663	854,366	1,297,068	1,739,771	2,182,474	2,625,176
CIL £psm / Section 106	500		(271,470)	166,389	609,092	1,051,794	1,494,497	1,937,200	2,379,902
	600		(515,515)	(78,885)	363,818	806,520	1,249,223	1,691,926	2,134,628
	700		(777,197)	(319,865)	118,544	561,247	1,003,949	1,446,652	1,889,354
	800		(1,059,121)	(565,010)	(126,730)	315,973	758,675	1,201,378	1,644,080
	900		(1,341,045)	(832,191)	(368,260)	70,699	513,401	956,104	1,398,806
	1000		(1,622,969)	(1,114,115)	(614,505)	(174,575)	268,127	710,830	1,153,532
	1100		(1,904,893)	(1,396,040)	(887,186)	(416,656)	22,853	465,556	908,258
	1200		(2,186,817)	(1,677,964)	(1,169,110)	(664,000)	(222,421)	220,282	662,984
Balance		2,278,164	85%	90%	95%	100%	105%	110%	115%
	0		3,104,329	2,828,941	2,553,553	2,278,164	2,002,776	1,727,388	1,452,000
	100		2,859,055	2,583,667	2,308,279	2,032,890	1,757,502	1,482,114	1,206,726
	200		2,613,781	2,338,393	2,063,005	1,787,616	1,512,228	1,236,840	961,452
	300		2,368,507	2,093,119	1,817,731	1,542,342	1,266,954	991,566	716,178
	400		2,123,233	1,847,845	1,572,457	1,297,068	1,021,680	746,292	470,904
CIL £psm / Section 106	500		1,877,959	1,602,571	1,327,183	1,051,794	776,406	501,018	225,630
	600		1,632,685	1,357,297	1,081,909	806,520	531,132	255,744	(19,644)
	700		1,387,411	1,112,023	836,635	561,247	285,858	10,470	(259,944)
	800		1,142,137	866,749	591,361	315,973	40,584	(234,804)	(503,727)
	900		896,863	621,475	346,087	70,699	(204,690)	(477,577)	(764,099)
	1000		651,589	376,201	100,813	(174,575)	(447,116)	(729,485)	(1,046,023)
	1100		406,315	130,927	(144,461)	(416,656)	(695,153)	(1,011,409)	(1,327,947)
	1200		161,041	(114,347)	(386,195)	(664,000)	(976,795)	(1,293,333)	(1,609,871)

2004 Cambridge strategic options Commercial appraisals v2
Office Rural (GF)

SCHEME DETAILS - ASSUMPTIONS					
Rural office park	Greenfield				
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Rural office park	2,000	21,528	85.0%	2,352.9	25,327
area 2	0	0	85.0%	0.0	0
area 3	0	0	85.0%	0.0	0
area 4	0	0	85.0%	0.0	0
area 5	0	0	85.0%	0.0	0
area 6	0	0	85.0%	0.0	0
total floor area	2,000	21,528	85.0%	2,353	25,327

GROSS DEVELOPMENT VALUE				
	sqft	@	£ psf	£
Rural office park	21,528	@	25.00	538,196
area 2	0	@	0.00	-
area 3	0	@	0.00	-
area 4	0	@	0.00	-
area 5	0	@	0.00	-
area 6	0	@	0.00	-
Estimated Gross Rental Value per annum				538,196
Yield		@	6.50%	
capitalised rent				8,279,931
less				
Rent Free / Void allowance	12 months rent			(538,196)
Purchasers costs		@	5.76%	(421,638)
GDV				7,320,098

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees and reports				(40,000)
Statutory Planning Fees				(12,320)
Combined CIL	2,353 sqm @		0.00 £ psm	-
Site Specific S106/278				-
Construction Costs -				
Demolition and Site Clearance (allowance)	1.45 acres @			-
Rural office park	2,352.94 sqm @		1,856.00 psm	(4,367,059)
	2,352.94 sqm @		per unit	
	- sqm @		£ psm	-
	- sqm @		£ per scheme	-
Biodiversity offset	- sqm @		42.545 £ per gross hectare	(25,026)
	- sqm @		psm	-
External works	4,392,085 @		15%	(658,813)
Contingency	5,050,898 @		5%	(252,545)
Professional Fees	5,303,443 @		10%	(530,344)
Disposal Costs -				
Letting Agents Costs	538,196 ERV @		10.00%	(53,820)
Letting Legal Costs	538,196 ERV @		5.00%	(26,910)
Investment Sale Agents Costs	7,320,098 GDV @		1.00%	(73,201)
Investment Sale Legal Costs	7,320,098 GDV @		0.50%	(36,600)
Marketing and Promotion	7,320,098 GDV @		1.00%	(73,201)
Finance Costs -				
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm	(357,142)
Developers Profit	6,099,837 @		20.00% on costs	
	7,320,098 @		16.67% on GDV	(1,220,260)
TOTAL COSTS				(7,727,242)

2004 Cambridge strategic options Commercial appraisals v2

Office Rural (GF)

RESIDUAL LAND VALUE			
Residual Land Value (gross)			(407,144)
SDLT (HMRC % rates)	- @		-
Acquisition Agent fees	- @	1%	-
Acquisition Legal fees	- @	0.5%	-
Interest on Land	- @	7.5%	-
Residual Land Value (net)			(407,144)

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	0.588 ha	1.45 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	247,110 £ per ha	100,000 £ per acre	
Gross to net	5,882	34.00%	145,353

BALANCE	
Surplus/(Deficit)	(552,497)

SENSITIVITY ANALYSIS								
		GDV						
Balance	(552,497)	85%	90%	95%	100%	105%	110%	115%
	0	(1,440,022)	(1,144,180)	(848,339)	(552,497)	(256,655)	20,733	277,383
	100	(1,721,946)	(1,426,105)	(1,130,263)	(834,421)	(538,579)	(242,738)	33,258
	200	(2,003,870)	(1,708,029)	(1,412,187)	(1,116,345)	(820,503)	(524,662)	(228,820)
	300	(2,285,795)	(1,989,953)	(1,694,111)	(1,398,269)	(1,102,428)	(806,586)	(510,744)
	400	(2,567,719)	(2,271,877)	(1,976,035)	(1,680,193)	(1,384,352)	(1,088,510)	(792,668)
CIL £psm / Section 106	500	(2,849,643)	(2,553,801)	(2,257,959)	(1,962,118)	(1,666,276)	(1,370,434)	(1,074,592)
	600	(3,131,567)	(2,835,725)	(2,539,883)	(2,244,042)	(1,948,200)	(1,652,358)	(1,356,516)
	700	(3,413,491)	(3,117,649)	(2,821,808)	(2,525,966)	(2,230,124)	(1,934,282)	(1,638,441)
	800	(3,695,415)	(3,399,573)	(3,103,732)	(2,807,890)	(2,512,048)	(2,216,206)	(1,920,365)
	900	(3,977,339)	(3,681,498)	(3,385,656)	(3,089,814)	(2,793,972)	(2,498,131)	(2,202,289)
	1000	(4,259,263)	(3,963,422)	(3,667,580)	(3,371,738)	(3,075,896)	(2,780,055)	(2,484,213)
	1100	(4,541,188)	(4,245,346)	(3,949,504)	(3,653,662)	(3,357,821)	(3,061,979)	(2,766,137)
	1200	(4,823,112)	(4,527,270)	(4,231,428)	(3,935,586)	(3,639,745)	(3,343,903)	(3,048,061)
		Build costs						
Balance	(552,497)	85%	90%	95%	100%	105%	110%	115%
	0	302,399	41,298	(245,230)	(552,497)	(859,764)	(1,167,031)	(1,474,299)
	100	64,107	(219,887)	(527,154)	(834,421)	(1,141,688)	(1,448,955)	(1,756,223)
	200	(194,544)	(501,811)	(809,078)	(1,116,345)	(1,423,612)	(1,730,880)	(2,038,147)
	300	(476,468)	(783,735)	(1,091,002)	(1,398,269)	(1,705,537)	(2,012,804)	(2,320,071)
	400	(758,392)	(1,065,659)	(1,372,926)	(1,680,193)	(1,987,461)	(2,294,728)	(2,601,995)
CIL £psm / Section 106	500	(1,040,316)	(1,347,583)	(1,654,850)	(1,962,118)	(2,269,385)	(2,576,652)	(2,883,919)
	600	(1,322,240)	(1,629,507)	(1,936,775)	(2,244,042)	(2,551,309)	(2,858,576)	(3,165,843)
	700	(1,604,164)	(1,911,431)	(2,218,699)	(2,525,966)	(2,833,233)	(3,140,500)	(3,447,767)
	800	(1,886,088)	(2,193,356)	(2,500,623)	(2,807,890)	(3,115,157)	(3,422,424)	(3,729,691)
	900	(2,168,013)	(2,475,280)	(2,782,547)	(3,089,814)	(3,397,081)	(3,704,348)	(4,011,616)
	1000	(2,449,937)	(2,757,204)	(3,064,471)	(3,371,738)	(3,679,005)	(3,986,273)	(4,293,540)
	1100	(2,731,861)	(3,039,128)	(3,346,395)	(3,653,662)	(3,960,929)	(4,268,197)	(4,575,464)
	1200	(3,013,785)	(3,321,052)	(3,628,319)	(3,935,586)	(4,242,854)	(4,550,121)	(4,857,388)

2004 Cambridge strategic options Commercial appraisals v2
Light ind-B2 (GF)

SCHEME DETAILS - ASSUMPTIONS					
Industrial Class E (light industrial)/B2 Greenfield					
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Industrial Class E (light industrial)/B2	200	2,153	100.0%	200.0	2,153
area 2	0	0	100.0%	0.0	0
area 3	0	0	100.0%	0.0	0
area 4	0	0	100.0%	0.0	0
area 5	0	0	100.0%	0.0	0
area 6	0	0	100.0%	0.0	0
total floor area	200	2,153	100.0%	200	2,153

GROSS DEVELOPMENT VALUE					
	sqft		£ psf	£	
Industrial Class E (light industrial)/B2	2,153	@	13.50	29,063	
area 2	0	@	0.00	-	
area 3	0	@	0.00	-	
area 4	0	@	0.00	-	
area 5	0	@	0.00	-	
area 6	0	@	0.00	-	
Estimated Gross Rental Value per annum				29,063	
Yield		@	6.00%		
capitalised rent				484,376	
/less					
Rent Free / Void allowance	6 months rent			(14,531)	
Purchasers costs		@	5.76%	(25,589)	444,256
GDV					444,256

DEVELOPMENT COSTS					
Initial Payments -					
Planning Application Professional Fees and reports					-
Statutory Planning Fees					(1,232)
Combined CIL	200 sqm @		0.00 £ psm		-
Site Specific S106/278					-
Construction Costs -					
Demolition and Site Clearance (allowance)	0.12 acres @			per acre	-
Industrial Class E (light industrial)/B2	200.00 sqm @		812.00 psm		(162,400)
	200.00 sqm @			per unit	-
	- sqm @			£ psm	-
	- sqm @			£ per scheme	-
Biodiversity offset	- sqm @		42.545 £ per gross hectare		(2,127)
	- sqm @			psm	-
External works	164,527 @		15%		(24,679)
Contingency	189,206 @		5%		(9,460)
Professional Fees	198,667 @		10%		(19,867)
Disposal Costs -					
Letting Agents Costs	29,063 ERV @		10.00%		(2,906)
Letting Legal Costs	29,063 ERV @		5.00%		(1,453)
Investment Sale Agents Costs	444,256 GDV @		1.00%		(4,443)
Investment Sale Legal Costs	444,256 GDV @		0.50%		(2,221)
Marketing and Promotion	444,256 GDV @		1.00%		(4,443)
Finance Costs -					
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm		(8,972)
Developers Profit					
	370,198 @		20.00%	on costs	
	444,256 @		16.67%	on GDV	(74,057)
TOTAL COSTS					(318,260)

2004 Cambridge strategic options Commercial appraisals v2 Light ind-B2 (GF)

RESIDUAL LAND VALUE			
Residual Land Value (gross)			125,995
SDLT (HMRC % rates)	125,995 @		(1,260)
Acquisition Agent fees	125,995 @	1%	(1,260)
Acquisition Legal fees	125,995 @	0.5%	(630)
Interest on Land	125,995 @	7.5%	(9,450)
Residual Land Value (net)			113,396

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	0.050 ha	0.12 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	247,110 £ per ha	100,000 £ per acre	
	500	40.00%	12,355
Gross to net			

BALANCE	
Surplus/(Deficit)	101,041

SENSITIVITY ANALYSIS									
		GDV							
Balance		101,041	85%	90%	95%	100%	105%	110%	115%
	0		52,564	68,723	84,882	101,041	117,200	133,359	149,518
	50		42,163	58,322	74,481	90,640	106,799	122,959	139,118
	100		31,762	47,921	64,081	80,240	96,399	112,558	128,717
	150		21,362	37,521	53,680	69,839	85,998	102,157	118,316
	200		10,961	27,120	43,279	59,438	75,598	91,757	107,916
CIL £psm / Section 106	250		560	16,720	32,879	49,038	65,197	81,356	97,515
	300		(9,840)	6,319	22,478	38,637	54,796	70,955	87,115
	350		(21,117)	(4,082)	12,077	28,237	44,396	60,555	76,714
	400		(32,673)	(14,719)	1,677	17,836	33,995	50,154	66,313
	450		(44,230)	(26,275)	(8,724)	7,435	23,594	39,754	55,913
	500		(55,786)	(37,831)	(19,877)	(2,965)	13,194	29,353	45,512
	550		(67,342)	(49,387)	(31,433)	(13,478)	2,793	18,952	35,111
	600		(78,898)	(60,944)	(42,989)	(25,035)	(7,607)	8,552	24,711
Balance		101,041	85%	90%	95%	100%	105%	110%	115%
	0		131,331	121,235	111,138	101,041	90,944	80,847	70,750
	50		120,931	110,834	100,737	90,640	80,543	70,447	60,350
	100		110,530	100,433	90,337	80,240	70,143	60,046	49,949
	150		100,130	90,033	79,936	69,839	59,742	49,645	39,549
	200		89,729	79,632	69,535	59,438	49,342	39,245	29,148
CIL £psm / Section 106	250		79,328	69,231	59,135	49,038	38,941	28,844	18,747
	300		68,928	58,831	48,734	38,637	28,540	18,444	8,347
	350		58,527	48,430	38,333	28,237	18,140	8,043	(2,054)
	400		48,126	38,030	27,933	17,836	7,739	(2,358)	(12,466)
	450		37,726	27,629	17,532	7,435	(2,662)	(12,803)	(24,022)
	500		27,325	17,228	7,132	(2,965)	(13,141)	(24,359)	(35,578)
	550		16,925	6,828	(3,269)	(13,478)	(24,697)	(35,916)	(47,134)
	600		6,524	(3,573)	(13,816)	(25,035)	(36,253)	(47,472)	(58,691)

2004 Cambridge strategic options Commercial appraisals v2
Light ind-B2 (BF)

SCHEME DETAILS - ASSUMPTIONS					
Industrial Class E (light industrial)/B2 Brownfield					
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Industrial Class E (light industrial)/B2	200	2,153	100.0%	200.0	2,153
area 2	0	0	100.0%	0.0	0
area 3	0	0	100.0%	0.0	0
area 4	0	0	100.0%	0.0	0
area 5	0	0	100.0%	0.0	0
area 6	0	0	100.0%	0.0	0
total floor area	200	2,153	100.0%	200	2,153

GROSS DEVELOPMENT VALUE					
	sqft		£ psf	£	
Industrial Class E (light industrial)/B2	2,153	@	13.50	29,063	
area 2	0	@	0.00	-	
area 3	0	@	0.00	-	
area 4	0	@	0.00	-	
area 5	0	@	0.00	-	
area 6	0	@	0.00	-	
Estimated Gross Rental Value per annum				29,063	
Yield		@	6.00%		
capitalised rent				484,376	
/less					
Rent Free / Void allowance	6 months rent			(14,531)	
Purchasers costs		@	5.76%	(25,589)	444,256
GDV					444,256

DEVELOPMENT COSTS					
Initial Payments -					
Planning Application Professional Fees and reports					-
Statutory Planning Fees					(1,232)
Combined CIL	200 sqm @		0.00 £ psm		-
Site Specific S106/278					-
Construction Costs -					
Demolition and Site Clearance (allowance)	0.12 acres @		110,000 per acre		(13,591)
Industrial Class E (light industrial)/B2	200.00 sqm @		812.00 psm		(162,400)
	200.00 sqm @		per unit		-
	- sqm @		£ psm		-
	- sqm @		£ per scheme		-
Biodiversity offset	- sqm @		42.545 £ per gross hectare		(2,127)
	- sqm @		psm		-
External works	164,527 @		15%		(24,679)
Contingency	202,797 @		5%		(10,140)
Professional Fees	212,937 @		10%		(21,294)
Disposal Costs -					
Letting Agents Costs	29,063 ERV @		10.00%		(2,906)
Letting Legal Costs	29,063 ERV @		5.00%		(1,453)
Investment Sale Agents Costs	444,256 GDV @		1.00%		(4,443)
Investment Sale Legal Costs	444,256 GDV @		0.50%		(2,221)
Marketing and Promotion	444,256 GDV @		1.00%		(4,443)
Finance Costs -					
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm		(10,662)
Developers Profit					
	370,198 @		20.00%	on costs	
	444,256 @		16.67%	on GDV	(74,057)
TOTAL COSTS					(335,648)

2004 Cambridge strategic options Commercial appraisals v2

Light ind-B2 (BF)

RESIDUAL LAND VALUE			
Residual Land Value (gross)			108,608
SDLT (HMRC % rates)	108,608 @		(1,086)
Acquisition Agent fees	108,608 @	1%	(1,086)
Acquisition Legal fees	108,608 @	0.5%	(543)
Interest on Land	108,608 @	7.5%	(8,146)
Residual Land Value (net)			97,747

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	0.050 ha	0.12 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	1,186,128 £ per ha	480,000 £ per acre	
	500	40.00%	59,304
Gross to net			

BALANCE	
Surplus/(Deficit)	38,443

SENSITIVITY ANALYSIS									
		GDV							
Balance		38,443	85%	90%	95%	100%	105%	110%	115%
	0		(10,035)	6,125	22,284	38,443	54,602	70,761	86,920
	50		(20,435)	(4,276)	11,883	28,042	44,201	60,360	76,520
	100		(30,836)	(14,677)	1,482	17,642	33,801	49,960	66,119
	150		(41,236)	(25,077)	(8,918)	7,241	23,400	39,559	55,718
	200		(51,637)	(35,478)	(19,319)	(3,160)	12,999	29,159	45,318
CIL £psm / Section 106	250		(62,341)	(45,879)	(29,719)	(13,560)	2,599	18,758	34,917
	300		(73,898)	(56,279)	(40,120)	(23,961)	(7,802)	8,357	24,516
	350		(85,454)	(67,499)	(50,521)	(34,362)	(18,202)	(2,043)	14,116
	400		(97,010)	(79,056)	(61,101)	(44,762)	(28,603)	(12,444)	3,715
	450		(108,566)	(90,612)	(72,657)	(55,163)	(39,004)	(22,845)	(6,685)
	500		(120,123)	(102,168)	(84,214)	(66,259)	(49,404)	(33,245)	(17,086)
	550		(131,679)	(113,724)	(95,770)	(77,815)	(59,861)	(43,646)	(27,487)
	600		(143,235)	(125,281)	(107,326)	(89,371)	(71,417)	(54,046)	(37,887)
Balance		38,443	85%	90%	95%	100%	105%	110%	115%
	0		68,733	58,636	48,540	38,443	28,346	18,249	8,152
	50		58,333	48,236	38,139	28,042	17,945	7,849	(2,248)
	100		47,932	37,835	27,738	17,642	7,545	(2,552)	(12,649)
	150		37,531	27,435	17,338	7,241	(2,856)	(12,953)	(23,050)
	200		27,131	17,034	6,937	(3,160)	(13,257)	(23,353)	(33,450)
CIL £psm / Section 106	250		16,730	6,633	(3,463)	(13,560)	(23,657)	(33,754)	(43,851)
	300		6,330	(3,767)	(13,864)	(23,961)	(34,058)	(44,155)	(54,251)
	350		(4,071)	(14,168)	(24,265)	(34,362)	(44,458)	(54,555)	(65,246)
	400		(14,472)	(24,569)	(34,665)	(44,762)	(54,859)	(65,584)	(76,803)
	450		(24,872)	(34,969)	(45,066)	(55,163)	(65,921)	(77,140)	(88,359)
	500		(35,273)	(45,370)	(55,467)	(66,259)	(77,478)	(88,696)	(99,915)
	550		(45,674)	(55,770)	(66,596)	(77,815)	(89,034)	(100,253)	(111,471)
	600		(56,074)	(66,934)	(78,153)	(89,371)	(100,590)	(111,809)	(123,028)

**2004 Cambridge strategic options Commercial appraisals v2
B2-B8 (GF)**

SCHEME DETAILS - ASSUMPTIONS					
Industrial B2/B8		Brownfield			
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Industrial B2/B8	5,000	53,820	100.0%	5,000.0	53,820
area 2	0	0	100.0%	0.0	0
area 3	0	0	100.0%	0.0	0
area 4	0	0	100.0%	0.0	0
area 5	0	0	100.0%	0.0	0
area 6	0	0	100.0%	0.0	0
total floor area	5,000	53,820	100.0%	5,000	53,820

GROSS DEVELOPMENT VALUE				
	sqft	@	£ psf	£
Industrial B2/B8	53,820	@	12.50	672,744
area 2	0	@	0.00	-
area 3	0	@	0.00	-
area 4	0	@	0.00	-
area 5	0	@	0.00	-
area 6	0	@	0.00	-
Estimated Gross Rental Value per annum				672,744
Yield		@	5.50%	
capitalised rent				12,231,716
/less				
Rent Free / Void allowance	6 months rent			(336,372)
Purchasers costs		@	5.76%	(647,855)
GDV				11,247,488

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees and reports				(100,000)
Statutory Planning Fees				(32,059)
Combined CIL	5,000 sqm @		0.00 £ psm	-
Site Specific S106/278				-
Construction Costs -				
Demolition and Site Clearance (allowance)	3.09 acres @		0 per acre	-
Industrial B2/B8	5,000.00 sqm @		812.00 psm	(4,060,000)
	5,000.00 sqm @		per unit	-
	- sqm @		£ psm	-
	- sqm @		£ per scheme	-
Biodiversity offset	- sqm @		42.545 £ per gross hectare	(53,181)
	- sqm @		psm	-
External works	4,113,181 @		15%	(616,977)
Contingency	4,730,158 @		5%	(236,508)
Professional Fees	4,966,666 @		10%	(496,667)
Disposal Costs -				
Letting Agents Costs	672,744 ERV @		10.00%	(67,274)
Letting Legal Costs	672,744 ERV @		5.00%	(33,637)
Investment Sale Agents Costs	11,247,488 GDV @		1.00%	(112,475)
Investment Sale Legal Costs	11,247,488 GDV @		0.50%	(56,237)
Marketing and Promotion	11,247,488 GDV @		1.00%	(112,475)
Finance Costs -				
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm	(350,924)
Developers Profit				
	9,372,532 @		20.00%	on costs
	11,247,488 @		16.67%	on GDV
TOTAL COSTS				(8,203,371)

**2004 Cambridge strategic options Commercial appraisals v2
B2-B8 (GF)**

RESIDUAL LAND VALUE			
Residual Land Value (gross)			3,044,117
SDLT (HMRC % rates)	3,044,117 @		(121,765)
Acquisition Agent fees	3,044,117 @	1%	(30,441)
Acquisition Legal fees	3,044,117 @	0.5%	(15,221)
Interest on Land	3,044,117 @	7.5%	(228,309)
Residual Land Value (net)			2,648,382

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	1.250 ha	3.09 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	247,110 £ per ha	100,000 £ per acre	
Gross to net	12,500	40.00%	308,875

BALANCE	
Surplus/(Deficit)	2,339,507

SENSITIVITY ANALYSIS									
		GDV							
Balance		2,339,507	85%	90%	95%	100%	105%	110%	115%
CIL £psm / Section 106	0		1,153,086	1,548,560	1,944,033	2,339,507	2,734,980	3,130,454	3,525,927
	50		892,483	1,287,956	1,683,430	2,078,903	2,474,377	2,869,850	3,265,324
	100		631,879	1,027,353	1,422,826	1,818,300	2,213,773	2,609,247	3,004,720
	150		371,275	766,749	1,162,222	1,557,696	1,953,169	2,348,643	2,744,117
	200		115,494	506,145	901,619	1,297,092	1,692,566	2,088,039	2,483,513
	250		(144,451)	245,542	641,015	1,036,489	1,431,962	1,827,436	2,222,909
	300		(425,726)	(11,685)	380,412	775,885	1,171,359	1,566,832	1,962,306
	350		(725,270)	(274,520)	124,735	515,282	910,755	1,306,229	1,701,702
	400		(1,024,815)	(570,247)	(135,000)	254,678	650,151	1,045,625	1,441,098
	450		(1,324,359)	(869,792)	(415,225)	(2,443)	389,548	785,021	1,180,495
	500		(1,623,903)	(1,169,336)	(714,769)	(265,069)	128,944	524,418	919,891
550		(1,923,448)	(1,468,881)	(1,014,313)	(559,746)	(125,548)	263,814	659,288	
600		(2,222,992)	(1,768,425)	(1,313,858)	(859,290)	(404,723)	6,798	398,684	
Balance		2,339,507	85%	90%	95%	100%	105%	110%	115%
CIL £psm / Section 106	0		3,085,086	2,836,559	2,588,033	2,339,507	2,090,980	1,842,454	1,593,928
	50		2,824,482	2,575,956	2,327,430	2,078,903	1,830,377	1,581,851	1,333,324
	100		2,563,879	2,315,352	2,066,826	1,818,300	1,569,773	1,321,247	1,072,721
	150		2,303,275	2,054,749	1,806,222	1,557,696	1,309,170	1,060,643	812,117
	200		2,042,671	1,794,145	1,545,619	1,297,092	1,048,566	800,040	551,513
	250		1,782,068	1,533,541	1,285,015	1,036,489	787,962	539,436	290,910
	300		1,521,464	1,272,938	1,024,412	775,885	527,359	278,832	34,205
	350		1,260,861	1,012,334	763,808	515,282	266,755	21,989	(227,588)
	400		1,000,257	751,731	503,204	254,678	9,773	(240,082)	(518,100)
	450		739,653	491,127	242,601	(2,443)	(252,575)	(531,982)	(817,645)
	500		479,050	230,523	(14,660)	(265,069)	(545,864)	(831,527)	(1,117,189)
550		218,446	(26,876)	(277,563)	(559,746)	(845,409)	(1,131,071)	(1,416,733)	
600		(9,092)	(290,057)	(573,628)	(859,290)	(1,144,953)	(1,430,615)	(1,716,278)	

**2004 Cambridge strategic options Commercial appraisals v2
B2-B8 (BF)**

SCHEME DETAILS - ASSUMPTIONS					
Industrial B2/B8		Brownfield			
Floor areas:	NIA (sqm)	NIA (sqft)	Net to Gross %	GIA (sqm)	NIA (sqft)
Industrial B2/B8	5,000	53,820	100.0%	5,000.0	53,820
area 2	0	0	100.0%	0.0	0
area 3	0	0	100.0%	0.0	0
area 4	0	0	100.0%	0.0	0
area 5	0	0	100.0%	0.0	0
area 6	0	0	100.0%	0.0	0
total floor area	5,000	53,820	100.0%	5,000	53,820

GROSS DEVELOPMENT VALUE				
	sqft	@	£ psf	£
Industrial B2/B8	53,820	@	12.50	672,744
area 2	0	@	0.00	-
area 3	0	@	0.00	-
area 4	0	@	0.00	-
area 5	0	@	0.00	-
area 6	0	@	0.00	-
Estimated Gross Rental Value per annum				672,744
Yield		@	5.50%	
capitalised rent				12,231,716
/less				
Rent Free / Void allowance	6 months rent			(336,372)
Purchasers costs		@	5.76%	(647,855)
GDV				11,247,488

DEVELOPMENT COSTS				
Initial Payments -				
Planning Application Professional Fees and reports				(100,000)
Statutory Planning Fees				(32,059)
Combined CIL	5,000 sqm @		0.00 £ psm	-
Site Specific S106/278				-
Construction Costs -				
Demolition and Site Clearance (allowance)	3.09 acres @		110,000 per acre	(339,763)
Industrial B2/B8	5,000.00 sqm @		812.00 psm	(4,060,000)
	5,000.00 sqm @		per unit	-
	- sqm @		£ psm	-
	- sqm @		£ per scheme	-
Biodiversity offset	- sqm @		42.545 £ per gross hectare	(53,181)
	- sqm @		psm	-
External works	4,113,181 @		15%	(616,977)
Contingency	5,069,921 @		5%	(253,496)
Professional Fees	5,323,417 @		10%	(532,342)
Disposal Costs -				
Letting Agents Costs	672,744 ERV @		10.00%	(67,274)
Letting Legal Costs	672,744 ERV @		5.00%	(33,637)
Investment Sale Agents Costs	11,247,488 GDV @		1.00%	(112,475)
Investment Sale Legal Costs	11,247,488 GDV @		0.50%	(56,237)
Marketing and Promotion	11,247,488 GDV @		1.00%	(112,475)
Finance Costs -				
Interest (cashflow basis incl. land)	7.50% APR		0.604% pcm	(408,200)
Developers Profit	9,372,532 @		20.00% on costs	
	11,247,488 @		16.67% on GDV	(1,874,956)
TOTAL COSTS				(8,653,073)

**2004 Cambridge strategic options Commercial appraisals v2
B2-B8 (BF)**

RESIDUAL LAND VALUE			
Residual Land Value (gross)			2,594,415
SDLT (HMRC % rates)	2,594,415 @		(103,777)
Acquisition Agent fees	2,594,415 @	1%	(25,944)
Acquisition Legal fees	2,594,415 @	0.5%	(12,972)
Interest on Land	2,594,415 @	7.5%	(194,581)
Residual Land Value (net)			2,257,141

THRESHOLD LAND VALUE			
Site density	4,000 sqm per hectare		
Site Area	1.250 ha	3.09 acres	
	4,000 sqm/ha	17,424 sqft/ac	
Threshold Land Value	1,186,128 £ per ha	480,000 £ per acre	
Gross to net	12,500	40.00%	1,482,600

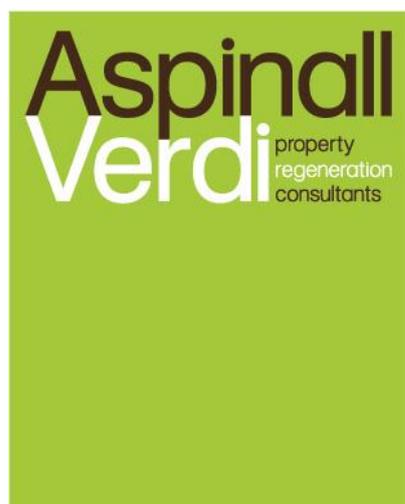
BALANCE	
Surplus/(Deficit)	774,541

SENSITIVITY ANALYSIS								
		GDV						
Balance	774,541	85%	90%	95%	100%	105%	110%	115%
	0	(411,879)	(16,406)	379,068	774,541	1,170,015	1,565,488	1,960,962
	50	(672,483)	(277,009)	118,464	513,938	909,411	1,304,885	1,700,358
	100	(933,086)	(537,613)	(142,139)	253,334	648,808	1,044,281	1,439,755
	150	(1,190,369)	(798,217)	(402,743)	(7,270)	388,204	783,677	1,179,151
	200	(1,453,318)	(1,053,949)	(663,347)	(267,873)	127,600	523,074	918,547
CIL £psm / Section 106	250	(1,749,608)	(1,313,797)	(923,950)	(528,477)	(133,003)	262,470	657,944
	300	(2,049,153)	(1,594,586)	(1,181,128)	(789,080)	(393,607)	1,867	397,340
	350	(2,348,697)	(1,894,130)	(1,443,866)	(1,044,708)	(654,211)	(258,737)	136,736
	400	(2,648,242)	(2,193,674)	(1,739,107)	(1,304,346)	(914,814)	(519,341)	(123,867)
	450	(2,947,786)	(2,493,219)	(2,038,651)	(1,584,084)	(1,171,887)	(779,944)	(384,471)
	500	(3,247,330)	(2,792,763)	(2,338,196)	(1,883,629)	(1,434,415)	(1,040,548)	(645,074)
	550	(3,546,875)	(3,092,307)	(2,637,740)	(2,183,173)	(1,728,606)	(1,294,895)	(905,678)
	600	(3,846,419)	(3,391,852)	(2,937,285)	(2,482,717)	(2,028,150)	(1,573,583)	(1,162,646)
		Build costs						
Balance	774,541	85%	90%	95%	100%	105%	110%	115%
	0	1,520,120	1,271,594	1,023,068	774,541	526,015	277,489	28,962
	50	1,259,517	1,010,990	762,464	513,938	265,411	16,885	(231,641)
	100	998,913	750,387	501,860	253,334	4,808	(243,719)	(492,245)
	150	738,309	489,783	241,257	(7,270)	(255,796)	(504,322)	(752,849)
	200	477,706	229,179	(19,347)	(267,873)	(516,400)	(764,926)	(1,013,452)
CIL £psm / Section 106	250	217,102	(31,424)	(279,950)	(528,477)	(777,003)	(1,025,529)	(1,266,865)
	300	(43,501)	(292,028)	(540,554)	(789,080)	(1,037,607)	(1,279,358)	(1,542,438)
	350	(304,105)	(552,631)	(801,158)	(1,044,708)	(1,291,852)	(1,556,320)	(1,841,983)
	400	(564,709)	(813,235)	(1,056,924)	(1,304,346)	(1,570,202)	(1,855,865)	(2,141,527)
	450	(825,312)	(1,069,140)	(1,316,840)	(1,584,084)	(1,869,747)	(2,155,409)	(2,441,072)
	500	(1,081,356)	(1,329,333)	(1,597,966)	(1,883,629)	(2,169,291)	(2,454,953)	(2,740,616)
	550	(1,341,827)	(1,611,848)	(1,897,510)	(2,183,173)	(2,468,835)	(2,754,498)	(3,040,160)
	600	(1,625,730)	(1,911,392)	(2,197,055)	(2,482,717)	(2,768,380)	(3,054,042)	(3,339,705)

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Greater Cambridge Local Plan

Strategic Spatial Options for Testing – Methodology

November 2020

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Non-technical Summary

Purpose

This document sets out the strategic (non-site specific) spatial options to be tested through the Greater Cambridge Local Plan process, and the methodology used to identify them. The spatial options include different distributions of jobs and homes to meet different potential growth requirements.

The document is intended to demonstrate that a robust and transparent process has been followed for identifying and testing strategic spatial options, following the requirements of relevant legislation and national policy, as well as local objectives.

Once identified, the strategic options will be tested in terms of transport, climate change and other impacts and be subject to sustainability appraisal. This testing will then inform the selection of a preferred option for the Local Plan.

For further detail please see 1. Introduction.

Identifying the reasonable alternatives

Growth level options

Consideration of national policy requirements and relevant economic and demographic evidence has resulted in the determination of three growth scenarios for the plan period 2020-41 which are consistent for jobs and homes, as set out in the table below.

Table 1: Growth options, 2020-41 (rounded up to the nearest hundred)

Growth scenario	Employment (jobs)	Housing (dwellings)
Minimum	45,800	36,700
Medium	58,500	42,000
Maximum	79,500	57,000

Note: a typographical error was identified in the Employment Land Review during the period of testing the strategic options, such that the final 'higher' employment growth forecast (used in the growth options as the maximum) is for 78,800 jobs which

generates an associated growth of 56,500 homes. The differences between the figures included in the table above for testing and these revised figures are not considered to be significant in the context of this strategic testing stage.

For further detail see 1.3. Identifying the reasonable alternatives.

Strategic spatial options

A full assessment of potential strategic spatial options was undertaken. Drawing on this assessment, the following options are being taken forward for testing as strategic spatial options:

- 0 Densification of existing urban areas
- 1 Edge of Cambridge - outside the Green Belt
- 2 Edge of Cambridge - Green Belt
- 3 Dispersal - new settlements
- 4 Dispersal - villages
- 5 Public transport corridors
- 6 Supporting a high-tech corridor by integrating homes and jobs
- 7 Expanding a growth area around transport nodes

For further detail see 1.4 Identifying the reasonable spatial strategy options, and Appendix 3: Identifying the full range of reasonable spatial options.

Description of strategic spatial options and options numbers for testing

This section describes, for each strategic spatial option and growth scenario, the distribution of growth between the sources of supply described in 3. Strategic options methodology.

Broad descriptions of the strategic spatial options are set out below:

Spatial Scenario 1: Focus on Densification of existing urban areas

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge: this is the last major brownfield site within Cambridge urban area and is being taken forward separately via an Area Action Plan.

Spatial Scenario 2: Focus on Edge of Cambridge: outside Green Belt

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

Spatial Scenario 3: Focus on Edge of Cambridge: Green Belt

This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

Spatial Scenario 4: Focus on New Settlements

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

Spatial Scenario 5: Focus on Dispersal: Villages

This approach would spread new homes and jobs out to the villages.

Spatial Scenario 6: Focus on Public transport corridors

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

Spatial Scenario 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

Spatial Scenario 8: Expanding a growth area around transport nodes

This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

For further detail see 2.1 Description of the strategic options.

The 2.2 Strategic spatial options numbers for testing section sets out in table form the distribution of the balance to find that corresponds with 2.1 Description of the strategic options. For the Minimum and Medium growth levels historic delivery rates were used, and for the Maximum growth level higher delivery rates were used (see Key point to note).

Compiling the strategic spatial options

This report sets out in full the approach taken to identifying strategic spatial options (i.e. the non-site-specific distribution of growth) for each reasonable option identified above, including:

- Identifying the minimum, medium and maximum growth balance to find through new allocations (note that a 10% buffer is applied to the housing growth levels identified above); and
- for each reasonable alternative, distributing growth between a range of broad areas of supply.

To inform the approach taken to distributing growth, a number of factors are taken into account, including:

- Overarching principles – derived from legislation and national policy relevant to testing of options
- Spatial principles – derived from national policy
- Opportunities and constraints - including factors such as existing and proposed transport infrastructure, assumed delivery rates, and environmental constraints

- Outline approach – setting out the approach to determining the balance to find in relation to growth levels, and key assumptions relating to sources of supply, including broad locations, capacity, availability, delivery and further evidence required for later stages of the plan-making process
- Compiling the strategic options for testing – setting out how the options were compiled, drawing on the above sections, and in particular noting the spatial principles that governed the distribution of development within each option

Drawing together the above factors, the strategic spatial options were compiled and the following information is set out for each:

- Description - of the option
- Spatial principles/benefits - associated with the option
- Resulting option assumptions – derived from the spatial principles/benefits

To ensure that consistent levels of homes and jobs were tested, slightly differing approaches were taken to distributing jobs than was taken for homes, relating to the following points:

- there is significantly greater uncertainty in terms of jobs delivery in comparison with housing delivery,
- the Local Plan will allocate land (not jobs) for business use (Use Class B) jobs, which only form a proportion of total jobs.
- due to the level of existing commitments, it is likely much of the growth will take place at committed sites, but for modelling these strategic spatial options a proportion of the business use jobs have been identified in the new growth locations guided by the different spatial scenarios.

Further detail on this point is set out at 3.4.2 How much? – Identifying the number and location of jobs, with additional detail provided within Appendix 7.

Key point to note: housing delivery rates

To support an evidence-based approach to identifying reasonable spatial options, historic delivery rates for homes were used in the first instance. However, using these in early testing under a maximum growth scenario led to unrealistic and

unreasonable spatial choices to support a deliverable and sustainable plan to 2041. For example, using such historic rates would mean that, say, ten new settlements would be needed to provide sufficient delivery to achieve the maximum option by 2041, which it would clearly be unrealistic to deliver simultaneously. Further to this, considering sustainability objectives would suggest it would be more sustainable to concentrate growth in a smaller number of locations which could support greater infrastructure provision and generate greater critical population mass. This challenge is also relevant, albeit to a lesser extent, when distributing growth for the minimum and medium options.

Drawing on the above, while the distribution of growth under the minimum and medium growth scenarios relates to cautious historic delivery rates as used in published housing trajectory calculations, the distribution of growth under the maximum growth scenario assumes higher delivery rates evidenced in specific locations within Greater Cambridge. In doing so, the Councils are not indicating that they have evidence to demonstrate that such a step change increase in housing delivery rates is achievable. Further exploration of whether and how such an increase could be achieved, including through the forthcoming Housing Delivery Study referred to in this document, will be required before pursuing this approach further through the plan process.

For further detail see 3.3.2 Constraints.

Introduction

Purpose

This document sets out the strategic (non-site specific) spatial options to be tested through the Greater Cambridge Local Plan process, and the methodology used to identify them. The spatial options include different distributions of jobs and homes to meet different potential growth requirements.

The document is intended to demonstrate that a robust and transparent process has been followed for identifying and testing strategic spatial options. This will thereby support the selection of a justified preferred spatial strategy, and associated site allocations, in a way that meets the statutory and national policy requirements set out below.

Once identified, the strategic options will be tested in terms of transport, climate change and other impacts and be subject to sustainability appraisal. This testing will then inform the selection of a preferred option for the Local Plan.

The document includes the following sections:

- What do we have to do? [section 1.2]
 - explains the influences on the steps taken to identifying strategic spatial options
- Identifying the reasonable alternatives [section 1.3]
 - sets out the approach taken to identifying the range of reasonable growth level and strategic spatial options for testing.
- Description of the strategic options [section 2.1]
- Strategic spatial options numbers for testing [section 2.2]
- Strategic options methodology [section 3]
 - sets out in full the approach taken to identifying strategic spatial options

What do we have to do?

Strategic Environmental Assessment Regulations

As set out in [Planning Practice Guidance](#), the identification and testing of growth level and spatial options, including strategic options, forms a key part of how the Local Plan meets the requirements of the [Planning and Compulsory Purchase Act 2004](#) to carry out an appraisal of the sustainability of the proposals in each development plan document – a Sustainability Appraisal. Sustainability Appraisals incorporate the requirements of the [Environmental Assessment of Plans and Programmes Regulations 2004](#), more commonly known as the Strategic Environmental Assessment (SEA) Regulations. The key requirement within the Regulations is to complete a report to “identify, describe and evaluate the likely significant effects on the environment of...implementing the plan or programme; and its reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme”. Guidance on applying the SEA Directive, on which the Regulations are based, clarifies that ‘only reasonable, realistic and relevant alternatives need to be put forward’¹.

Drawing on the above, this paper, in informing the identification of strategic options, seeks to ensure that:

- All reasonable growth and spatial option alternatives have been identified, and
- all growth and spatial options identified are reasonable, realistic and relevant², and take into account the objectives (so far as is appropriate at this stage) and the geographical scope of the Greater Cambridge Local Plan.

Climate Act 2008 (as amended 2019)

The Local Plan is subject to a wide range of legislation, for which most has been taken into account in the wording of national planning policy and guidance (explored below). However, perhaps the most relevant which is not fully reflected in the NPPF is the Climate Act 2008 as amended in 2019, which includes a target of net zero

¹ Office of the Deputy Prime Minister, 2004. Practical guidance on applying European Directive 2001/42/EC “on the assessment of the effects of certain plans and programmes on the environment, Appendix 6

² Ibid.

carbon Green House Gas emissions by 2050. The implications of the Act are that a key part of Local Plan options testing will be to consider the impact on carbon emissions and climate change, and to understand the role of the options in responding to the journey towards zero carbon by 2050. The implications of the Act are identified as relevant in the sections below.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) reflects the SEA Regulations requirements to assess reasonable options. In particular, paragraph 35 of the NPPF states that plans are sound if they are “Justified – an appropriate strategy, taking into account the reasonable alternatives, and based on proportionate evidence”.

Further to this, for the purpose of this paper, the plan-making process and spatial principles set out in the NPPF have influenced:

- confirmation of reasonable alternatives, and
- assumptions made within each alternative, and the evidence used to inform this.

Further details of this are provided within the 1.3 Confirming the reasonable alternatives and 3. Strategic options methodology sections. A full analysis of NPPF influences on development and assessment of spatial options is set out at Appendix 1: Spatial principles informing identification of and assumptions within strategic spatial options.

Emerging objectives for the Local Plan

As noted above, the SEA Regulations state that the reasonable options should take into account ‘the objectives...of the plan or programme’. At this early stage in the Greater Cambridge Local Plan process fixed objectives have yet to be confirmed; however, the First Conversation consultation identified four big themes that will influence how homes, jobs and infrastructure are planned, drawing on the feedback

the councils received from Councillors, communities and businesses while preparing the document³.

The big themes are:

- Climate change – how the plan should contribute to achieving net zero carbon, and the mitigation and adaptation measures that should be required through developments.
- Biodiversity and green spaces – how the plan can contribute to our ‘doubling nature’ vision, the improvement of existing and the creation of new green spaces.
- Wellbeing and social inclusion – how the plan can help spread the benefits of growth, helping to create healthy and inclusive communities.
- Great places – how the plan can protect what is already great about the area, and design new developments to create special places and spaces.

The high-level nature of the big themes mean that they do not translate clearly into informing confirmation of reasonable alternatives, or specific assumptions made within each option. Objectives for the Plan will be developed alongside assessment and engagement regarding a preferred strategic option, and will inform later stages of the plan-making process.

In addition to the above themes, the Greater Cambridge Local Plan Sustainability Appraisal Scoping Report identifies fifteen Sustainability Appraisal objectives. An analysis of these, as matched against the Big Themes referred to above (see Appendix 1), concluded that for the purposes of informing the compilation of strategic spatial options they did not add substantively to the NPPF spatial principles referred to above.

³ Note that these themes were identified before the Covid-19 pandemic, the impacts of which will need to be integrated into the further development of the Local Plan.

Identifying the reasonable alternatives

This section sets out the approach taken to identifying the range of reasonable growth level and strategic spatial options for testing.

Identifying growth level options

A consistent approach has been taken to identify lower and higher housing and jobs growth levels for testing. This work is set out in Greater Cambridge Housing and Employment Relationships Report.

National policy requirements

The NPPF sets out that evidence on growth levels should (NPPF paragraph numbers shown in brackets):

- identify objectively assessed (i.e. policy-off) needs for housing and other uses (11)
- be up to date, taking into account market signals (31)
- consider economic growth potential (80)
- consider the role of key sectors and clusters in driving potential future growth in Greater Cambridge (82)

The NPPF sets out that Local Plans should:

- support the Government's objective of significantly boosting the supply of homes, by enabling a sufficient amount and variety of land to come forward where it is needed (59)
- provide, as a minimum, a number of homes 'informed by a local housing need assessment, conducted using the standard method in national planning guidance – unless exceptional circumstances justify an alternative approach which also reflects current and future demographic trends and market signals' (60)
- Account for any unmet needs arising from neighbouring areas (11, 27)

Identifying a reasonable low growth option

Considerations

The nationally set standard method provides the basis for the Councils' minimum housing need. Currently, this amounts to 1,743 additional homes a year. This has been set as the minimum growth option as it is the minimum number of additional homes that the Local Plan must cater for. Work has been undertaken to identify the total number of jobs and related employment land needed to correspond with this level of additional housing growth.

The approach the councils are taking to the Duty to Cooperate, including on the issue of unmet need, is set out in the [Greater Cambridge Duty to Cooperate Proposed Approach, June 2020](#). At this point neighbouring authorities have not asked the councils to consider taking any unmet needs. If such a request arose, they would be under obligation to consider this, but are not necessarily obliged to agree to provide for those needs. Equally, the councils are not currently making a request to neighbouring authorities to take any needs arising from Greater Cambridge.

Identified reasonable low growth option

As described above, the low growth option is the minimum level of housing growth the councils should be planning for as set out in the NPPF.

Identifying reasonable medium and high growth options

Considerations

National guidance indicates that there will be circumstances where it is appropriate to consider whether actual housing need is higher than that derived from the standard method. None of the examples provided⁴ are directly applicable to circumstances in Greater Cambridge. However, in accordance with national objectives to consider an area's economic growth potential, the continuing strength of the Greater Cambridge economy as evidenced in the Cambridgeshire & Peterborough Independent Economic Review ([CPIER](#)) provided justification for exploring higher employment and related housing figures. A key aim for the

⁴ Planning Practice Guidance, *Housing and Economic Needs Assessment*, Paragraph: 010 Reference ID: 2a-010-20190220

Cambridgeshire and Peterborough Combined Authority is that economic output will double over the next 25 years, with an uplift in GVA from £22bn to over £40bn⁵.

The Greater Cambridge Employment Land Review & Economic Evidence Base Study considered a range of approaches to identifying employment futures for Greater Cambridge, drawing on the available historic employment data. At this point in time the report has not considered the economic impacts of the Covid-19 pandemic. This evidence base will be kept under review including in relation to the impacts of Covid-19.

The assessment included consideration of data informing the CPIER. The CPIER's future employment forecast was not used directly as an option because it provides an aggregated view of the whole Cambridgeshire & Peterborough economy, rather than a sector-by-sector view at a Greater Cambridge level.

The approach followed in the Councils' Employment Land Review is based on consideration of realistic employment forecasts for Greater Cambridge that would take account of the continued fast economic growth seen in recent years. The work uses recent and longer-term historic growth rates to forecast the future performance of the Greater Cambridge economy and key sectors within it. These key sectors were identified through an examination of which parts of the economy have driven growth in the recent past. The findings of this work set out a range of employment forecasts, with the upper level – 'higher' - outcome placing greater weight on fast growth in the recent past, particularly in key sectors, and the lower level – 'central' – outcome considered the most likely, taking into account long term patterns of employment.

The 'central' employment forecast was selected as the basis for a 'medium growth' option and the 'higher' employment forecast was selected as a 'maximum growth' option.

⁵ *Cambridgeshire and Peterborough Devolution Deal*. March 2017.

Additional employment generates a demand for additional housing from those who move into an area to take up those jobs. To provide a consistent understanding of the homes that might be required to support jobs, alongside an understanding of the minimum housing need and the jobs that that minimum would support, these employment figures were converted into housing growth figures (the *Greater Cambridge Housing and Employment Relationships Report*).

To translate jobs growth to housing growth it is necessary to apply a number of assumptions, including in particular commuting assumptions. In the first instance, the *Greater Cambridge Housing and Employment Relationships Report* used a default assumption of Census 2011 commuting patterns (noting that the Census remains the most up to date comprehensive source of commuting data until publication of Census 2021 data) to inform the identification of:

- housing growth levels generated by the Central and Higher employment growth forecasts. Applying these existing commuting assumptions provides an understanding of the number of homes that might need to be provided to meet those higher forecasts, both within Greater Cambridge and in locations outside of Greater Cambridge.
- the jobs growth supported by the Standard Method housing figure. Existing commuting patterns are assumed to be carried forward under the standard method, where it is used by adjoining districts as part of their own plan making.

For the Central and Higher employment growth forecasts, the *Greater Cambridge Housing and Employment Relationships Report* also undertook a sensitivity test to understand the total additional housing growth generated by additional jobs above those supported by the Standard Method, if that growth were to be delivered in full within the Greater Cambridge area. This assumed that all those workers filling the additional jobs would live within Greater Cambridge (a 1:1 commuting ratio) rather than assuming further in-commuting from neighbouring districts. Across Greater Cambridge, using the 1:1 ratio for additional jobs shows housing growth for Greater Cambridge around 114 dwellings per annum (dpa) higher for the Central forecast

and 141 dpa (for the Higher forecast) than when using the Census 2011-based commuting assumptions.

For the purposes of testing of strategic options, the minimum and medium option assumes the continuation of 2011 Census commuting patterns, relying on this as a default assumption. For the maximum growth option, the Councils assumed the 1:1 commuting assumption, in order to test a maximum housing growth level for Greater Cambridge to go with the maximum jobs forecast. Applying these assumptions at this strategic options stage does not prejudice a decision on which approach the Councils might take on this issue when determining a preferred growth level option for the plan itself.

Growth levels for testing

Drawing on the above, the range of reasonable growth options to be taken forward for testing is as follows:

Table 2: Growth options, 2020-41 (rounded up to the nearest hundred)

Growth scenario	Employment (jobs)	Housing (dwellings)
Minimum	45,800	36,700
Medium	58,500	42,000
Maximum	79,500	57,000

Note: a typographical error was identified in the Employment Land Review during the period of testing the strategic options, such that the maximum employment growth forecast is for 78,800 jobs and 56,500 homes respectively. The differences between the figures included in the table above for testing and these revised figures are not considered to be significant in the context of this strategic testing stage.

The jobs for 2020-2041 identified in the table above are for all jobs. Allocations for employment land (business uses such as offices, research and development and industrial uses) in Local Plans only account for a relatively small proportion of overall jobs. Local Plans do not allocate land for the very significant proportion of jobs arising in other population-driven sectors such as shops, leisure and education.

Guided by the Employment Land Review, the split of jobs between business uses and non-business uses are set out in the table below.

Table 2: Growth options for jobs, 2020-41

Requirement	Minimum	Medium	Maximum
Total jobs requirement	45,800	58,500	79,500
Business use jobs requirement	10,765	20,625	26,735

Further detail on the approach to testing growth levels within the strategic spatial options is set out at 3.4.2 How much? - Establishing the number of homes to find and 3.4.3 How much? – Identifying the number and location of jobs.

Covid-19 impacts

This work is being kept under review, and at this point in time it has not considered the economic impacts of the Covid-19 pandemic.

Identifying the reasonable spatial strategy options

This section identifies the full range of reasonable spatial strategy options for testing.

These aspects are summarised below, and explored in full at Appendix 3: Identifying the full range of reasonable spatial options. This document seeks to:

- assess whether the spatial choices set out in the Greater Cambridge Local Plan: First Conversation consultation are indeed reasonable; and
- identify whether there are any additional reasonable spatial options that should be added to the First Conversation choices.

In considering the reasonable options it is important to note that it is not practicable or reasonable to identify every potential minor variation of a spatial strategy. The intention of these options will be to test the main choices available, acknowledging that the final preferred scenario may represent a hybrid of these.

Greater Cambridge Local Plan First Conversation options

The Greater Cambridge Local Plan First Conversation (Issues and Options) consultation was held in January-February 2020. The consultation included the following six high level spatial choices:

- Densification of existing urban areas
- Edge of Cambridge - outside the Green Belt
- Edge of Cambridge - Green Belt
- Dispersal - new settlements
- Dispersal - villages
- Public transport corridors

The spatial choices above were identified by the Councils as reasonable options drawing upon the development strategy options considered for the Councils' current Local Plans, as well as considering spatial options identified in the recent Cambridgeshire & Peterborough Independent Economic Review (CPIER) and other approaches taken nationally.

The consultation acknowledged that the best scenario could potentially involve some growth in all of these locations but in different proportions depending upon the prioritisation of the themes in the plan.

1.1.1.1 Sustainability Appraisal of First Conversation spatial choices

The [Sustainability Appraisal](#) assessed these choices at a high level against each Sustainability Appraisal objective. However, many of the potential effects identified are dependent on the exact location, layout and design of development.

In summary, the Sustainability Appraisal found that:

- Densification: performs well against the Sustainability Appraisal objectives compared with many of the other options, but not against all Sustainability Appraisal objectives.
- Edge of Cambridge – Outside the Green Belt: performs well against most of the Sustainability Appraisal objectives, with no potential significant negative effects identified.

- Edge of Cambridge – Green Belt: performs well against most Sustainability Appraisal objectives, although not quite as well as Densification and Edge of Cambridge – Outside the Green Belt but generally better than Dispersal: New Settlements, Public transport corridors, and Dispersal: Villages.
- New Settlements and Public transport corridors: perform similarly, although the effects against individual objectives differ.
- Dispersal – Villages: is likely to be the least sustainable option, as it consistently scores poorly against a number of Sustainability Appraisal objectives compared with the alternatives.

In practice, the actual effects are heavily dependent upon the precise location and scale of development, the quality of design and the delivery of supporting infrastructure. Therefore, these high-level results need to be treated with a considerable degree of caution.

1.1.1.2 Testing of First Conversation options

Assessment of the First Conversation options at Appendix 2: Identifying the full range of reasonable spatial options confirmed that all six First Conversation options should be taken forward for strategic options testing.

Identifying any additional reasonable spatial options

Consideration of identifying any additional reasonable spatial options included sifting of a long list of 97 ideas (set out at Annex B of Appendix 2: Identifying the full range of reasonable spatial options) and full testing of 29 shortlisted ideas (set out at Annex C of the same document).

Full assessment identified the following options as being reasonable and substantively different to the First Conversation options as above.

- Principle B04: Integrate uses including housing and employment
- Option C03: Supporting an existing high-tech corridor
- Option C13: All development located in the high-tech growth area (All in Science Vale)
- Principle E03: Housing in close proximity to employment/innovation centres
- Principle B05: Explicitly rely on existing or proposed transport infrastructure

- Option C08: Expanded growth area
- Option E08: A428 Corridor
- Principle D24: Nature First
- Principle E21: Nature Recovery Network

A cross-check review and further exploration of the options identified as being reasonable and substantively different to the First Conversation options is set out at Annexes D and E of Appendix 3: Identifying the full range of reasonable spatial options. These tasks identified the following options as being reasonable, substantively different to First Conversation options, and distinct from each other. These options are therefore added as options for testing at a strategic level:

- Supporting a high-tech corridor by integrating homes and jobs
- Expanding a growth area around transport nodes

List of reasonable spatial options for testing

Drawing on the above, the following options are to be taken forward for testing as strategic spatial options:

- Densification of existing urban areas
- Edge of Cambridge - outside the Green Belt
- Edge of Cambridge - Green Belt
- Dispersal - new settlements
- Dispersal - villages
- Public transport corridors
- Supporting a high-tech corridor by integrating homes and jobs
- Expanding a growth area around transport nodes

Further to the above considerations, the Sustainability Appraisal consultants, and legal advisors, have been involved in discussions as to whether the strategic spatial options identified appropriately cover reasonable alternatives.

Strategic Spatial Options for testing

Description of the strategic options

This section describes, for each strategic spatial option and growth scenario, the distribution of growth between the sources of supply identified in the 3. Strategic Options Methodology section. These include the option focus source of supply, and where that supply is exhausted, based upon reasoned estimates of capacity (set out at 3.4.4 Where: Establishing sources of new supply), additional sources of supply to make up balance.

Spatial Scenario 1: Focus on Densification of existing urban areas

Outline description

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge: the last major brownfield site within Cambridge urban area is at North East Cambridge which is being taken forward separately via an Area Action Plan.

Detailed description

Minimum (historic delivery rates)

Broad areas to include:

Option focus source of supply

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- Cambridge urban area (low density) – not total capacity, only enough dwellings to fulfil balance to find

Medium (historic delivery rates)

Broad areas to include:

Option focus source of supply

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- Cambridge urban area (medium density)

Additional sources of supply to make up balance

- Cambridge Airport (initial phase post 2030, outside Green Belt, using historic delivery rates)
- Edge of Cambridge - Green Belt (equivalent to one site / broad location, using historic delivery rates) – not total capacity, only enough dwellings to fulfil balance to find

Maximum (higher delivery rates)

N.B. Assumes additional delivery by 2041 at committed new settlements.

Broad areas to include:

Option focus source of supply

- North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))
- Cambridge urban area (at high density)

Additional sources of supply to make up balance

- Cambridge airport (initial phase post 2030, outside Green Belt, higher delivery rates) – delivery by 2041 constrained to provide only enough dwellings to fulfil balance to find

Spatial Scenario 2: Focus on Edge of Cambridge: outside Green Belt

Outline Description

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

Detailed description

Minimum (historic delivery rates)

Broad areas to include:

Option focus source of supply

- Cambridge airport (initial phase post 2030, outside Green Belt, using historic delivery rates)

Additional sources of supply to make up balance

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- One site at a Rural Centre outside of the Green Belt to make up balance to find

Medium (historic delivery rates)

Broad areas to include:

Option focus source of supply

- Cambridge airport (initial phase post 2030, outside Green Belt, using historic delivery rates)

Additional sources of supply to make up balance

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- Two smaller new settlements of 4,500 dwellings on public transport corridors to meet the balance to find (delivery by 2041, using historic delivery rates)
- Balance to find spread across the Rural Centre (30%) and Minor Rural Centres (70%) outside of the Green Belt

Maximum (higher delivery rates)

N.B. Assumes additional delivery by 2041 at committed new settlements.

Broad areas to include:

Option focus source of supply

- Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates)

Additional sources of supply to make up balance

- North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))
- One larger new settlement of 9,000 dwellings on a public transport corridor (delivery by 2041, using higher delivery rates but constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure)

- One smaller new settlement of 4,500 dwellings on a public transport corridor (delivery by 2041, using higher delivery rates but constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure)

Spatial Scenario 3: Focus on Edge of Cambridge: Green Belt

Outline Description

This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

Detailed Description

Minimum (historic delivery rates)

Option focus source of supply

- Edge of Cambridge - Green Belt (equivalent to three sites / broad locations, with development limited to ensure that the strategic option homes total equals the balance to find.

Medium (historic delivery rates)

Broad areas to include:

Option focus source of supply

- Edge of Cambridge - Green Belt (equivalent to five sites / broad locations, using historic delivery rates)

Additional sources of supply to make up balance

- Minimal balance to find located within Cambridge urban area.

Maximum (higher delivery rates)

N.B. Assumes additional delivery by 2041 at committed new settlements.

Broad areas to include:

Option focus source of supply

- Edge of Cambridge - Green Belt (equivalent to five sites / broad locations, using higher delivery rates, with development limited to ensure the strategic option equals the balance to find).

Spatial Scenario 4: Focus on New Settlements

Outline Description

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

Detailed Description

Minimum (historic delivery rates)

Broad areas to include:

Option focus source of supply

- Two smaller new settlements of 4,500 dwellings on a public transport corridor (delivery by 2041, using historic delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).

Medium (historic delivery rates)

Broad areas to include:

Option focus source of supply

- Three new settlements on public transport corridors (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures), including:
 - Two larger new settlements of 9,000 dwellings
 - One smaller new settlement of 4,500 dwellings
- One smaller new settlement of 4,500 homes on the road network (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures).

Maximum (higher delivery rates)

N.B. Assumes additional delivery by 2041 at committed new settlements.

Broad areas to include:

Option focus source of supply

- Three new settlements on public transport corridors (delivery by 2041, using higher delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures), including:
 - Two larger new settlements of 9,000 dwellings
 - One smaller new settlement of 4,500 dwellings
- One smaller new settlement of 4,500 homes on the road network (delivery by 2041, using higher delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figures).

Spatial Scenario 5: Focus on Dispersal: Villages

Outline Description

This approach would spread new homes and jobs out to the villages.

Detailed Description

Minimum, medium and high growth options (historic delivery rates)

N.B. High growth option assumes additional delivery by 2041 at committed new settlements.

Option focus source of supply

- 40% of balance to find at Rural Centres
- 40% of balance to find at Minor Rural Centres (while this the same percentage of growth in total, because there are many more Minor Rural Centres than Rural Centres the absolute growth in each village is significantly greater for each Rural Centre).
- 17% of balance to find at Group villages
- 3% of balance to find at Infill villages

Spatial Scenario 6: Focus on Public transport corridors

Outline Description

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

Detailed Description

Minimum (historic delivery rates)

Option focus source of supply

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- One smaller new settlement of 4,500 homes on a public transport corridor (delivery by 2041, using historic delivery rates constrained ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).
- Minimal balance to find spread across eighteen villages sited along existing or proposed public transport corridors

Medium (historic delivery rates)

Broad areas to include:

Option focus source of supply

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)
- One larger new settlement of 9,000 homes on a public transport corridor (delivery by 2041, using historic delivery rates)
- Balance to find spread across eighteen villages sited along existing or proposed public transport corridors

Maximum (higher delivery rates)

N.B. Assumes additional delivery by 2041 at committed new settlements.

Broad areas to include:

Option focus source of supply

- North East Cambridge (delivery by 2041 assumption, using delivery rates as included in the housing trajectory in the draft North East Cambridge Area Action Plan (July 2020))
- One larger new settlement of 9,000 homes on a public transport corridor (delivery by 2041, using higher delivery rates)
- Balance to find spread across eighteen villages sited along existing or proposed public transport corridors

Spatial Scenario 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

Outline Description

This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

Detailed Description

Minimum (historic delivery rates)

Broad areas to include:

Option focus source of supply

- One smaller new settlement of 4,500 homes on a public transport corridor within the southern cluster area (delivery by 2041, using historic delivery rates)
- Balance to find distributed equally between the five villages located within the core southern cluster area that are also on a public transport corridor.

Medium (historic delivery rates)

Broad areas to include:

Option focus source of supply

- One smaller new settlement of 4,500 homes on a public transport corridor within the southern cluster area (delivery by 2041, using historic delivery rates)

- Balance to find spread across five villages sited along existing or proposed public transport corridors within the core southern cluster area (70%), and further villages within Southern Cluster core area not on PT corridors (including Group villages (20%) and Infill villages (10%).

Maximum (higher delivery rates)

N.B. Assumes additional delivery by 2041 at committed new settlements.

Broad areas to include:

Option focus source of supply

- One larger new settlement of 9,000 homes on a public transport corridor within the southern cluster (delivery by 2041, using higher delivery rates)
- Balance to find spread equally across five villages sited at existing or proposed public transport nodes within the southern cluster.

Additional sources of supply to make up balance

- Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates)
- North East Cambridge (delivery by 2041 assumption, using delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).

Spatial Scenario 8: Expanding a growth area around transport nodes

Outline Description

This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

Detailed Description

Minimum (historic delivery rates)

Broad areas to include:

Option focus source of supply

- Expansion of Cambourne by the equivalent of one smaller new settlement (delivery by 2041, using historic delivery rates)
 - completions and commitments + 4,500 dwellings = 11,300 (and close to further development of 3,500 at Bourn Airfield New Village)
- Balance to find spread across three villages sited along the A428 public transport corridor

Medium (historic delivery rates)

Broad areas to include:

Option focus source of supply

- Expansion of Cambourne by the equivalent of one smaller new settlement (delivery by 2041, using historic delivery rates)
 - completions and commitments + 4,500 dwellings = 11,300 dwellings (and close to further development of 3,500 at Bourn Airfield New Village)
- Balance to find spread across three villages sited along the A428 public transport corridor (60%) and four further Minor Rural Centre/Group villages sited within 5km of Cambourne (40%).

Additional sources of supply to make up balance

- North East Cambridge (delivery by 2041 assumption, using historic delivery rates)

Maximum (higher delivery rates)

N.B. Assumes additional delivery by 2041 at committed new settlements.

Broad areas to include:

Option focus source of supply

- Expansion of Cambourne by the equivalent of one larger new settlement (delivery by 2041, using higher delivery rates)
 - completions and commitments + 9,000 dwellings = 15,800 dwellings (and close to further development of 3,500 at Bourn Airfield New Village)
- Balance to find (accounting for sources of supply below) spread across:
 - three villages sited along the A428 public transport corridor (60%)

- one Minor Rural Centre and three Group villages within 5km of Cambourne (40%)

Additional sources of supply to make up balance

- Cambridge airport (initial phase post 2030, outside Green Belt, using higher delivery rates)
- North East Cambridge (delivery by 2041 assumption, using delivery rates constrained to ensure that the strategic option homes total equals the balance to find. This does not affect the total homes all time figure).

Strategic spatial options numbers for testing

Homes

Balance to find

- Growth requirement comprises: homes requirements 2020-2041, derived from Greater Cambridge Employment Land Review and Greater Cambridge Housing and Employment Relationships Report
- Total figure to find (growth requirement + 10% buffer) comprises: growth figure + a 10% buffer
- Supply comprises: existing commitments including permissions and adopted allocations, a windfall allowance, plus Wellcome Genome Campus (with resolution to grant permission) and minus Cambridge uncertain allocations
- Committed new settlements - additional delivery comprises: under the higher delivery rates assumption incorporated into the maximum growth scenario for all options, a further 8,600 dwellings could be delivered from the existing committed new settlements by 2041. This figure is therefore included in the calculation to identify the balance to find under the maximum growth scenario. Further detailed information is provided in Appendix 6.
- Balance to be made in new allocations = Total figure to find – supply – committed new settlements (if relevant)

Strategic options

For each option and each growth scenario, the balance to be made in new allocations is distributed across the sources of supply as informed by the spatial principles referred to above. For more detail regarding the sources of supply, including capacity, availability and delivery, see 3.4.4 Where? Establishing sources of new supply.

Columns under the heading 'All time' refer to the period 2020 until build out has completed of all planned growth.

The minimum and medium growth scenarios include historic delivery rates. The maximum growth scenarios include higher delivery rates. For more detail see 3.4.2 How much? - Establishing the number of homes to find.

Villages

Village categories are applied in the following options, relying on general sustainability of villages: 1. Densification; 2. Edge of Cambridge - Non Green Belt; 3. Edge of Cambridge - Green Belt; 4. New Settlements; and 5. Villages. For these options, village rows are set out as follows, if development has been assumed to have been located in that category:

- Villages Total
- Rural centres
- Minor rural centres
- Group
- Infill

Village categories are not applied in the following options as these rely on proximity to public transport nodes: 6. Public Transport Corridors, 7. Supporting a high-tech corridor by integrating homes and jobs (southern cluster) and 8. Expanding a growth area around transport nodes.

Spatial Scenario 1: Focus on Densification of existing urban areas

Balance to find

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Growth requirement	36,700	N/A	42,000	N/A	57,000	N/A
Total figure to find (growth req. + 10% buffer)	40,300	N/A	46,200	N/A	62,700	N/A
Supply	36,400	N/A	36,400	N/A	36,400	N/A
Committed new settlements - additional delivery	0	N/A	0	N/A	8,600	N/A
Balance to be made in new allocations	3,900	N/A	9,800	N/A	17,700	N/A

Strategic options

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	2,000	2,000	5,600	5,600	6,800	6,800
North East Cambridge	1,900	8,300	1,900	8,300	8,000	8,300
Cambridge Airport (safeguarded land)	-	-	1,900	9,500	2,900	9,500
Green Belt Fringe	-	-	400	400	-	-
New settlements on public transport corridors	-	-	-	-	-	-
New settlements on road network	-	-	-	-	-	-
Villages Total	-	-	-	-	-	-
Total	3,900	10,300	9,800	23,800	17,700	24,600

Spatial Scenario 2: Focus on Edge of Cambridge: outside Green Belt

Balance to find

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Growth requirement	36,700	N/A	42,000	N/A	57,000	N/A
Total figure to find (growth req. + 10% buffer)	40,300	N/A	46,200	N/A	62,700	N/A
Supply	36,400	N/A	36,400	N/A	36,400	N/A
Committed new settlements - additional delivery	0	N/A	0	N/A	8600	N/A
Balance to be made in new allocations	3,900	N/A	9,800	N/A	17,700	N/A

Strategic options

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	-	-	-	-	-	-
North East Cambridge	1,900	8,300	1,900	8,300	8,000	8,300
Cambridge Airport (safeguarded land)	1,900	9,500	1,900	9,500	3,800	9,500
Green Belt Fringe	-	-	-	-	-	-
New settlements on public transport corridors	-	-	5,000	9,000	5,900	13,500
New settlements on road network	-	-	-	-	-	-
Villages Total	100	100	1,000	1,000	-	-
Rural Centres	100	100	300	300		
Minor Rural Centres			700	700		

Total	3,900	17,900	9,800	27,800	17,700	31,300
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Spatial Scenario 3: Focus on Edge of Cambridge: Green Belt

Balance to find

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Growth requirement	36,700	N/A	42,000	N/A	57,000	N/A
Total figure to find (growth req. + 10% buffer)	40,300	N/A	46,200	N/A	62,700	N/A
Supply	36,400	N/A	36,400	N/A	36,400	N/A
Committed new settlements - additional delivery	0	N/A	0	N/A	8600	N/A
Balance to be made in new allocations	3,900	N/A	9,800	N/A	17,700	N/A

Strategic options

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	-	-	300	300	-	-
North East Cambridge	-	-	-	-	-	-
Cambridge Airport (safeguarded land)	-	-	-	-	-	-
Green Belt Fringe	3,900	3,900	9,500	9,500	17,700	17,700
New settlements on public transport corridors	-	-	-	-	-	-
New settlements on road network	-	-	-	-	-	-
Villages Total	-	-	-	-	-	-
Total	3,900	3,900	9,800	9,800	17,700	17,700

Spatial Scenario 4: Focus on New Settlements

Balance to find

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Growth requirement	36,700	N/A	42,000	N/A	57,000	N/A
Total figure to find (growth req. + 10% buffer)	40,300	N/A	46,200	N/A	62,700	N/A
Supply	36,400	N/A	36,400	N/A	36,400	N/A
Committed new settlements - additional delivery	0	N/A	0	N/A	8,600	N/A
Balance to be made in new allocations:	3,900	N/A	9,800	N/A	17,700	N/A

Strategic options

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	-	-	-	-	-	-
North East Cambridge	-	-	-	-	-	-
Cambridge Airport (safeguarded land)	-	-	-	-	-	-
Green Belt Fringe	-	-	-	-	-	-
New settlements on public transport corridors	3,900	9,000	7,350	22,500	13,150	22,500
New settlements on road network	-	-	2,450	4,500	4,550	9,000
Villages Total	-	-	-	-	-	-
Total	3,900	9,000	9,800	27,000	17,700	31,500

Spatial Scenario 5: Focus on Dispersal: Villages

Balance to find

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Growth requirement	36,700	N/A	42,000	N/A	57,000	N/A
Total figure to find (growth req. + 10% buffer)	40,300	N/A	46,200	N/A	62,700	N/A
Supply	36,400	N/A	36,400	N/A	36,400	N/A
Committed new settlements - additional delivery	0	N/A	0	N/A	8600	N/A
Balance to be made in new allocations:	3,900	N/A	9,800	N/A	17,700	N/A

Strategic options

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	-	-	-		-	
North East Cambridge	-		-		-	
Cambridge Airport (safeguarded land)	-		-		-	
Green Belt Fringe	-		-		-	
New settlements on public transport corridors	-		-		-	
New settlements on road network	-		-		-	
Villages Total	3,900	3,900	9,800	9,800	17,700	17,700
Rural Centres	1,560	1,560	3,920	3,920	7,080	7,080

Minor Rural Centres	1,560	1,560	3,920	3,920	7,080	7,080
Group	663	663	1,666	1,666	3,009	3,009
Infill	117	117	294	294	531	531
Total	3,900	3,900	9,800	9,800	17,700	17,700

Spatial Scenario 6: Focus on Public transport corridors

Balance to find

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Growth requirement	36,700	N/A	42,000	N/A	57,000	N/A
Total figure to find (growth req. + 10% buffer)	40,300	N/A	46,200	N/A	62,700	N/A
Supply	36,400	N/A	36,400	N/A	36,400	N/A
Committed new settlements - additional delivery	0	N/A	0	N/A	8600	N/A
Balance to be made in new allocations:	3,900	N/A	9,800	N/A	17,700	N/A

Strategic options

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	-	-	-	-	-	-
North East Cambridge	1,900	8,300	1,900	8,300	8,000	8,300
Cambridge Airport (safeguarded land)	-	-	-	-	-	-
Green Belt Fringe	-	-	-	-	-	-
New settlements on public transport corridors	1,900	4,500	2,500	9,000	5,100	9,000
New settlements on road network	-	-	-	-	-	-
Villages Total	100	100	5,400	5,400	4,600	4,600
Villages on Public Transport Corridors	100	100	5,400	5,400	4,600	4,600

Total	3,900	12,900	9,800	22,700	17,700	21,900
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Spatial Scenario 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

Balance to find

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Growth requirement	36,700	N/A	42,000	N/A	57,000	N/A
Total figure to find (growth req. + 10% buffer)	40,300	N/A	46,200	N/A	62,700	N/A
Supply	36,400	N/A	36,400	N/A	36,400	N/A
Committed new settlements - additional delivery	0	N/A	0	N/A	8600	N/A
Balance to be made in new allocations:	3,900	N/A	9,800	N/A	17,700	N/A

Strategic options

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	-	-	-	-	-	-
North East Cambridge	-	-	-	-	4,900	8,300
Cambridge Airport (safeguarded land)	-	-	-	-	3,800	9,500
Green Belt Fringe	-	-	-	-	-	-
New settlements on public transport corridors	2,500	4,500	2,500	4,500	5,100	9,000
New settlements on road network	-	-	-	-	-	-
Villages Total	1,400	1,400	7,300	7,300	3,900	3,900
Villages sited along existing or proposed public transport	1,400	1,400	5,110	5,110	3,900	3,900

corridors within the core southern cluster area						
Further villages within Southern Cluster core area not on PT corridors: Group	-	-	1,460	1,460		-
Further villages within Southern Cluster core area not on PT corridors: Infill	-	-	730	730		-
Total	3,900	5,900	9,800	11,800	17,700	30,700

Spatial Scenario 8: Expanding a growth area around transport nodes

Balance to find

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Growth requirement	36,700	N/A	42,000	N/A	57,000	N/A
Total figure to find (growth req. + 10% buffer)	40,300	N/A	46,200	N/A	62,700	N/A
Supply	36,400	N/A	36,400	N/A	36,400	N/A
Committed new settlements - additional delivery	0	N/A	0	N/A	8600	N/A
Balance to be made in new allocations:	3,900	N/A	9,800	N/A	17,700	N/A

Strategic options

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	-	-	-	-	-	-
North East Cambridge	-	-	1,900	8,300	4,900	8,300
Cambridge Airport (safeguarded land)	-	-	-	-	3,800	9,500
Green Belt Fringe	-	-	-	-	-	-
New settlements on public transport corridors	2,500	4,500	2,500	4,500	5,100	9,000
New settlements on road network	-	-	-	-	-	-
Villages Total	1,400	1,400	5,400	5,400	3,900	3,900
Villages sited along the A428 public transport corridor	1,400	1,400	3,240	3,240	2,340	2,340

Further Minor Rural Centre/Group villages sited within 5km of Cambourne	-	-	2,160	2,160	1,560	1,560
Total	3,900	5,900	9,800	18,200	17,700	30,700

Jobs

Counting homes, for the purposes of monitoring past delivery, and for estimating overall supply and future delivery, is relatively simple. In comparison, counting jobs is much more difficult for the following reasons:

- Jobs change is subject to far more variables than house building, and as a result is volatile and fast changing.
- Local Plans cannot make provision for jobs directly, but rather make provision for employment land (which can accommodate business floorspace, measured in square metres) to support jobs. As such it can only be estimated how many jobs such land might support.
- Allocations for employment land in Local Plans only account for a relatively small proportion of overall jobs – employment allocations are for jobs in B use classes (covering office, research and development and industrial uses). These don't currently account for the very significant proportion of jobs arising in other population-driven sectors such as shops, leisure and education.

For the purposes of modelling transport impacts in particular, it is necessary to consider specific distributions of jobs (rather than likely delivery of floorspace) as jobs are a key determinant of travel patterns. The Councils have therefore provided distributions of B use class jobs for each spatial option to the transport modelling team, for them to apply alongside standard assumptions for population driven non B use jobs sectors. The total number of jobs in each spatial option matches the maximum, medium or minimum jobs level as appropriate, in order that the modelling provides consistent testing of total homes and job numbers across each of the spatial options.

An explanation of the methodology used and the resulting distribution of jobs for each spatial option is set out in Appendix 7.

Strategic options methodology

This section sets out in full the approach taken to identifying strategic spatial options (i.e. the non-site specific distribution of growth) for each reasonable option identified above at section 1.4.3. List of reasonable options for testing, including:

- Identifying the minimum, medium and maximum growth balance to find through new allocations; and
- for each reasonable alternative, distributing growth between a range of broad areas of supply.

Overarching principles

The following principles will be used to guide the spatial options development:

- Not to predetermine any key element of the spatial strategy, such that no single broad spatial location for growth is included in all options.
- Be reasonable, defined as realistic, options, including:
 - informed by high-level estimates of the capacity and availability of broad spatial locations, taking into account environmental constraints,
 - informed by evidence-based assumptions about delivery rates, and
 - based on a consistent set of assumptions (such as incorporating committed transport schemes, and consistent assumptions about housing density).
- Take a policy-off approach in respect of spatial policy designations such as Green Belt and development frameworks (this approach assumes that these policy designations do not apply to enable a fuller consideration of development opportunities. Note the exception to this principle is Spatial Option 2: Edge of Cambridge – non Green Belt option, which explicitly seeks to explore a scenario in which the Green Belt was retained in its current form, in order to test all reasonable options, and also to address the NPPF principle referred to below at 3.2. Spatial principles).

Spatial principles

The NPPF has been used to identify a number of additional spatial principles to take into account in compiling the strategic spatial options. Further to this, a cross check

was also undertaken of the implications of Greater Cambridge Local Plan First Conversation Big Themes and Greater Cambridge Local Plan Sustainability Appraisal Objectives on principles for developing the strategic spatial options, including whether these had further implications for the strategic spatial options beyond those identified in relation to the NPPF. The conclusion to this exercise was that these did not add substantively to the NPPF principles set out below. For further detail refer to Appendix 1.

The NPPF spatial principles are set out below (with relevant NPPF paragraph numbers in brackets) and have informed:

- specific assumptions included within each strategic option, and
- the evidence required to inform these specific assumptions, if necessary.

Flexible plan-making to allow for change

- Principle: Plans should be sufficiently flexible to adapt to rapid change (11)
- Options assumption: A flexibility buffer of 10% is added to each growth level option for testing (for homes).

Account for environmental constraints

- Principle: Take into account environmental constraints as set out in NPPF footnote 6, such as habitat sites, heritage assets, and flood risk (11)
- Options assumption: Account for environmental constraints when identifying strategic options. Note the approach to this is explained below at 3.3.2 Constraints.
- Evidence:
 - Constraints mapping to inform options development.
 - Strategic Flood Risk Assessment/Water Cycle Study and Habitat Regulations Assessment consultants to comment on options as they are developed.

Account for cross boundary impacts

- Principle: Account for any unmet needs arising from neighbouring areas (11, 27)

- Options assumption: As set out in the [Greater Cambridge Duty to Cooperate Proposed Approach, June 2020](#), the councils are engaging on an ongoing basis with neighbouring authorities under the duty to cooperate, including to understand whether any neighbours are asking the councils to take any unmet needs. At the time of writing, no neighbouring authorities have asked the councils to do so.
- Principle: Take account of neighbouring authority proposals to locate strategic growth close to the boundary of Greater Cambridge (24-27).
- Options assumption: A list of neighbouring adopted and emerging Local Plans and the strategic growth included within them is set out at Appendix 4. It is not considered that these proposals should substantively affect the development of the strategic options.

Deliverable, including in the first five years

- Principle: Take into account understanding of delivery rates and land availability when considering reasonable growth level options, and when distributing growth between options (35, 72).
- Options assumptions:
 - Include evidence-based assumptions about delivery rates when distributing growth between sources of supply.
 - Incorporate broad awareness of available sites when distributing growth between sources of supply.
 - Identify the likely pattern of development at the end of the plan period, but also once all development has been built out, acknowledging that larger scale development sites such as new settlements have longer lead in times and will often be built out over longer than a plan period, but can provide certainty with regard to the development industry, investment in infrastructure and funding sources.
- Evidence:
 - Greater Cambridge Housing Trajectory and Five Year Housing Land Supply document (November 2019) sets out assumptions about delivery rates based upon historic rates.

- Housing and Economic Land Availability Assessment Call for Sites provides awareness of sites submitted to the Councils for development, to provide an awareness of available sites, but not be tied to them.
- Principle: Take into account the need to maintain a five-year housing supply when distributing growth between sources of supply in strategic options (67, 73, 75).
- Options assumption:
 - Include a proportion of smaller sites in nearly (see below) every option, to support maintaining a five-year housing land supply.
 - Notwithstanding this policy requirement, distributing a large proportion of the growth requirement to lots of smaller sites may not support Climate Act requirements to support zero carbon targets. Given that the Act is a statutory requirement in tension with national policy requirements, options are included that include greater concentrations of growth with fewer smaller sites, on the basis that it may better support the achievement of zero carbon.

Include proportion of small sites

- Principle: Local Plan to identify land to accommodate “at least 10% of housing requirement on sites no larger than one hectare; unless it can be shown, through the preparation of relevant plan policies, that there are strong reasons why this 10% target cannot be achieved” (68).
- Options assumption:
 - Further work is being carried out to understand the implications of this for Greater Cambridge. However, initial calculations indicate further sites will be required. The implication of this will be that a preferred spatial strategy will require an element of growth in the urban area and villages to provide for this requirement. Note that at this strategic spatial options stage, the options have been made intentionally distinct, and none is expressly intended to form a preferred option. As such, the small sites principle has been considered qualitatively for each strategic option, but a 10% requirement has not informed distribution of growth.

- Notwithstanding the above, distributing a large proportion of the growth requirement to lots of smaller sites may not support Climate Act requirements to support zero carbon targets. Given that the Act is a statutory requirement in tension with national policy requirements, options are included that include greater concentrations of growth with fewer smaller sites, on the basis that it may better support the achievement of zero carbon.

Integrate development with infrastructure

- Principles:
 - Consider relationship with existing and/or planned infrastructure (72)
 - Locate growth closest to existing or proposed transport infrastructure (102,103)
 - Locate growth in locations that minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities (104)
- Options assumption: Within the constraints of each strategic option, locate growth close to existing/planned infrastructure
- Evidence:
 - Transport Study - the Transport Existing Conditions Report identifies existing transport provision, and also planned transport network improvements that could influence growth locations. See also 3.3.1.1 Existing and planned transport infrastructure below.
 - Sustainable settlement sizes review (see Appendix 4) – has considered what are sustainable sizes and locations for communities in a Greater Cambridge context, including considering infrastructure provision and NPPF Design principles (72, 127)
 - Infrastructure Delivery Plan and Viability Study

Support sustainability of rural settlements

- Principles:
 - In rural areas, consider opportunities to support local services, perhaps in one location to support services in nearby villages (78)

- Options assumption: When locating supply at existing settlements in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure.

Make effective use of land

- Principles:
 - Make as much use as possible of previously-developed or ‘brownfield’ land (117)
 - Optimise the density of development, promoting a significant uplift in minimum density standards in town and city centres and other locations well served by public transport (123,137)
- Options assumption: Within all options, make assumptions about the capacity of existing urban areas, including in ways that seek to maximise densities.

Account for the importance of Green Belt

- Principles:
 - Only alter Green Belt boundaries in exceptional circumstances (136)
 - Before concluding that exceptional circumstances exist to justify changes to Green Belt boundaries, the strategic policy-making authority should be able to demonstrate that it has examined fully all other reasonable options for meeting its identified need for development (137)
 - When drawing up or reviewing Green Belt boundaries, the need to promote sustainable patterns of development should be taken into account (137)
 - Consider the consequences for sustainable development of channelling development towards urban areas inside the Green Belt boundary, towards towns and villages inset within the Green Belt or towards locations beyond the outer Green Belt boundary (137)
 - Where it has been concluded that it is necessary to release Green Belt land for development, plans should give first consideration to land which has been previously-developed and/or is well-served by public transport (137)

- Options assumptions:
 - Within the range of options tested, to support exploration of whether exceptional circumstances for changes to Green Belt boundaries exist (assumed to relate to relative sustainability impacts), include options that locate development outside of Cambridge Green Belt boundaries (i.e. assuming that exceptional circumstances don't exist to justify changes to Green Belt boundaries) and also options that locate development within Cambridge Green Belt boundaries (i.e. assuming that exceptional circumstances do exist to justify changes to Green Belt boundaries).
 - Within options that locate development within Green Belt boundaries, give first consideration to sources of supply that are previously-developed and/or are well-served by public transport.
- Evidence: A detailed study of the Cambridge Green Belt will be carried out, to identify the contribution land makes to Green Belt purposes, in order to understand the level of harm that would be caused by development in different areas of the Green Belt. This will be a key consideration when considering Green Belt land release later in the plan process, but will not be completed in time to form a part of the consideration of Strategic Spatial Options.

Opportunities and constraints

Opportunities

Existing and planned transport infrastructure

Existing and future transport connections within Greater Cambridge have been identified to inform the compilation of the strategic spatial options, supporting the NPPF principle of integrating development with transport infrastructure.

Existing transport connections are identified on Map 1a. in Appendix 8.

Further to this and as shown on Map 3a. at Appendix 8, a number of transport infrastructure schemes are proposed in order to support ongoing growth around

Greater Cambridge and the wider area, creating six current or future public transport corridors radiating out from Cambridge as set out below. Awareness of these six corridors, including the level of certainty of delivery of schemes, has been taken into account in compiling the options (schemes within Cambridge urban area have been identified for completeness but have not informed compilation of options).

Cambridge urban area

- Medium term future (~2031): Greater Cambridge Partnership (GCP) City Access projects
- Shorter term future (~2025): Cambridge South Station
- Longer term future (~2030): Cambridgeshire Autonomous Metro (CAM) tunnels section

North of Cambridge

- Existing/shorter term future (~2025): Waterbeach Station/Waterbeach New Town station on Kings Lynn to Kings Cross rail line
- Shorter term future (~2025): GCP Waterbeach to Cambridge North scheme

East of Cambridge

- Shorter term future (~2026): GCP Cambridge Eastern Gateway scheme
- Longer term future (2030+?): CAM East Regional route to Mildenhall
- Longer term future (~2030?): improvements to rail line to Newmarket

South East of Cambridge

- Existing: Cambridge to Liverpool Street rail line
- Shorter term future (~2025): GCP Cambridge South East Transport Scheme
- Longer term future (2030+?): CAM South East regional route to Haverhill

South West of Cambridge

- Existing: Cambridge to Kings Cross rail line

West of Cambridge

- Shorter term future (~2025): GCP Cambourne to Cambridge scheme
- Longer term future (~2030): East West Rail line with station at Cambourne
- Longer term future (2030+?): CAM West regional route to St Neots

North West of Cambridge

- Existing: Cambridgeshire Guided Busway to St Ives

Existing employment locations

Existing scientific and other employment locations have been mapped to support identification of development opportunities close to them, addressing the NPPF spatial principle of locating jobs and homes in close proximity. Existing employment locations are identified on Map 3a. in Appendix 8.

Existing services

Mapping of existing services in villages in particular supports the NPPF spatial principle of incorporating assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure. As a proxy for identifying the services themselves, South Cambridgeshire Local Plan 2018 settlement category designations of Rural Centres, Minor Rural Centres, Group Villages and Infill Villages have been used.

Environmental opportunities

The Greater Cambridge Local Plan Green Infrastructure Opportunity Mapping will in due course identify broad priority zones for green infrastructure. The relationship of these priority areas with the strategic spatial options set out in this paper will be considered in order to inform discussion around a preferred option.

Constraints

Delivery rates

Overview

To account for the NPPF requirement for Local Plans to be deliverable, housing delivery assumptions have been incorporated into the strategic options, and as such are a constraint on the level of growth that can be delivered within the plan period of 2020-2041. Evidence of historic housing delivery rates for different types of development have been used to inform the assumptions included in the strategic options. Reference to the specific assumptions arising is made in the relevant sections under 3.4.4 Where? Establishing sources of new supply. The approach to

delivery assumptions is set out in full for homes in Appendix 6 and for jobs in Appendix 7.

Strategic sites delivery in relation to plan period

Notwithstanding the need to account for what can be delivered by the end of the plan period, the build out of a new settlement of several thousand homes will continue across more than one plan period. Depending on the assumptions for build out rates, any new strategic sites allocated in the Greater Cambridge Local Plan might only deliver a proportion of their new homes by 2041, at which point it would make up a certain proportion of overall growth within the plan period. However, by the time it had been completed, that new strategic site would form a much larger proportion of the overall pattern of development within Greater Cambridge. Jobs at new settlements will also be delivered throughout their development, with only a proportion anticipated by 2041.

To account for the dual needs - of ensuring that options are deliverable to 2041, while maintaining awareness of the overall impact of options once all development is built out, the options tables for homes in the Strategic spatial options numbers for testing section and the options table for jobs in Appendix 7 show development figures for homes and jobs to 2041 and homes and jobs 'all built out'.

Enabling sustainable choices

In relation to the dual needs set out above, while it is clearly realistic and therefore reasonable to use historic housing delivery rates in principle to inform the distribution of growth in the strategic spatial options, using these in early testing under a maximum growth scenario led to unrealistic and unreasonable spatial choices to support a deliverable plan to 2041.

For example, using such historic rates would mean that, say, ten new settlements would be needed to provide sufficient delivery to achieve the maximum option by 2041, which it would clearly be unrealistic to deliver simultaneously. Further to this, considering sustainability objectives would suggest it would be more sustainable to concentrate growth in a smaller number of locations which could support greater infrastructure provision and generate greater critical population mass. This challenge

is also relevant, albeit to a lesser extent, when distributing growth for the minimum and medium options.

As such, it is considered that the maximum growth scenario is only reasonable if delivery rates can be increased beyond historic rates. The Councils do not currently have evidence to demonstrate that a step change increase in delivery rates is achievable. As such, achieving this would likely require a significantly different model of delivery. Further evidence on this will be provided by the Housing Delivery Study referred to elsewhere in this document.

Drawing on the above, while the distribution of growth under the minimum and medium growth scenarios relates to cautious historic delivery rates as used in published housing trajectory calculations, the distribution of growth under the maximum growth scenario relates to higher delivery rates evidenced in specific locations within Greater Cambridge. To reiterate, the Councils do not have evidence to demonstrate that a step change increase in delivery rates is achievable. Further exploration of whether and how such an increase could be achieved will be required before pursuing this approach further through the plan process.

Relationship of 10% buffer and assumed delivery rates

Following NPPF principles a 10% buffer has been added to the homes requirement under each growth scenario to provide a flexible plan. Clearly were this buffer not to be applied the balance to find under each scenario would be lower, making each scenario easier to complete using historic delivery rates. However, given that the final plan will likely have to provide for a buffer to ensure flexibility, it is considered reasonable to explore at this point the impacts of growth options including a buffer, which therefore brings with it the challenges explored above regarding delivery rates.

Further detail on delivery rates is set out for each source of supply at 3.4.4 Where? Establishing sources of new supply.

Environmental constraints

Environmental constraints provide a rough visual guide to where would be appropriate or not to locate development when considered at a strategic level. The list of environmental constraints considered include:

Absolute constraints

- Flood Zones
- Special Areas of Conservation
- Sites of Special Scientific Interest
- Historic Parks and Gardens
- County Wildlife Sites
- Country Parks
- Ancient Woodlands

Constraints to consider

- Conservation Areas
- Listed Buildings
- Scheduled Ancient Monuments
- Sites safeguarded for minerals

A range of baseline mapping is included in the Sustainability Appraisal Scoping Report, which is also relevant, particularly regarding development constraints. Environmental constraints are identified in the figures included within [Greater Cambridge Local Plan Sustainability Appraisal Scoping Report](#).

Outline approach

The approach to identifying growth levels and strategic spatial options includes the following steps when considering homes and jobs. Key assumptions and constraints for each step are set out in detail in the sections below.

Establishing the Baseline

The first step in this process is to document the baseline, capturing the current situation regarding the distribution of homes and jobs. A baseline paper, setting out the total amount and location of existing population, homes and jobs across Greater

Cambridge is included in Appendix 5. Maps have been prepared to illustrate the location of existing development, and are included in Appendix 8.

A key feature for this plan is the level of development already committed. The [Greater Cambridge Housing Trajectory \(April 2020\)](#) sets out anticipated delivery from existing housing commitments that have been assessed as either deliverable and / or developable, based on the definitions in the glossary of the NPPF (February 2019). The [Greater Cambridge Authority Monitoring Report 2018-2019](#) (August 2020) sets out business land and floorspace commitments. There are high levels of existing employment commitments, from existing allocations or land with planning permission.

How much? – Establishing the number of homes to find

The sections below set out the steps taken to identify the housing growth needing to be identified through new allocations.

Homes

Stage	Step	Minimum	Medium	Maximum
A: Growth requirement	Homes requirement	36,603	41,915	56,935
B: Growth requirement + flexibility buffer	Homes requirement + 10% buffer (B = A x 1.1)	40,263	46,106	62,629
C: Existing commitments	Permissions and adopted allocations	30,807	30,807	30,807
D: Windfall allowance	Windfall allowance	5,600	5,600	5,600
E: Balance to be made in new allocations	$E = B - (C+D)$	3,856 (rounded to 3,900)	9,699 (rounded to 9,700)	26,222 (rounded to 26,300)

A: Growth requirement

Minimum, medium and maximum options are proposed for testing as set out in the 1.3.1. Identifying growth level options section. Please note that while the requirement and commitments figures set out above are unrounded, for the purposes of identifying the strategic options the balance to find has been rounded up to the nearest 100 dwellings.

Further work required

- Outputs from the Housing Delivery Study regarding delivery rates of different types of site and overall ability to deliver dwelling numbers.
- Outputs from various other workstreams that will clarify environmental capacity and therefore ability to accommodate growth e.g. Water Cycle Strategy.

Sensitivity testing

Further sensitivity tests (as set out above at 1.3.1 Growth levels for testing) could be added at a later stage to consider:

- Deliverability led scenario if the maximum growth level was shown to be beyond deliverable numbers, or subject to environmental constraints.

B: 10% buffer

As noted above at 3.2 Spatial principles, NPPF paragraph 11a requires that “plans should...be sufficiently flexible to adapt to rapid change”. To respond to this, a buffer of 10% is added to the relevant housing growth requirement under each scenario.

C: Existing commitments

The amount of housing committed in Greater Cambridge for 2019-2033 is set out in the [Greater Cambridge Housing Trajectory \(April 2020\)](#). The housing trajectory also identifies the anticipated completions in 2019-2020 and highlights the number of remaining dwellings that will be delivered post 2033 from the adopted allocations and sites with planning permission. Assumptions have been made for the delivery of these sites post 2033.

Based on the assumption that the completions predicted for 2019-2020 will be delivered as anticipated in the housing trajectory, for the plan period of 2020-2041, it is anticipated that 30,043 dwellings (net) will be delivered in Greater Cambridge from housing commitments consisting of adopted allocations and sites with planning permission.

However, within this, there is some uncertainty regarding twelve adopted allocations in Cambridge that are anticipated to deliver 736 dwellings by 2041, and this does not

take account of any dwellings from the outline planning application (with a planning committee resolution to grant planning permission) for up to 1,500 dwellings at the Wellcome Genome Campus.

For the purposes of considering the spatial development strategy options for testing, the Councils have excluded the anticipated delivery from the adopted Cambridge allocations where no progress has been made and included the anticipated delivery from the Wellcome Genome Campus development in the commitments. This results in the following:

Anticipated Completions 2020-2033	Anticipated Completions 2033-2041	Cambridge allocations, with no progress towards delivery	Wellcome Genome Campus	TOTAL
23,797	6,246	-736	1,500	30,807

The distribution of these commitments is as follows:

	Percentage
Cambridge Urban Area	6.4%
Edge of Cambridge	26.0%
New Settlements (including Cambourne West and Wellcome Genome Campus)	55.6%
Rural Area	12.1%

Further information on the methodology used to calculate the amount and location of housing commitments is set out in Appendix 5.

D: Windfall allowance

The NPPF provides guidance on the consideration of housing windfall sites.

In the [Greater Cambridge Housing Trajectory and Five Year Housing Land Supply \(November 2019\)](#) document, the Councils reviewed and updated their windfall allowances to enable them to anticipate housing delivery from housing developments

that are not allocated and do not currently have planning permission. Given the different nature of the two local authority areas as either predominantly urban or predominantly rural, the windfall allowances for each area have been calculated separately. However, in reviewing the windfall allowances, the Councils have consolidated the two slightly different methodologies so that they are consistent where possible.

The Councils consider that the following windfall allowances are appropriate for Greater Cambridge:

- Cambridge, 130 dwellings per year.
- South Cambridgeshire, 220 dwellings per year.

Based on the [Greater Cambridge Housing Trajectory \(April 2020\)](#), the windfall allowances are included within anticipated delivery from 2025-2026 until the end of the plan period.

Further work required

The Housing Delivery Study will consider the delivery of windfalls, and provide evidence for a future windfall allowance(s).

How much? – Identifying the number and location of jobs

Counting homes, for the purposes of monitoring past delivery, and for estimating overall supply and future delivery, is relatively simple. In comparison, counting jobs is much more difficult for the following reasons:

- Jobs change is subject to far more variables than house building, and as a result is volatile and fast changing.
- Local Plans cannot make provision for jobs directly, but rather make provision for employment land (which can accommodate business floorspace, measured in square metres) to support jobs. As such it can only be estimated how many jobs such land might support.
- Allocations for employment land in Local Plans only account for a relatively small proportion of overall jobs – employment allocations are for jobs in B use classes (covering office, research and development and industrial uses).

These don't currently account for the very significant proportion of jobs arising in other population-driven sectors such as shops, leisure and education, although note that as of September 2020 there has been a reorganisation of use classes including the introduction of Use Class E replacing Use Class B.

The Greater Cambridge Employment Land and Economic Development Evidence Study (the ELR) explores the supply and demand for employment space in the Greater Cambridge area. It applies a range of methods, including the forecasts referenced earlier in this report, to consider the amount and type of floorspace needed in the area during the plan period. It reviews in detail the existing supply commitments, and considers whether they will meet the demand identified. It makes quantitative and qualitative recommendations, to provide a flexible supply, which encourages business growth and inward investment, and aligns with market feedback and past completions trends.

For the plan period, the ELR anticipates that 609,319 sqm (net) of business floorspace could be delivered in Greater Cambridge from business floorspace commitments consisting of adopted allocations and sites with planning permission, and the Wellcome Genome Campus expansion.

For the purposes of modelling transport impacts in particular, it is necessary to consider specific distributions of jobs (rather than likely delivery of floorspace) as jobs are a key determinant of travel patterns. The Councils have therefore provided distributions of B use class jobs for each spatial option to the transport modelling team, for them to apply alongside standard assumptions for population driven non B use jobs sectors. The total number of jobs in each spatial option matches the maximum, medium or low minimum level as appropriate, in order that the modelling provides consistent testing of total homes and job numbers across each of the spatial options.

Given the significant level of existing B use commitments, all B use jobs needed for each of the growth level options could be accommodated primarily from existing commitments (albeit the Councils recognise that there are nuances relating to specific use classes and geographical locations which may affect this). As it is

expected that new housing allocations or new settlements necessary to deliver the housing growth levels being considered would be accompanied by 'B use' jobs, officers amended the model inputs to reduce delivery of jobs on existing commitments and include delivery of jobs in new growth locations, while maintaining the same overall level of jobs for each spatial option and growth level.

The approach to completing this task is set out at Appendix 7.

Where? Establishing sources of new supply

The following section sets out the full range of broad supply locations considered to exist in Greater Cambridge, and identifies assumptions about them, including:

- Broad locations
- Capacity
- Availability
- Delivery
- Further evidence required for later stages of the plan-making process.

Densification supply - Cambridge urban area / new settlements

Broad locations

The most significant source of supply from densification of existing urban areas will come from Cambridge urban area.

Further to this, the last major brownfield site within Cambridge urban area is at North East Cambridge which is being taken forward separately via an Area Action Plan. This is not included in the commitments above, but is included as a specific site within the strategic options.

A further potential source of densification supply for the First Conversation consultation was assumed to be at the existing / in progress or planned new settlements of Cambourne, Northstowe, Waterbeach New Town and Bourn Airfield New Village.

Capacity

For Cambridge Urban Area, an internal densification workshop was held in May 2020 to determine if there was additional capacity that could be added to the 14,000-dwelling baseline identified in the Cambridge Local Plan 2018. The workshop considered potential sites regardless of current use or proposed allocation. These sites included large employment and retail sites; low density areas of housing; undeveloped safeguarded land; and any other large sites/areas suitable to deliver housing.

A set of location-based typologies were compiled to help calculate the additional amount of housing that these sites could provide. These were based upon a set of typologies used in the [Cambridge Strategic Housing Land Availability Assessment \(2013\)](#) and updated with input from the [North East Cambridge Typologies Study and Development Capacity Assessment \(2020\)](#).

Using the corresponding typology, applicable to the site's location, the different densities were applied to each identified site, and any homes already counted in the commitments through allocations or planning permissions were deducted. A summary of the total additional capacity identified from these sites is provided in the table below.

Capacity source	Low density	Medium density	High density
	4,000	7,500	11,000

For North East Cambridge, capacity assumptions suggest that this site could provide around 8,300 dwellings and 20,000 'B use' jobs in total.

Officers have assumed that 'B use' jobs provided at North East Cambridge will be all B1 uses, based on the draft North East Cambridge Area Action Plan (July 2020). The area will include B2 and B8 uses, but no additional jobs will be provided, although existing businesses may be re-located within the area.

Availability

North East Cambridge is being actively promoted by developers, and is being progressed via the Area Action Plan process. On the other hand, full development is subject to the separate relocation consent process for the Waste Water Treatment Works.

Around 2,000 dwellings have been proposed to the Greater Cambridge Local Plan Call for Sites in Cambridge’s urban area. Sites considered through the Densification Study are in addition to these proposals, and availability of such sites will need to be established before progressing to the next stage of the Local Plan process.

Delivery

For Cambridge urban area, making assumptions consistent with the delivery rates for edge of Cambridge sites and as set out in Appendix 6, results in the below capacity to 2041. These figures have been calculated using the same site by site detail as used to calculate the capacity, but with delivery rates applied to each site(s).

Capacity source	Low density	Medium density	High density
	3,780 (rounded down to 3,700)	5,600	6,830 (rounded down to 6,800)

For North East Cambridge, taking information from the housing trajectory included in the draft Area Action Plan (July 2020) and making some assumptions for 2040-2041 suggests that 8,070 homes (rounded down to 8,000 homes) could be delivered within the plan period to 2041⁶. This housing trajectory in the draft Area Action Plan assumes much higher annual build out rates than historically assumed for strategic

⁶ The housing trajectory in the draft Area Action Plan only considers a plan period to 2040 and indicates that 8,000 dwellings could be delivered by then. For the purposes of this paper, it has been assumed that the 2040+ anticipated dwellings are delivered evenly over the five years from 2040 to 2045 and therefore that a further 70 dwellings could be delivered in 2040-2041, resulting in 8,070 dwellings anticipated by 2041.

sites and assumes delivery soon after adoption of the Area Action Plan. The draft Area Action Plan explains that it takes account of ongoing engagement with landowners / developers, current expectations of the housing and employment market, efficient building processes such as modular housing, the housing types to be delivered, and housing tenures which support quick delivery such as build to rent. The draft Area Action Plan also highlights that the Councils are not advocating the housing trajectory as set out, but are instead seeking comments on it. Therefore, in light of this, for Minimum and Medium growth scenarios within all of the strategic options, delivery of North East Cambridge has been assumed to have the lead-in time and build out rates in line with other strategic sites on the edge of Cambridge.

In each of the strategic spatial options for testing, this paper makes clear which delivery assumption has been used for Cambridge urban area or North East Cambridge if it is included in that scenario.

Further work required

- Through the Housing and Economic Land Availability Assessment we will continue to develop the evidence regarding densification in Cambridge and new settlements.
- The Strategic Heritage Impact Assessment will identify views/areas of Cambridge and its wider setting that are particularly sensitive to the development of taller buildings and identify assets where the impact of taller buildings on their significance would be harmful.
- The Housing Delivery Study will provide a definitive perspective on lead in times and build out rates for new settlements and also other sites of different sizes and types based on their location.

Edge of Cambridge - non Green Belt

Broad locations

There is only one large scale brownfield site on the edge of Cambridge outside of the Green Belt: Land at Cambridge Airport.

Capacity testing of Green Belt locations (explained below) identified further capacity, but these did not comprise large enough unconstrained parcels which could

contribute to a non-site specific source of supply on the edge of Cambridge for the purposes of this strategic options testing.

Capacity

Land at Cambridge Airport was taken out of the Green Belt as part of Cambridge East Area Action Plan, and is safeguarded for development in the Cambridge and South Cambridgeshire Local Plans 2018. The Area Action Plan identified that this site would be suitable for a new urban quarter of approximately 10,000 to 12,000 dwellings. Permission has since been granted at Land North of Newmarket Road also known as Wing or Marleigh (1,300 homes) and the Councils' planning committee has resolved to grant planning permission for Land North of Cherry Hinton (1,200 homes). Taking these homes off the maximum of 12,000 dwellings assumed to be located at Cambridge East produces an estimated residual capacity of 9,500 homes on the edge of Cambridge outside of the Green Belt.

For the purposes of testing the strategic spatial options, it has been assumed that that 675 existing 'B use' jobs will be lost from this site if the spatial option includes Cambridge Airport as a location for new growth, and that up to 5,000 new 'B use' jobs will be re-provided within the new development depending on the level of growth anticipated on this site. Officers have assumed that 'B use' jobs provided at Cambridge Airport will largely be B1 uses, with a small proportion of B2 and B8 uses.

Availability

Land at Cambridge Airport is being actively promoted by the landowner through the Greater Cambridge Local Plan. In addition to this site, around 1,500 dwellings have been proposed to the Greater Cambridge Local Plan Call for Sites on the edge of Cambridge outside of the Green Belt.

Delivery

Based on approximately 7.5 years from allocation to first completions and delivery rates of 250 dwellings a year, as set out at Appendix 6, it is anticipated that 1,935 homes (rounded down to 1,900 homes) could be completed at Cambridge Airport by 2041.

However, to deliver the maximum housing growth scenario for Greater Cambridge and a development strategy by 2041 that could be considered sustainable, higher build out rates than previously achieved will be needed. Taking a reasonable approach to this principle, by continuing to assume approximately 7.5 years from allocation to first completions, but doubling the build out rate for Cambridge Airport to 500 dwellings per year, results in anticipated delivery at Cambridge Airport by 2041 of 3,870 homes (rounded down to 3,800 homes).

Continuing to assume a lead in time of approximately 7.5 years for Cambridge Airport, also means that based on the Greater Cambridge Housing Trajectory (April 2020) the existing parts of Cambridge East that are already coming forwards at land north of Newmarket Road and land north of Cherry Hinton will have been completed before Cambridge Airport starts delivering.

At 2.1 strategic spatial options for testing, this paper makes clear whether the historic or higher delivery rates have been used for Cambridge Airport if it is included in that scenario.

Further work required

- Further capacity testing of this site will be undertaken as part of the Housing and Economic Land Availability Assessment.
- The Housing Delivery Study will provide a definitive perspective on lead in times and build out rates for strategic sites on the edge of Cambridge.

Edge of Cambridge - Green Belt

Broad Locations

The aim of testing at this stage will be to consider the relative sustainability of meeting development needs on the edge of Cambridge. Specific areas or sites will not be identified. Instead testing will consider levels of development and broad locations.

Capacity

Theoretical capacity for edge of Cambridge – Green Belt has been established using a high-level evidence-based approach, as explained below.

The approach taken includes drawing a buffer from the edge of the Built Up Area of Cambridge (based on the approximate furthest distance from Cambridge City boundary to the furthest point of largest edge of Cambridge committed site), and then removing land affected by commitments, environmental constraints, and major roads.

Given the intention of identifying a maximum capacity for the Green Belt, the capacity identified implies that development in this source of supply could adjoin the development frameworks of villages that lie within the Green Belt. While this is against the purposes of the Cambridge Green Belt, it is considered that this is a realistic result of testing this option to its full extent. In compiling the options care has been taken to avoid double counting of capacity, such that, for example, the focus on Edge of Cambridge: Green Belt option does not include any development at the villages source of supply.

This approach has identified a maximum capacity of 40,080 dwellings.

The currently adopted Local Plans and the previously adopted plans allocated land for housing within three/four areas of the edge of Cambridge – North West Cambridge (approximately 3,000 dwellings) and NIAB (approximately 2,780 dwellings), Cambridge East (approximately 2,500 dwellings), and Cambridge Southern Fringe (approximately 3,900 dwellings).

Cambridge Southern Fringe, which consists of Trumpington Meadows, Glebe Farm, Clay Farm and Bell School, is the furthest advanced in terms of delivery and therefore can be used to inform assumptions for new sites on the edge of Cambridge. These four smaller sites on the southern edge of Cambridge are anticipated to deliver approximately 3,900 dwellings when wholly completed on approximately 98 hectares of land, therefore an average density of approximately 40 dwellings per hectare.

The maximum capacity of 40,080 dwellings would therefore equate to about 10 additional sites/broad locations on the edge of Cambridge that are the same size as

Cambridge Southern Fringe. Officer judgement suggests that within the strategic options testing it would not be reasonable to test more than six new strategic sites of approximately 3,900 dwellings on the edge of Cambridge as an absolute maximum, providing a total of 23,400 dwellings. Therefore as there is one new strategic site on the edge of Cambridge outside the Green Belt at Cambridge Airport, where that is included in a spatial option, only a maximum of five sites of approximately 3,900 dwellings on the edge of Cambridge within the Green Belt should be included in the spatial option, providing a total of 19,500 dwellings.

Availability

Around 22,000 dwellings have been proposed to the Greater Cambridge Local Plan Call for Sites on the edge of Cambridge within the Green Belt. This suggests that the independently derived capacity figure is not unreasonable to test as being potentially available.

Delivery

Based on approximately 7.5 years from allocation to first completions and delivery rates of 250 dwellings a year, as set out at Appendix 6, it is anticipated that 1,935 homes (rounded down to 1,900 homes) could be completed at each of the five or six sites / broad locations of approximately 3,900 dwellings.

However, to deliver the maximum housing growth scenario for Greater Cambridge and a development strategy by 2041 that could be considered to be sustainable, higher build out rates than previously achieved will be needed. Taking a reasonable approach to this principle, by continuing to assume approximately 7.5 years from allocation to first completions, but doubling the build out rate for each of the sites / broad locations to 500 dwellings per year, results in anticipated delivery by 2041 of 3,870 homes (rounded down to 3,800 homes).

At 2.1 Description of the strategic spatial options, this paper makes clear whether the historic or higher delivery rates have been used for any new sites / broad locations within the Green Belt on the edge of Cambridge if one or more of these developments have been included in that scenario.

Further work required

- The Housing and Economic Land Availability Assessment will provide a definitive perspective of capacity on the edge of Cambridge within the Green Belt.
- The Housing Delivery Study will provide a definitive perspective on lead in times and build out rates for strategic sites on the edge of Cambridge.
- A detailed study of the Cambridge Green Belt will be carried out, to identify the contribution land makes to Green Belt purposes, in order to understand the level of harm that would be caused by development in different areas of the Green Belt. This will be a key consideration when considering Green Belt land release later in the plan process.

New settlements (stand-alone)

Broad Locations

No assumption has been made as to the location of such new settlements other than in broad locations. The assessment does however make assumptions regarding the transport and other services that they would have available.

Given NPPF spatial principles, set out at 3.2 Spatial principles, it is considered that the most sustainable locations for new settlements is along existing or proposed public transport corridors. Beyond this, consideration has also been given to opportunity locations for new settlements close to the strategic road network but not on public transport corridors.

For the purposes of options testing it is assumed that there might be opportunities for seven new settlements sited on the public transport corridors identified at 3.3.1.1 Existing and planned transport infrastructure (including new settlement-scale expansions to committed new settlements). Further to this, it is assumed that there might be potential for one new settlement close to the road network but not on a public transport corridor.

Capacity

Further work has been completed to identify the scale of new settlement options for testing (see Appendix 4). This includes consideration of the relative sustainability of different new settlement sizes. The key outcomes of this work include:

- recommendation that a settlement of around 4,500 homes would be the minimum to be sustainable in Greater Cambridge and that the most sustainable option is to provide settlements of at least this size even in proximity to Cambridge.
- Notwithstanding the above, it is acknowledged that the location and pattern of development of new communities will influence the appropriate size and smaller developments may be appropriate in certain circumstances.
- Larger settlements are likely to be more sustainable to an extent, as they are likely to be more self-contained, although the goal of self-containment needs to be approached with a degree of realism.

Drawing on the above, within the strategic options two scales of new settlement have been included: 4,500 homes, reflecting the recommendation from Appendix 4, and 9,000 homes, reflecting the further recommendation that larger settlements are likely to be more sustainable. While officers are not aware of evidence supporting specific higher thresholds, 9,000 – doubling 4,500 is considered a reasonable larger size, since it is similar to Northstowe or Waterbeach New Town in scale. In addition, within the options, further expansion of development at committed new settlements is also considered at Cambourne, in increments of 4,500 and 9,000 homes in addition to dwellings already existing or committed. This results in a settlement of the following sizes at Cambourne:

- completions and commitments + 4,500 dwellings = 11,300 (and close to further development of 3,500 at Bourn Airfield New Village)
- completions and commitments + 9,000 dwellings = 15,800 (and close to further development of 3,500 at Bourn Airfield New Village)

For the purposes of testing the strategic spatial options, a new settlement of 9,000 new homes is anticipated to deliver up to 2,500 new jobs in 'B uses' and a new settlement of 4,500 new homes is anticipated to deliver up to 1,500 new jobs in 'B uses', depending on the level of growth anticipated at each new settlement. Officers

have assumed that 'B use' jobs provided at new settlements will largely be B1 uses, with a small proportion of B2 and B8 uses.

Availability

Around 127,000 homes have been proposed at new settlement locations to the Greater Cambridge Local Plan Call for Sites. This suggests that availability is not a constraint on delivery of new settlements.

Delivery

Notwithstanding the seven opportunities for new settlements suggested above, officer judgement suggests that within the strategic options testing it would not be reasonable to test more than four new settlements within South Cambridgeshire as an absolute maximum, on the basis that:

- four new settlements are currently being progressed through the planning system (Cambourne, Northstowe, Waterbeach New Town, Bourn Airfield New Village), suggesting that there is administrative and delivery capacity to progress this number of new settlements simultaneously within the district; but
- the committed new settlements referred to above will continue to build out across future plan periods, such that new settlements identified through the Greater Cambridge Local Plan would be in addition to the four already being progressed simultaneously. It is therefore not considered reasonable to test more than four new settlements, in addition to those already being delivered.

Deliverability will also be a key consideration in relation to new settlements. Based on approximately 5 years from allocation to first completions and delivery rates of 250 dwellings a year, as set out at Appendix 6, it is anticipated that 2,560 homes (rounded down to 2,500 homes) could be completed at each new settlement by 2041.

Using the above delivery assumptions, under a high growth scenario in relevant options several new settlements might be required to meet a target for the plan period 2020-2041. Therefore, to deliver the maximum housing growth scenario for Greater Cambridge and a development strategy by 2041 that could be considered sustainable, higher build out rates than previously achieved will be needed. Taking a

reasonable approach to this principle, by continuing to assume approximately 5 years from allocation to first completions, but doubling the build out rate for each of the new settlements to 500 dwellings per year, results in anticipated delivery by 2041 of 5,120 homes (rounded down to 5,100 homes).

At 2.1 Description of the strategic options, this paper makes clear whether the historic or higher delivery rates have been used for any new settlements if one or more new settlements have been included in that scenario.

Additional delivery at committed new settlements (higher delivery rates)

For the existing committed new settlements, the Greater Cambridge Housing Trajectory (April 2020) with a continuation of the existing build out rates for 2033 to 2041, anticipates that there is none or very little additional capacity for delivery from these sites beyond what is already included in the commitments. However, to deliver the maximum housing growth scenario for Greater Cambridge and a development strategy by 2041 that could be considered to be sustainable, higher build out rates than previously achieved will be needed.

Assuming that Northstowe and Waterbeach New Town can deliver higher build out rates than have been achieved in the past on new settlements (but which have been demonstrated on the edge of Cambridge), these existing commitments could deliver more dwellings within the plan period. Assuming that phases 2 and 3 of Northstowe, and the whole of Waterbeach New Town, can deliver up to 500 dwellings a year, these developments could deliver a further 3,819 homes and 4,000 additional homes respectively, without any additional land.

Assuming that Bourn Airfield New Village and Cambourne West can deliver higher build out rates than have been assumed in the Greater Cambridge Housing Trajectory (April 2020), and therefore at similar build out rates to those assumed in the housing trajectory for other strategic sites, these existing commitments could again deliver more dwellings with the plan period. Assuming that the whole of each of these developments can deliver up to 300 dwellings a year, Bourn Airfield New Village could deliver 870 additional homes whereas Cambourne West would not deliver any additional homes, without any additional land.

Overall, a further 8,689 dwellings could be delivered from the existing committed new settlements by 2041. This has been rounded down to 8,600 dwellings when used within the options. Further detailed information is provided in Appendix 6.

Following the same principles, 1,840 additional 'B use' jobs would be provided by 2041 (as set out in Appendix 7).

Further work required:

- Housing and Economic Land Availability Assessment and Broad Location Study to identify potential options and therefore guide scale of potential new settlements to consider.
- The Housing Delivery Study will provide a definitive perspective on lead in times and build out rates for new settlements.

Villages

Locations

Options testing makes assumptions regarding the distribution of village growth around South Cambridgeshire villages. This takes a broad locations approach, assuming growth levels at different types of villages⁷.

The different categories of villages are described below, with the number of villages within each category identified in brackets⁸:

Rural Centres (5)

The largest, most sustainable villages of the district. They have good access to a secondary school (either within the village or accessible by good public transport), employment opportunities, a variety of services and facilities and have good public transport services to Cambridge or a market town.

⁷ Note that any expansion of a village to form a new settlement would form part of the new settlements option.

⁸ South Cambridgeshire Local Plan 2018, Chapter 2 – Spatial Strategy

Minor Rural Centres (13)

These have a lower level of services, facilities and employment than Rural Centres, but a greater level than most other villages in South Cambridgeshire, and often perform a role in terms of providing services and facilities for a small rural hinterland.

Group villages (32)

Generally less sustainable locations for new development than Rural Centres and Minor Rural Centres, having fewer services and facilities allowing only some of the basic day-to-day requirements of their residents to be met without the need to travel outside the village. All Group Villages have at least a primary school.

Infill villages (56)

Generally amongst the smallest villages in South Cambridgeshire. These villages have a poor range of services and facilities and it is often necessary for local residents to travel outside the village for most of their daily needs. These villages generally lack any food shops, have no primary school and may not have a permanent post office or a village hall or meeting place.

Beyond these categories, in compiling the different scenarios, consideration has also been given to whether villages are fundamentally constrained by environmental constraints, whether they are in or outside of the Green Belt, and their location or not at nodes along public transport corridors.

Villages within and outside of the Green Belt

As set out at 3.2 Spatial principles, different options either account for or ignore Green Belt boundaries. Villages' location within or outside of the Green Belt has been taken into account when compiling options that account for Green Belt boundaries.

Villages on public transport corridors

Nineteen villages have been identified as located at existing or potential nodes along transport corridors. This information has informed the compilation of the Public Transport Corridor option in particular.

Capacity

Officer judgement has been used to identify what might be reasonable capacity assumptions at the different types of villages.

Availability

Around 56,000 dwellings have been submitted to the Greater Cambridge Local Plan Call for Sites process at village locations. For the purposes of strategic options testing, availability of village sites is therefore not treated as a constraint at this point.

Delivery

Within the rough judgements about capacity above, and the assumption that larger amounts of development in villages would be distributed across two or more sites, it is not anticipated that delivery rates would limit the amount of growth that could be distributed to villages.

Further work required:

- Housing and Economic Land Availability Assessment and Broad Location Study to identify scale of potential village growth options.

Compiling the strategic options for testing

Overview

This section outlines the approach to compiling the strategic options for testing, which is the process of distributing the balance of growth to find in each option between the sources of supply, as per the tables at 2.2 Strategic spatial options numbers for testing.

In completing this task it is acknowledged that:

- there are a large number of possible permutations of each reasonable spatial option
- there is no single 'right' answer to identifying strategic options
- strategic spatial options are explicitly non-site specific, and it is therefore important not to be overly precise in developing options

Given all of the above, the approach set out below to compiling the options draws on all of the relevant evidence described elsewhere in this document in order to avoid making unjustified assumptions, whilst accepting that officer judgement is involved.

The approach taken to compiling options brings together the following elements which are described in full below:

- Spatial principles specific to each scenario - guiding the fundamental choices about where to locate development within the sources of supply
- Spatial principles relevant to all scenarios - guiding and influencing choices about growth locations, and
- Resulting distribution of development

Spatial principles – relevant to specific scenarios

Whilst the purpose of an option may be to test maximising development at a certain type of location, it will not always be possible to meet the level of development being considered in that single location type. It will therefore be necessary to add growth in other locations to that scenario.

The benefits/purposes of each option therefore provide spatial principles which guide assumptions made about the location of growth within an area of supply. In particular these principles guide where growth should be located in each option when assumed capacity at the 'focus of growth' source of supply has been exhausted.

For First Conversation options the benefits/purposes have been taken from the First Conversation itself. For additional options the benefits/purposes of the option are set out in Appendix 3: Identifying the full range of reasonable spatial options.

Spatial principles – relevant to all scenarios

NPPF spatial principles not addressed elsewhere in this document are set out below. For each option an explanation is provided as to whether and how the option addresses that principle:

- Within the constraints of each strategic option, locate growth close to existing/planned infrastructure.
- When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure.
- Consider requirements for a proportion of smaller sites, to support maintaining a five-year housing land supply. As noted elsewhere in this paper, distributing a large proportion of the growth requirement to lots of smaller sites may not support Climate Act requirements to support zero carbon targets. Given that the Act is a statutory requirement in tension with national policy requirements, options are included that include greater concentrations of growth with fewer smaller sites, on the basis that it may better support the achievement of zero carbon.
- Green Belt assumption – an explanation of the approach taken to Green Belt is included for each option.

Resulting distribution of development

For each option and each growth scenario, the balance to find is distributed across the sources of supply as informed by the spatial principles referred to above.

Strategic options – principles governing distribution

This section describes, for each strategic spatial option and growth scenario, the principles governing the distribution of growth between the sources of supply. The actual distribution is described in section 2.1, and set out in numerical terms in section 2.2.

Spatial Scenario 1: Focus on Densification of existing urban areas

Description

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is at North East Cambridge: the last major brownfield site within Cambridge urban area is at North East Cambridge which is being taken forward separately via an Area Action Plan.

Spatial principles/benefits

- A. Reduces the need to use greenfield land to accommodate growth.
- B. Living in central, well-connected and vibrant areas is important for many people.
- C. Reduces the need to travel by car and so makes a positive contribution to addressing climate change.
- D. Sites growth near to existing centres, which can continue to support their vitality and viability.

Resulting option assumptions

Sources of supply bringing the most similar benefits (see letter references for shared benefits) - and therefore next sources of supply to be considered under scenarios where more growth needs to be found - in order, are:

- Edge of Cambridge: outside Green Belt (A, C, D)
- Edge of Cambridge: Green Belt (C, D)
- New settlements on public transport corridors (C)

Spatial principles – relevant to all scenarios, and resulting option assumptions

Within the constraints of each strategic option, locate growth close to existing/planned infrastructure

By locating growth in the urban area it is assumed that this will be close to existing infrastructure.

When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure.

Growth beyond the edge of Cambridge is located at new settlements of a scale that could generate demand for new services on public transport corridors.

Consider requirements for a proportion of smaller sites

This option focuses development in Cambridge urban area, some of which is likely to come forward via smaller sites. The spatial principles associated with this option do not support locating development at village sites within this option.

Green Belt assumption

The purpose of this option is to focus growth in and as close to the urban area of Cambridge as a sustainable location. Green Belt constraints have therefore not been accounted for in compiling this option.

Spatial Scenario 2: Focus on Edge of Cambridge: outside Green Belt

Description

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

Spatial principles/benefits

- A. Benefits from the services and infrastructure at the existing centre, maximising the potential for sustainable transport.
- B. Large scale urban extensions present the opportunity for new on-site infrastructure, such as schools, local centres and green spaces that can bring benefits to the existing and new community.

C. Cambridge Airport has previously been identified as suitable location for a new urban quarter to Cambridge and was removed from the Green Belt in earlier plans. It is identified as safeguarded land for longer term development in the 2018 Local Plans if it becomes available.

D. Makes use of brownfield land.

Resulting option assumptions

Sources of supply bringing the most similar benefits (see letter references for shared benefits) - and therefore next sources of supply to be considered under scenarios where more growth needs to be found - in order, are:

- Cambridge urban area (A, ~B, D)
 - NB only North East Cambridge is included within this option as a source of supply, as additional sites within Cambridge do not share B above.
- Edge of Cambridge – Green Belt (A, B, but the Green Belt status of this source of supply is contradictory to the purpose of testing this option, so this source is ignored)
- New settlements on public transport corridors (A, B)

Spatial principles – relevant to all scenarios, and resulting option assumptions

Within the constraints of each strategic option, locate growth close to existing/planned infrastructure

By locating growth in the urban area it is assumed that this will be close to existing infrastructure.

When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure.

The purpose of this option is to base the sustainability of a settlement on its access to existing or proposed transport infrastructure. As such, the settlement hierarchy status of villages has been discounted for the purpose of this option.

Consider requirements for a proportion of smaller sites

This option focuses development in Cambridge urban area, some of which is likely to come forward via smaller sites. The spatial principles associated with this option do not support locating development at village sites within this option.

Green Belt assumption

Given that the explicit purpose of this option is to test the impacts of growth outside of the Green Belt, within this option all development is located outside of Green Belt boundaries.

Spatial Scenario 3: Focus on Edge of Cambridge: Green Belt

Description

This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

Spatial principles/benefits

- A. Benefits from the services and infrastructure at the existing centre, maximising the potential for sustainable transport.
- B. Large scale urban extensions present the opportunity for new on-site infrastructure, such as schools, local centres and green spaces that can bring benefits to the existing and new community.

Resulting option assumptions

Next sources of supply are not applicable – for this strategic spatial option the balance to find is met within the option focus source of supply under all growth level options.

Spatial principles – relevant to all scenarios, and resulting option assumptions

Within the constraints of each strategic option, locate growth close to existing/planned infrastructure

The spatial principles relating to this option result in a pattern of development either close to existing or large enough to support new infrastructure.

When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure.

Not applicable – no development has been located within the rural area for this option.

Consider requirements for a proportion of smaller sites

The spatial principles associated with this option do not support locating development at village sites within this option. The high growth scenario for this option includes development in Cambridge urban area, some of which is likely to come forward via smaller sites.

Green Belt assumption

Given that the explicit purpose of this option is to test the impacts of growth within the Green Belt, Green Belt boundaries have been ignored for the purposes of this option.

Spatial Scenario 4: Focus on New Settlements

Description

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

Spatial principles/benefits

- A. Provides an opportunity for significant new infrastructure to be delivered.
- B. Provides an opportunity for substantial growth in a new location connected to the transport network.
- C. May avoid removing land from the Green Belt

Resulting option assumptions

Next sources of supply are not applicable – for this strategic spatial option the balance to find is met within the option focus source of supply under all growth level options.

Spatial principles – relevant to all scenarios, and resulting option assumptions

Within the constraints of each strategic option, locate growth close to existing/planned infrastructure

It is assumed that new settlements will be located on existing or proposed public transport corridors.

When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure.

Not relevant – to an extent, new settlements will be of a sufficient size to generate their own services.

Consider requirements for a proportion of smaller sites

This option provides an opportunity for substantial growth in a new location connected to the transport network, which thereby provides an opportunity for significant new infrastructure to be delivered. As such it is not considered appropriate to include village sites within this option.

Green Belt assumption

Given that one of the benefits of this option is that it may avoid removing land from the Green Belt, for the purposes of this option it is assumed that no development takes place within the Green Belt.

Spatial Scenario 5: Focus on Dispersal: Villages

Description

This approach would spread new homes and jobs out to the villages.

Spatial principles – relevant to specific scenario

- A. Can help to sustain existing facilities and infrastructure in the village.
- B. Can help provide for a diversity of population in the village.

Resulting option assumptions

Distribute growth across all villages to fully test the implications of dispersal.

Next sources of supply are not applicable – for this strategic spatial option the balance to find is met within the option focus source of supply under all growth level options.

Spatial principles – relevant to all scenarios, and resulting option assumptions

Within the constraints of each strategic option, locate growth close to existing/planned infrastructure

Allocate new growth proportionate to level of facilities and services as measured by South Cambridgeshire Local Plan 2018 settlement category designation.

When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure.

Allocate new growth proportionate to level of facilities and services as measured by South Cambridgeshire Local Plan 2018 settlement category designation.

Consider requirements for a proportion of smaller sites

By definition this option includes small sites. Given that this option is specifically intended to test the impacts of dispersal, it is not considered appropriate to apply Climate Act implications to this option.

Green Belt assumption

Given that the purpose of this option is to test dispersal of growth to its full extent, Green Belt constraints have not been accounted for.

Spatial Scenario 6: Focus on Public transport corridors

Description

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

Spatial principles – relevant to specific scenario

- A. Concentrates development on transport corridors where there are opportunities for high quality public transport.
- B. Supports expansion of economic benefits outwards from Cambridge.

Resulting option assumptions

Within the primary sources of supply for this option:

- North East Cambridge (as a development opportunity located in Cambridge urban area on an existing public transport corridor)
- Distribute growth across new settlement opportunities and villages sited on or close to existing or proposed public transport hubs/nodes.
- Take account of public transport nodes rather than corridors per se. In particular this affects consideration of East West Rail which is intended to only include one new station within South Cambridgeshire – at Cambourne.

Next sources of supply are not applicable – for this strategic spatial option the balance to find is met within the option focus source of supply under all growth level options.

Spatial principles – relevant to all scenarios, and resulting option assumptions

Within the constraints of each strategic option, locate growth close to existing/planned infrastructure

The definition of this option is to locate growth near public transport hubs.

When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure.

The purpose of this option is to base the sustainability of a settlement on its access to existing or proposed transport infrastructure. As such, the settlement hierarchy status of villages has been discounted for the purpose of this option.

Consider requirements for a proportion of smaller sites

Including some growth at villages in this option should help support provision of smaller sites.

Green Belt assumption

The purpose of this option is to consider the sustainability of focusing growth along transport corridors radiating out from Cambridge, which will likely result in Green Belt

development. Green Belt constraints have therefore not been accounted for in compiling this option.

Spatial Scenario 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

Description

This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

Spatial principles – relevant to specific scenario

- A. Supports the continued success of the life sciences cluster area around the south of Cambridge.
- B. Sites growth near to existing centres of employment, potentially reducing the need to travel by car and so making a positive contribution to addressing climate change.
- C. Could support housing availability within the area south of Cambridge, an issue highlighted by employers within the area.

Resulting option assumptions

Within the primary sources of supply for this option:

- Distribute growth across new settlement opportunities and villages sited on or close to existing or proposed public transport hubs/nodes.
- Take account of public transport nodes rather than corridors per se.

Sources of supply bringing the most similar benefits (see letter references for shared benefits) - and therefore next sources of supply to be considered under scenarios where more growth needs to be found - in order, are:

- Edge of Cambridge – non-Green Belt (B)
- Cambridge urban area (B)

Spatial principles – relevant to all scenarios, and resulting option assumptions

Within the constraints of each strategic option, locate growth close to existing/planned infrastructure

New settlement location/s assumed to be on public transport corridors.

When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure

Allocate new growth within villages proportionate to level of facilities and services as measured by South Cambridgeshire Local Plan 2018 settlement category designation.

Consider requirements for a proportion of smaller sites

Including some growth at villages in this option should help support provision of smaller sites, but this is constrained by the number of villages located within the southern cluster area.

Green Belt assumption

The purpose of this option is to consider the sustainability of focusing growth close to existing and committed jobs which will likely result in Green Belt development. Green Belt constraints have therefore not been accounted for in compiling this option.

Spatial Scenario 8: Expanding a growth area around transport nodes

Description

This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

Spatial principles – relevant to specific scenario

- A. Locates growth near to planned rail and metro public transport provision, potentially reducing the need to travel by car and so making a positive contribution to addressing climate change.

- B. Locates growth close to existing centres of population or large-scale growth commitments, adding to the critical mass of population that could generate demand for further services and employment provision.

Resulting option assumptions

Within the primary sources of supply for this option:

- Distribute growth across new settlement opportunities and villages sited on proposed public transport hubs/nodes.
- Take account of public transport nodes rather than corridors per se. In particular this affects consideration of East West Rail which is intended to only include one new station within South Cambridgeshire – at Cambourne.

Sources of supply bringing the most similar benefits (see letter references for shared benefits) - and therefore next sources of supply to be considered under scenarios where more growth needs to be found - in order, are:

- Cambridge urban area (A, B)
 - NB only North East Cambridge is included within this option as a source of supply, as additional sites within Cambridge do not share B above.
- Edge of Cambridge – non-Green Belt (B)

Spatial principles – relevant to all scenarios, and resulting option assumptions

Within the constraints of each strategic option, locate growth close to existing/planned infrastructure

New settlement location/s assumed to be at Cambourne, which is on a proposed public transport corridor.

When locating supply in rural areas, incorporate assumptions about locating growth first in settlements with the greatest range of services and access to infrastructure

The purpose of this option is to base the sustainability of a settlement on its access to existing or proposed transport infrastructure. As such, the settlement hierarchy status of villages has been discounted for the purpose of this option.

Consider requirements for a proportion of smaller sites

Including some growth at villages in this option should help support provision of smaller sites.

Green Belt assumption

The purpose of this option is to consider the sustainability of focusing growth along transport corridors radiating out from Cambridge which will likely result in Green Belt development. Green Belt constraints have therefore not been accounted for in compiling this option.

Appendix 1: Spatial principles informing identification of and assumptions within strategic spatial options

National Planning Policy Framework (NPPF) 2019 principles

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
2. Achieving sustainable development	8	Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):			Options should seek to take opportunities taken to secure net gains across each of the sustainable development objectives (8)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;</p> <p>b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and</p> <p>c) an environmental objective – to contribute to protecting and enhancing our natural, built and</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.</p>			
The presumption in favour of sustainable development	11	<p>Plans and decisions should apply a presumption in favour of sustainable development.</p> <p>For plan-making this means that:</p> <p>a) plans should positively seek opportunities to meet the development needs of</p>		Growth options should provide for objectively assessed needs for housing and other uses – implies that such assessments should be policy-off (11)	Account for any unmet needs arising from neighbouring areas (11) Be sufficiently flexible to adapt to rapid change – see commentary re. flexibility buffer (11)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>their area, and be sufficiently flexible to adapt to rapid change;</p> <p>b) strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses, as well as any needs that cannot be met within neighbouring areas⁵, unless:</p> <p>i. the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type or distribution of development in the plan area⁶; or</p> <p>ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits,</p>			<p>Take into account absolute environmental constraints as set out in NPPF footnote 6, such as habitat sites and flood risk, and consider impact on significant policy constraints such as Green Belt (11)</p>

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		when assessed against the policies in this Framework taken as a whole.			
Maintaining effective cooperation	24-27	<p>In relation to tests a) and c) above, the NPPF sets out that:</p> <p>Local planning authorities and county councils (in two-tier areas) are under a duty to cooperate with each other, and with other prescribed bodies, on strategic matters that cross administrative boundaries. (NPPF paragraph 24)</p> <p>Effective and on-going joint working between strategic policy-making authorities and relevant bodies is integral to the production of a positively prepared and justified strategy. In particular, joint working should help to determine</p>			<p>Take account of requests to take development needs from a neighbouring authority. (27)</p> <p>Take account of neighbouring authority proposals to locate strategic growth close to the boundary of Greater Cambridge. (24-27)</p>

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		where additional infrastructure is necessary, and whether development needs that cannot be met wholly within a particular plan area could be met elsewhere (NPPF paragraph 26)			
Evidence	31	The preparation and review of all policies should be underpinned by relevant and up-to-date evidence. This should be adequate and proportionate, focused tightly on supporting and justifying the policies concerned, and take into account relevant market signals.		Strategic options should: Be informed by up to date evidence, which take into account market signals. (31)	
Preparing and reviewing plans	32	Local plans and spatial development strategies should be informed throughout their preparation by a			Strategic option assumptions should seek to support economic, social and environmental

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>sustainability appraisal that meets the relevant legal requirements. This should demonstrate how the plan has addressed relevant economic, social and environmental objectives (including opportunities for net gains). Significant adverse impacts on these objectives should be avoided and, wherever possible, alternative options which reduce or eliminate such impacts should be pursued. Where significant adverse impacts are unavoidable, suitable mitigation measures should be proposed (or, where this is not possible, compensatory measures should be considered).</p>			<p>objectives (including opportunities for net gains). (32)</p>

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
Examining plans	35	<p>Plans are 'sound' if they are (NPPF paragraph 35):</p> <p>a) Positively prepared – providing a strategy which, as a minimum, seeks to meet the area's objectively assessed needs¹⁹; and is informed by agreements with other authorities, so that unmet need from neighbouring areas is accommodated where it is practical to do so and is consistent with achieving sustainable development;</p> <p>b) Justified – an appropriate strategy, taking into account the reasonable alternatives, and based on proportionate evidence;</p> <p>c) Effective – deliverable over the plan period, and based on effective joint</p>		Complete evidence on delivery rates (35)	Points raised at paragraphs 8,11, 24-27, 32, plus: c. deliverable over the plan period – options should take into account understanding of delivery rates when considering reasonable growth level options, and when distributing growth between options. (35)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>working on cross-boundary strategic matters that have been dealt with rather than deferred, as evidenced by the statement of common ground; and</p> <p>d) Consistent with national policy – enabling the delivery of sustainable development in accordance with the policies in this Framework.</p>			
Identifying land for homes	67, 73, 75	<p>67. Planning policies should identify a supply of specific, deliverable sites for years one to five of the plan period. With an appropriate buffer, as set out in paragraph 73.</p> <p>73. Local planning authorities should identify and update annually a supply of specific</p>		Use up to date housing trajectory evidence to inform options assumptions about delivery (67, 73, 75)	Take into account the need to maintain a five year housing supply when distributing growth between sources of supply in strategic options. (67, 73, 75)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>deliverable sites sufficient to provide a minimum of five years' worth of housing against their housing requirement set out in adopted strategic policies, or against their local housing need where the strategic policies are more than five years old.</p> <p>75. To maintain the supply of housing, local planning authorities should monitor progress in building out sites which have permission. Where the Housing Delivery Test indicates that delivery has fallen below 95% of the local planning authority's housing requirement over the previous three years, the authority should</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		prepare an action plan in line with national planning guidance, to assess the causes of under-delivery and identify actions to increase delivery in future years.			
Small sites	68	Small and medium sized sites can make an important contribution to meeting the housing requirement of an area, and are often built-out relatively quickly. To promote the development of a good mix of sites local planning authorities should: a) identify, through the development plan and brownfield registers, land to accommodate at least 10% of their housing requirement on sites no larger than one hectare;			Integrate an appropriate assumption about small sites provision within strategic options (although note Climate Act requirements affecting this assumption. (68)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		unless it can be shown, through the preparation of relevant plan policies, that there are strong reasons why this 10% target cannot be achieved;			
New Settlements	72	The supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure and facilities. Working with the support of their communities, and with other authorities if appropriate, strategic policy-making authorities	Include strategic options that incorporate larger scale development. (72)	Complete evidence on sustainable communities sizes and locations in a Greater Cambridge context. (72)	When considering broad areas for larger scale development, consider relationship with existing and/or planned infrastructure. (72) Make realistic assumptions of likely rates of delivery of larger scale development (cf. need to maintain five year land supply). (72)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>should identify suitable locations for such development where this can help to meet identified needs in a sustainable way. In doing so, they should:</p> <p>a) consider the opportunities presented by existing or planned investment in infrastructure, the area's economic potential and the scope for net environmental gains;</p> <p>b) ensure that their size and location will support a sustainable community, with sufficient access to services and employment opportunities within the development itself (without expecting an unrealistic level of self-containment),</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>or in larger towns to which there is good access; c) set clear expectations for the quality of the development and how this can be maintained (such as by following Garden City principles), and ensure that a variety of homes to meet the needs of different groups in the community will be provided; d) make a realistic assessment of likely rates of delivery, given the lead-in times for large scale sites, and identify opportunities for supporting rapid implementation (such as through joint ventures or locally-led development corporations); and e) consider whether it is appropriate to establish</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		Green Belt around or adjoining new developments of significant size.			
Rural growth and communities	78	To promote sustainable development in rural areas, housing should be located where it will enhance or maintain the vitality of rural communities. Planning policies should identify opportunities for villages to grow and thrive, especially where this will support local services. Where there are groups of smaller settlements, development in one village may support services in a village nearby.	Include strategic options that incorporate rural growth. (78)		When locating growth in rural areas in the strategic options, consider opportunities to support local services, perhaps in one location to support services in nearby villages. (78)
Economic growth	80	Planning policies and decisions should help create the conditions in which businesses can		Growth options evidence informed by Employment Land Review which	

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development. The approach taken should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future. This is particularly important where Britain can be a global leader in driving innovation ⁴⁰ , and in areas with high levels of productivity, which should be able to capitalise on their performance and potential.		considers potential for future growth in Greater Cambridge (80)	

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
Economic locational requirements	82	Planning policies and decisions should recognise and address the specific locational requirements of different sectors. This includes making provision for clusters or networks of knowledge and data-driven, creative or high technology industries; and for storage and distribution operations at a variety of scales and in suitably accessible locations.		Growth options evidence informed by Employment Land Review which considers role of key sectors and clusters in driving potential future growth in Greater Cambridge (82)	
Promote health and wellbeing	91	Planning policies and decisions should aim to achieve healthy, inclusive and safe places which: a) promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other –	Include strategic options that support provision of new, or enable access to existing, community infrastructure (91) Include strategic options that enable active travel (91)		

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>for example through mixed-use developments, strong neighbourhood centres, street layouts that allow for easy pedestrian and cycle connections within and between neighbourhoods, and active street frontages;</p> <p>b) are safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion – for example through the use of clear and legible pedestrian routes, and high quality public space, which encourage the active and continual use of public areas; and</p> <p>c) enable and support healthy lifestyles, especially where this would</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		address identified local health and well-being needs – for example through the provision of safe and accessible green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.			
Community infrastructure	92	To provide the social, recreational and cultural facilities and services the community needs, planning policies and decisions should: a) plan positively for the provision and use of shared spaces, community facilities (such as local shops, meeting places, sports venues, open space, cultural buildings,	Include strategic options that support provision of new, or enable access to existing, community infrastructure (92) Include strategic options that integrate uses including housing and employment (92)		

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>public houses and places of worship) and other local services to enhance the sustainability of communities and residential environments;</p> <p>b) take into account and support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community;</p> <p>c) guard against the unnecessary loss of valued facilities and services, particularly where this would reduce the community's ability to meet its day-to-day needs;</p> <p>d) ensure that established shops, facilities and services are able to develop and modernise, and are retained for the</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		benefit of the community; and e) ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.			
Transport principles	102	Transport issues should be considered from the earliest stages of plan-making and development proposals, so that: a) the potential impacts of development on transport networks can be addressed; b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale,	Include strategic options explicitly relying on existing or proposed transport infrastructure (102) Include strategic options that enable active travel and public transport opportunities (102)		Within the constraints of each strategic option, locate growth closest to existing or proposed transport infrastructure. (102)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>location or density of development that can be accommodated;</p> <p>c) opportunities to promote walking, cycling and public transport use are identified and pursued;</p> <p>d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and</p> <p>e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
Transport principles	103	The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.	Include strategic options explicitly relying on existing or proposed transport infrastructure (103) Include strategic options that enable active travel and public transport opportunities (103)		Within the constraints of each strategic option, locate growth closest to existing or proposed transport infrastructure. (103)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
Transport principles	104	<p>Planning policies should:</p> <p>a) support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;</p> <p>b) be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;</p> <p>c) identify and protect, where there is robust evidence, sites and routes</p>			<p>Within the constraints of each strategic option, locate growth in locations that minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities. (104)</p>

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development; d) provide for high quality walking and cycling networks and supporting facilities such as cycle parking (drawing on Local Cycling and Walking Infrastructure Plans);			
Effective use of land	117	Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively	Include strategic options that make as much use as possible of previously-developed or 'brownfield' land. (117)	Complete evidence about capacity of existing urban areas, including considering densification opportunities. (117)	

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		assessed needs, in a way that makes as much use as possible of previously-developed or 'brownfield' land.			
Density	122	122. Planning policies and decisions should support development that makes efficient use of land, taking into account: a) the identified need for different types of housing and other forms of development, and the availability of land suitable for accommodating it; b) local market conditions and viability; c) the availability and capacity of infrastructure and services – both existing and proposed – as well as their potential for further improvement and	Include strategic options that are focused on existing urban areas. (122)	Complete evidence about capacity of existing urban areas, including considering densification opportunities. (122)	

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>the scope to promote sustainable travel modes that limit future car use;</p> <p>d) the desirability of maintaining an area's prevailing character and setting (including residential gardens), or of promoting regeneration and change; and</p> <p>e) the importance of securing well-designed, attractive and healthy places.</p> <p>123. Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities, and ensure that developments make</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>optimal use of the potential of each site. In these circumstances:</p> <p>a) plans should contain policies to optimise the use of land in their area and meet as much of the identified need for housing as possible. This will be tested robustly at examination, and should include the use of minimum density standards for city and town centres and other locations that are well served by public transport. These standards should seek a significant uplift in the average density of residential development within these areas, unless it can be shown that there are strong reasons why</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>this would be inappropriate;</p> <p>b) the use of minimum density standards should also be considered for other parts of the plan area. It may be appropriate to set out a range of densities that reflect the accessibility and potential of different areas, rather than one broad density range; and</p> <p>c) local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards).			
Design principles cf. new development	127	<p>Planning policies and decisions should ensure that developments:</p> <p>a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;</p> <p>b) are visually attractive as a result of good architecture, layout and</p>		Consider NPPF Design principles when appraising what a sustainable settlement size is. (127)	

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>appropriate and effective landscaping;</p> <p>c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);</p> <p>d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and</p> <p>f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users⁴⁶; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.</p>			
Green Belt	133	133. The Government attaches great importance	Include strategic options that take	Complete evidence about capacity of	

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>to Green Belts. The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence.</p> <p>134. Green Belt serves five purposes:</p> <ul style="list-style-type: none"> a) to check the unrestricted sprawl of large built-up areas; b) to prevent neighbouring towns merging into one another; c) to assist in safeguarding the countryside from encroachment; d) to preserve the setting and special character of historic towns; and 	<p>account of existing Cambridge Green Belt. (133)</p> <p>Include strategic options that consider densifying existing urban areas (137)</p>	<p>existing urban areas, including considering densification opportunities. (117)</p>	

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>e) to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.</p> <p>136. Once established, Green Belt boundaries should only be altered where exceptional circumstances are fully evidenced and justified, through the preparation or updating of plans. Strategic policies should establish the need for any changes to Green Belt boundaries, having regard to their intended permanence in the long term, so they can endure beyond the plan period.</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>137. Before concluding that exceptional circumstances exist to justify changes to Green Belt boundaries, the strategic policy-making authority should be able to demonstrate that it has examined fully all other reasonable options for meeting its identified need for development. This will be assessed through the examination of its strategic policies, which will take into account the preceding paragraph, and whether the strategy:</p> <ul style="list-style-type: none"> a) makes as much use as possible of suitable brownfield sites and underutilised land; b) optimises the density of development in line with the policies in chapter 11 of 			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>this Framework, including whether policies promote a significant uplift in minimum density standards in town and city centres and other locations well served by public transport; and</p> <p>c) has been informed by discussions with neighbouring authorities about whether they could accommodate some of the identified need for development, as demonstrated through the statement of common ground.</p> <p>138. When drawing up or reviewing Green Belt boundaries, the need to promote sustainable patterns of development</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>should be taken into account. Strategic policy-making authorities should consider the consequences for sustainable development of channelling development towards urban areas inside the Green Belt boundary, towards towns and villages inset within the Green Belt or towards locations beyond the outer Green Belt boundary. Where it has been concluded that it is necessary to release Green Belt land for development, plans should give first consideration to land which has been previously-developed and/or is well-served by public transport. They should also set out ways in</p>			

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		which the impact of removing land from the Green Belt can be offset through compensatory improvements to the environmental quality and accessibility of remaining Green Belt land.			
Climate Change	148	The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing	Include strategic options that enable active travel and public transport opportunities. (148)		

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		buildings; and support renewable and low carbon energy and associated infrastructure.			
Climate Change	150	New development should be planned for in ways that: a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and b) can help to reduce greenhouse gas emissions, such as through its location, orientation and			Strategic options to avoid areas of flood risk. (150)

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.			
	151	To help increase the use and supply of renewable and low carbon energy and heat, plans should: a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts); b) consider identifying suitable areas for renewable and low carbon	Include strategic options that maximise the potential for decentralised energy systems (ie significant scales of development at higher densities) (151)		

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		energy sources, and supporting infrastructure, where this would help secure their development; and c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.			
Planning and flood risk	157	All plans should apply a sequential, risk-based approach to the location of development – taking into account the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property.			Location choices within each strategic option to avoid areas of flood risk. (157)
15. Conserving	170	Planning policies and decisions should contribute	Include strategic options that focus		Location choices within each strategic

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
and enhancing the natural environment		to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland	growth on existing urban areas, thereby reducing impact on countryside and natural capital. (170)		option to avoid protected sites of biodiversity importance. (170)
Heritage	185	Plans should set out a positive strategy for the	Include strategic options that make a		

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. This strategy should take into account:</p> <p>a) the desirability of sustaining and enhancing the significance of heritage assets, and putting them to viable uses consistent with their conservation;</p> <p>b) the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;</p> <p>c) the desirability of new development making a positive contribution to</p>	<p>positive contribution to local character and distinctiveness (ie. don't increase the scale of existing settlements such that they change their role in the existing settlement hierarchy). (185)</p>		

Theme	Reference	Text	Implications for...Strategic options list	Implications for...Evidence informing options	Implications for... Options assumptions
		<p>local character and distinctiveness; and</p> <p>d) opportunities to draw on the contribution made by the historic environment to the character of a place.</p>			

Cross check of impact of Greater Cambridge Local Plan First Conversation Big Themes and Greater Cambridge Local Plan Sustainability Appraisal Objectives on strategic spatial options

Greater Cambridge Local Plan First Conversation 'Big Themes' and within these Key Issues', and Greater Cambridge Local Plan Sustainability Appraisal Objectives were identified and matched together. Following this, consideration was given to whether a similar principle impacting on compilation of the strategic options had been established from the NPPF review above. Finally, consideration was given to whether the Big Themes or Sustainability Appraisal objectives had implications for the strategic spatial options beyond those identified in relation to the NPPF.

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
Climate change	Mitigation <i>(Reducing our impact on the climate as far as possible)</i>	SA 12: To minimise Greater Cambridge's contribution to climate change	Include strategic options that enable active travel and public transport opportunities. (148)	None
Climate change	Adaptation – Water <i>(Ensuring that our communities can evolve as our climate changes - to more extreme weather, a hotter climate, and a changing ecology)</i>	SA 10: To achieve sustainable water resource management and enhance the quality of Greater Cambridge's waters SA 11: To adapt to climate change, including minimising flood risk.	Take into account absolute environmental constraints as set out in NPPF footnote 6, such as habitat sites and flood risk, and consider impact on significant policy constraints such as Green Belt (11)	None
Biodiversity and green spaces	Improving the Green Space Network	SA 5: To conserve, enhance, restore and connect wildlife, habitats, species and/or sites of biodiversity or geological interest.	Take into account absolute environmental constraints as set out in NPPF footnote 6, such as habitat sites and flood risk, and consider impact on significant policy constraints such as Green Belt (11)	None

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
Biodiversity and green spaces	Achieving Biodiversity Net Gain on Future Developments			No spatial implication relevant to compiling strategic spatial options.
Biodiversity and green spaces	Tree Cover	N/A		No spatial implication relevant to compiling strategic spatial options.
Wellbeing and social inclusion	Involving Communities in Planning for Their Future		N/A	No spatial implication
	Creating Safe and Inclusive Communities	SA 3: To encourage social inclusion, strengthen community cohesion, and advance equality between those who share a protected characteristic (Equality Act 2010) and those who do not.	N/A	No spatial implication relevant to compiling strategic spatial options.

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
	Encouraging Healthy Lifestyles	SA 2: To maintain and improve access to centres of services and facilities including health centres and education. SA 4: To improve public health, safety and wellbeing and reduce health inequalities	When locating growth in rural areas in the strategic options, consider opportunities to support local services, perhaps in one location to support services in nearby villages. (78) Include strategic options that support provision of new, or enable access to existing, community infrastructure (91) Include strategic options that enable active travel (91) Include strategic options that are focused on existing urban areas. (122)	None

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
	Air Quality	SA 13: To limit air pollution in Greater Cambridge and ensure lasting improvements in air quality.		No spatial implication relevant to compiling strategic spatial options.
Great Places	Protecting the Best of What Already Exists	SA 6: To conserve and enhance the character and distinctiveness of Greater Cambridge's landscapes and townscapes, maintaining and strengthening local distinctiveness and sense of place. SA 7: To conserve and/or enhance the qualities, fabric, setting and accessibility of Greater Cambridge's historic environment.	N/A	No spatial implication relevant to compiling strategic spatial options.
Great Places	Creating Beautiful New Buildings and Places	N/A	N/A	No spatial implication relevant to compiling strategic spatial options.

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
Jobs	Space for Businesses to Grow	SA 14: To facilitate a sustainable and growing economy	Growth options evidence informed by Employment Land Review which considers potential for future growth in Greater Cambridge (80)	None
Jobs	Protecting Existing Employment Land			No spatial implication relevant to compiling strategic spatial options.
Jobs	Creating a Range of Jobs	SA 15: To deliver, maintain and enhance access to diverse employment opportunities, to meet both current and future needs in Greater Cambridge.	Growth options evidence informed by Employment Land Review which considers role of key sectors and clusters in driving potential future growth in Greater Cambridge (82)	Options include different sources of supply which would support a range of employment types

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
Jobs	Where Jobs are Created	N/A	Growth options evidence informed by Employment Land Review which considers role of key sectors and clusters in driving potential future growth in Greater Cambridge (82)	None
Jobs	How Our City, Town and Village Centres Evolve and Adapt	N/A	None	No spatial implication relevant to compiling strategic spatial options.
Jobs	Managing the Visitor Economy	N/A	None	No spatial implication relevant to compiling strategic spatial options.

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
Homes	The Need for New Homes	SA 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home	Growth options evidence (including housing) informed by Employment Land Review which considers role of key sectors and clusters in driving potential future growth in Greater Cambridge (82) Include strategic options that integrate uses including housing and employment (92)	None
Homes	Affordable Homes	SA 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home	None	No spatial implication relevant to compiling strategic spatial options.
Homes	Diverse Housing for Diverse Communities	SA 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home	None	No spatial implication relevant to compiling strategic spatial options.

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
Homes	The Needs of Gypsies and Travellers and Caravan Dwellers	SA 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home SA 4: To improve public health, safety and wellbeing and reduce health inequalities	None	No spatial implication relevant to compiling strategic spatial options.
Homes	Housing Quality	SA 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home	None	No spatial implication relevant to compiling strategic spatial options.

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
Infrastructure	Reducing the Need to Travel and Increasing Access to Sustainable Transport Options	SA 2: To maintain and improve access to centres of services and facilities including health centres and education. SA 4: To improve public health, safety and wellbeing and reduce health inequalities	Within the constraints of each strategic option, locate growth closest to existing or proposed transport infrastructure. (103) Within the constraints of each strategic option, locate growth in locations that minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities. (104)	None

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
Infrastructure	Securing New Infrastructure to Accompany New Homes and Jobs	SA 2: To maintain and improve access to centres of services and facilities including health centres and education. SA 4: To improve public health, safety and wellbeing and reduce health inequalities	Include strategic options that incorporate larger scale development. (72) Complete evidence on sustainable communities sizes and locations in a Greater Cambridge context. (72) When considering broad areas for larger scale development, consider relationship with existing and/or planned infrastructure. (72)	None

'Big Theme' (from Local Plan First Conversation)	'Key Issue' (from Local Plan First Conversation)	Greater Cambridge Local Plan Sustainability Appraisal objective (ordered by 'Key Issue')	Impact on strategic options from NPPF (NPPF paragraph reference)	Implication for strategic options, beyond that identified from national policy
No directly relevant 'Big Theme'		SA 8: To make efficient use of Greater Cambridge's land resources through the re-use of previously developed land and conserve its soils.	Include strategic options that make as much use as possible of previously-developed or 'brownfield' land. (117) Include strategic options that focus growth on existing urban areas, thereby reducing impact on countryside and natural capital. (170)	None
No directly relevant 'Big Theme'		SA 9: To conserve mineral resources in Greater Cambridge.		Minerals sites identified as environmental constraint for consideration.

Appendix 2: Identifying the full range of reasonable spatial options

Greater Cambridge Local Plan: Identifying the full range of reasonable spatial options

Greater Cambridge Shared Planning
June 2020

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Purpose

This document seeks to identify the spatial development options to be considered in the preparation of the Greater Cambridge Local Plan. In doing so it seeks to address the requirements of Strategic Environmental Assessment Regulations, such that 'only reasonable, realistic and relevant alternatives [are] put forward'⁹.

To achieve this, the document seeks to:

- assess whether the spatial choices set out in the Greater Cambridge Local Plan: First Conversation consultation are indeed reasonable; and
- identify whether there are any additional reasonable spatial options that should be added to the First Conversation choices as assessed above.

This review forms an appendix to the Greater Cambridge Local Plan: strategic spatial options for testing - methodology note. That note sets out how the identified list of reasonable spatial options will then be translated into strategic (non-site specific) options for testing.

Method

Central questions to answer

For assessing First Conversation identified options, and for considering potential additional options, the central questions to answer are whether each idea is:

- Realistic, relevant and reasonable, in a Greater Cambridge context; and
- Substantively different to other identified spatial options.

The approaches taken to reviewing First Conversation options and potential additional options are set out below.

Assessing spatial choices set out in Greater Cambridge Local Plan: First Conversation consultation

Prior to the First Conversation consultation, consideration was given to whether the spatial choices it identified were reasonable and distinct from each other. In particular, given that these options were developed specifically for a Greater Cambridge context, it can be assumed that each option is both realistic and relevant.

At this next stage of seeking to identify the full range of reasonable options for strategic (non-site specific) testing, it is considered appropriate to assess whether

⁹ Office of the Deputy Prime Minister, 2004. Practical guidance on applying European Directive 2001/42/EC "on the assessment of the effects of certain plans and programmes on the environment, Appendix 6

the likely spatial distribution of growth implied by each option is indeed reasonable, and whether the distributions generated by the options are sufficiently different from each other to enable testing at a strategic level for transport and other impacts.

The spatial options identified within the Greater Cambridge Local Plan First Conversation consultation were:

- [Densification of existing urban areas](#)
- [Edge of Cambridge - outside the Green Belt](#)
- [Edge of Cambridge - Green Belt](#)
- [Dispersal - new settlements](#)
- [Dispersal - villages](#)
- [Public transport corridors](#)

Testing of First Conversation options

To answer the central questions set out at 2.1, the following steps have been completed for each First Conversation option:

- A. Identify aim/desired effects of that option
- B. Identify the likely spatial distribution of growth generated by the option
- C. Assessment of whether the option is reasonable¹⁰ in a Greater Cambridge context, based on a high-level judgement drawing on officer knowledge, including consideration of:
 - Broad compatibility with national planning policy
 - absolute constraints (including land capacity, flood risk and habitats of national or international importance)
 - viability and deliverability

Cross-check: review of the uniqueness of the reasonable additional options

Cross-check to assess if the likely spatial distribution of growth generated by First Conversation options are substantively different to each other.

Identifying additional reasonable spatial options

A review has been completed of a range of approaches to identifying spatial options, including a review of national policy, plan-making practice within the UK, and of ideas put forward from other sources.

Sources considered, and definitions

The paragraphs below list the sources considered to help identify additional spatial options, and the nature of the ideas derived from them.

¹⁰ Note again as at 2.2 that all First Conversation options are assumed to be relevant and realistic, given that they were developed specifically for a Greater Cambridge context.

Revisit of sources that informed First Conversation options – spatial options

Sources that informed the First Conversation options included the strategy in the adopted Cambridge and South Cambridgeshire Local Plans and the Cambridgeshire & Peterborough Independent Economic Review.

These sources set out Cambridgeshire-specific spatial options of the same nature as the First Conversation options (i.e. a distribution of growth requirements at different broad locations within a settlement hierarchy), and therefore can be compared consistently with First Conversation options and either confirmed or rejected as being additional and reasonable. Example options considered include:

- A1: Densification
- A2: Fringe Development

National Planning Policy Framework - spatial principles

As a national policy document, the NPPF does not set out specific spatial options that can be directly translated into locally specific options. Rather, it “provides a framework [perhaps best described as principles] within which locally-prepared plans for housing and other development can be produced”¹¹. Given this, Appendix 2 to the Greater Cambridge Local Plan: strategic spatial options for testing - methodology note identifies a number of spatial principles set out in the NPPF.

This review considers whether the principles are incorporated into one or more First Conversation option. Example NPPF spatial principles considered include:

- B4: Integrate uses including housing and employment
- B5: Explicitly rely on existing or proposed transport infrastructure

Plan-making practice in the UK – spatial options

This included reviewing spatial options explored in Local Plan consultations from a range of plans in different contexts. These are of the same nature as the First Conversation options, and therefore can be compared consistently with First Conversation options and either confirmed or rejected as being additional and reasonable.

Example strategy options considered include:

- C3: Supporting an existing high-tech cluster
- C8: Expanded Growth Area

Ideas proposed from other sources, including spatial concepts

Ideas were drawn from a range of sources including:

- Wolfson Prize for Economics 2014
- Cambridge Futures, 2000
- The Cambridge to Oxford Connection: Ideas Competition
- 5th Studio for NIC, 2017. Cambridge, Milton Keynes and Oxford Future Planning Options Project

¹¹ Ministry of Housing, Communities and Local Government, 2019. National Planning Policy Framework, para. 1.

- Ideas from staff within Greater Cambridge Shared Planning
- Responses to First Conversation options

Some of the ideas arising from these other sources can be considered as spatial options or principles as per the descriptions above. However, some could best be described as spatial concepts, in that they relate to the organisation of development at a more granular level in comparison to the broad distribution of development envisaged for spatial options. Such spatial concepts could potentially be applied within a number of (broad distribution) spatial options.

Example spatial concepts considered include:

- D02: New living campus clusters
- D06: Edge Intensification

For the purpose of this review, spatial concepts have been considered in the same way as the spatial options and principles, in order to consider whether they in fact have implications for the broad distribution of growth. However, further exploration of spatial concepts may be undertaken separately, alongside testing of strategic options, to inform the spatial organisation of development that could be delivered under each of the broad options. Later in the plan-making process, the preferred strategy may include a combination of spatial options – i.e. broad distribution of growth across the Greater Cambridge area - and spatial concepts - guiding the spatial organisation of development in the preferred locations.

Having identified a range of different approaches, the review completed the tasks set out below:

Sifting of long list

To focus the review on ideas that warranted substantive consideration, sifting was completed of the long list of 95 ideas. Ideas were sifted out where they:

- clearly duplicate one or more spatial options identified within the Greater Cambridge Local Plan First Conversation consultation
- suggest an option without a clear spatial focus (eg. C06: Dispersal plus urban growth; E07: Blended Spatial Strategy). Whilst it is likely that the preferred spatial scenario taken forward in the Local Plan will include more than one type of location within Greater Cambridge, to consider impacts at a strategic level there is a need for clear differentiation between options.

Commentary is provided to justify the judgement made. Where the answer was unclear the option is put forward for full consideration.

Full testing of shortlisted options

For each spatial idea identified for full testing through this review, the following steps have been completed:

- A. Identify aim/desired effects of that idea
- B. Assessment of whether the option is likely to be relevant in a Greater Cambridge context, to help inform an assessment of whether the option is reasonable
- C. Dependent on task B, identify the potential spatial distribution of growth generated by it in a Greater Cambridge context
- D. Drawing on task C, assessment of whether the likely distribution of growth generated by an option is substantively different to the existing spatial options identified in the First Conversation document, as translated into strategic spatial options
- E. If the option passes steps B and D, an assessment of whether the option is reasonable in a Greater Cambridge context, based on a high-level judgement drawing on officer knowledge, including consideration of:
 - Broad compatibility with national policy
 - absolute constraints (including land capacity, flood risk and habitats of national or international importance)
 - viability and deliverability

Time Horizon

Build out of a number of the larger scale ideas assessed within this review would continue across more than one plan period, as larger scale development usually has a long lead in time from planning permission to the start of construction. On the other hand, the Greater Cambridge Local Plan will need to meet a set homes requirement by the end of its plan period.

To support an approach to testing ideas that acknowledges this tension:

- larger-scale longer-term ideas have been identified within the description of each idea,
- For steps C and D set out above consideration has been given separately to a limited plan period, and to the overall effect of the idea once built out.
- For step E, consideration is given to the overall effect of the idea, with reference made within the deliverability assessment to likely build out in relation to the plan period.

Conclusions about which options are reasonable in relation to the Greater Cambridge Local Plan are set out in Summary of findings below.

Cross-check: review of the uniqueness of the reasonable additional options

Cross-check to assess if the additional options that are considered reasonable are substantively different to each other.

Further consideration of reasonable additional options

This section considers further the reasonable additional options compared through the cross-checking step, in order to confirm which should be taken forward for testing as strategic spatial options.

Summary of findings

Testing of First Conversation options

Assessment of the First Conversation options is set out at Annex A. This assessment confirmed that all six First Conversation options should be taken forward for strategic options testing.

Identifying any additional reasonable spatial options

Sifting of long list

The sifting of the long list is set out in full at Annex B. Based on this sifting, out of a long list of 97 options, the 29 options listed below were put forward for full consideration:

Revisit of sources that informed First Conversation options

- A0 Current strategy
- A03 Dispersal (sub-regional)

Spatial principles set out in the National Planning Policy Framework

- B04 Integrate uses including housing and employment
- B05 Explicitly rely on existing or proposed transport infrastructure
- B12 Proportionate growth approach: Focus growth in locations that make a positive contribution to local character and distinctiveness

Plan-making practice in the UK

- C03 Supporting an existing high-tech corridor.
- C08 Expanded growth area
- C13 All development located in the high-tech growth area (all in Science Vale)
- C18 Locating development in particular settlements where it could help fund projects
- C22 Spokes and hubs
- C25 'String' settlement/ settlement cluster
- C26 'Wheel' settlement cluster

Ideas proposed from other sources

- D01 Garden City, growing an existing city
- D02 New living campus clusters
- D03 Town cluster; village cluster; village
- D06 Edge Intensification
- D11 String City
- D13 Minimum growth
- D18 Virtual Highway
- D20 Copenhagen Green Finger Plan
- D21 Net zero growth
- D22 Spatial urbanism approach

Responses to First Conversation options

- E02 Housing in close proximity to employment/innovation centres
- E03 Tied cottages /key worker housing
- E05 The 'Gruene Finger'
- E06 Focus development to the east side of the city
- E08 The A428 Corridor
- E16 Brownfield Sites First
- E21 'Nature recovery network'

Full testing of shortlisted options

Full testing of the shortlisted options is set out at Annex C. This assessment identified the following options as being reasonable and substantively different to the First Conversation options.

- Principle B04: Integrate uses including housing and employment
- Option C03: Supporting an existing high-tech corridor
- Option C13: All development located in the high-tech growth area (All in Science Vale)
- Principle E03: Housing in close proximity to employment/innovation centres
- Principle B05: Explicitly rely on existing or proposed transport infrastructure
- Option C08: Expanded growth area
- Option E08: A428 Corridor
- Principle D24: Nature First
- Principle E21: Nature Recovery Network

Cross-check and further exploration of the reasonable additional options

The cross-check review and further exploration of the options identified as being reasonable and substantively different to the First Conversation options is set out at

Annexes D and E. This cross-check identified the following options as being unique. These options are therefore recommended to be added as a new option for testing at a strategic level:

- Supporting a high-tech corridor by integrating homes and jobs
- Expanding a growth area around transport nodes

List of options for testing

The list of options for testing is set out at Annex E, including descriptions. The options are as follows:

- Densification of existing urban areas
- Edge of Cambridge (incorporating outside and within the Green Belt)
- Dispersal - new settlements
- Dispersal – villages
- Public transport corridors
- Supporting a high-tech corridor by integrating homes and jobs
- Expanding a growth area around transport nodes

Emerging themes and areas for further work

In considering the long and short lists of potential additional options, a number of themes and ideas have arisen, including:

- Options that are not additional but can inform the nature of existing options
- Area-specific options
- Clustered growth concepts
- Larger scale, longer term ideas

Assessed options that can inform the nature of existing options

A number of assessed options were considered not to be additional to existing options, but prompted consideration of the nature of the existing options for testing, including:

Densification

Relevant options considered included:

- Option A02: Densification
- Principle B08: Optimise the density of development
- Option C17: Raising Densities
- Concept D04: Town Centre Intensification
- Concept D05: Suburban Intensification

Ideas arising include:

- Consider a range of densification options including a maximum density option
- Consider a range of densification locations, including town centre and suburban opportunities

Edge of Cambridge:

Relevant options considered included:

- Concept D01: Garden City, growing an existing city

Ideas arising include:

- The Garden City idea considered extends an existing city along public transport corridors, such that the idea almost merges with Option D20: Copenhagen Green Finger Plan. See discussion below.

Transport corridors

Relevant options considered included:

- Concept D20: Copenhagen Finger plan
- Concept C25: 'String' settlement/ settlement cluster
- Concept D22: Spatial Urbanism approach
- Concept D03: Town cluster; village cluster; village (VeloCity)

Ideas arising include:

- The Copenhagen Green finger plan extended the city along public transport corridors providing continuous broad corridors of development separated by green wedges. It is proposed to consider this scenario within the Public Transport Corridors option.
- Concepts D03: Town cluster; village cluster; village and D22: Spatial Urbanism approach both define sustainable locations to an extent in relation to assumptions about reasonable cycling distances to public transport nodes/local centres. Further consideration may be given to these concepts in parallel to the strategic options testing process.

Area specific options

Relevant options considered included:

- Principle B04: Integrate uses including housing and employment
- Option C03: Supporting an existing high-tech corridor
- Option C13: All development located in the high-tech growth area (All in Science Vale)
- Principle E03: Housing in close proximity to employment/innovation centres
- Option C08: Expanded growth area
- Option E08: A428 Corridor

The above options and principles were considered to be additional to the typology focused First Conversation options. Amalgams of them were put forward for testing as two strategic spatial options.

Clustered growth concepts

Relevant concepts considered included:

- Concept D02: New living campus clusters
- Concept D03: Town cluster; village cluster; village (VeloCity)
- Concept D11: String City

As noted at [2.2.1 Sources considered, and definitions](#), most of the ideas proposed from other sources are spatial concepts rather than options in themselves. In testing the impact of these on the broad distributions of growth many are in effect hybrids of existing options. As noted above, further consideration may be given to these concepts in parallel to the strategic options testing process.

Larger scale, longer term ideas

As introduced at [2.3.4 Time Horizon](#), a number of ideas considered were of a larger scale and therefore longer term than others. Relevant concepts considered included:

- FC4: Dispersal – new settlements
- D01: Garden City, growing an existing city
- D02: New living campus clusters
- D11: String City

Given that to be found sound at Examination, Local Plans must be deliverable over the plan period, this factor is of significance in assessing whether larger scale, longer term ideas provide reasonable options.

As such, it is difficult to conceive how very large-scale ideas such as D01 and D11, which both conceive of city-scale growth, could be initiated within the relatively limited horizon of a ~20 year plan period.

In this regard, intentionally scalable approaches such as D02: New living campus clusters, which conceives of small scale new settlements located close to one another that eventually form clusters, would appear to have particular benefits in balancing the tension between short term deliverability and long-term sustainability. As noted above, further consideration may be given to this concept in parallel to the strategic options testing process.

Annex A. Assessment of First Conversation options

Densification of existing urban areas

Source

- Greater Cambridge First Conversation website: [Densification of existing urban areas](#)

Description (from source)

This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. This would be done by encouraging intensive use of brownfield land, building taller buildings, building on existing residential back gardens or in-between existing buildings, or redeveloping underused sites at higher densities. It could also look to increase the density in planned new settlements.

A. Purpose/effects (from source)

Advantages:

- Reduces the need to use greenfield land to accommodate growth.
- Living in central, well-connected and vibrant areas is important for many people.
- Reduces the need to travel by car and so makes a positive contribution to addressing climate change.
- Sites growth near to existing centres, which can continue to support their vitality and viability.

Challenges:

- Needs to respond to the character of Cambridge, and protect its historic environment and green spaces, therefore not suitable in all areas.
- Land assembly can be challenging with multiple landowners often involved.

B. Potential distribution of growth in a Greater Cambridge context



Description

Growth focused in urban areas of Cambridge (including at North East Cambridge), Cambourne, Northstowe, Waterbeach New Town and Bourn Airfield New Village.

C. Reasonable?

Reasonable: national policy?

Yes – compatible with NPPF para. 117 and others on making effective use of land.

Reasonable: absolute constraints?

- Capacity: Partly.
 - Yes – it is assumed that there is some capacity for densification in Cambridge urban area and planned new settlements.
 - No – it is assumed that under medium or high growth scenarios there may not be sufficient capacity in densification locations to meet all development requirements.
- Environmental constraints: Unknown – assume Partly.
 - Given that the intention of this option is to locate development within existing urban areas it is assumed that this would not be impacted significantly by environmental constraints such as flooding and significant habitats.
 - Impacts on heritage assets within Cambridge in particular would need to be considered when assessing capacity for densification.

Reasonable: viable and deliverable?

- Viability: Unknown, assume yes
 - Whilst development of brownfield land usually involves higher site preparation costs to address issues such as land contamination, development in Cambridge in particular, as a location with high land values, is assumed likely to be viable.
- Deliverability: Unknown, assume challenging
 - As noted above at Step A, land assembly can be challenging with multiple landowners often involved.

Edge of Cambridge - outside the Green Belt

Source

- Greater Cambridge First Conversation website: [Edge of Cambridge - outside the Green Belt](#)

Description (from source)

This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the green belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport (N.B. North East Cambridge is considered within FC1: Densification of existing urban areas).

A. Purpose/effects (from source)

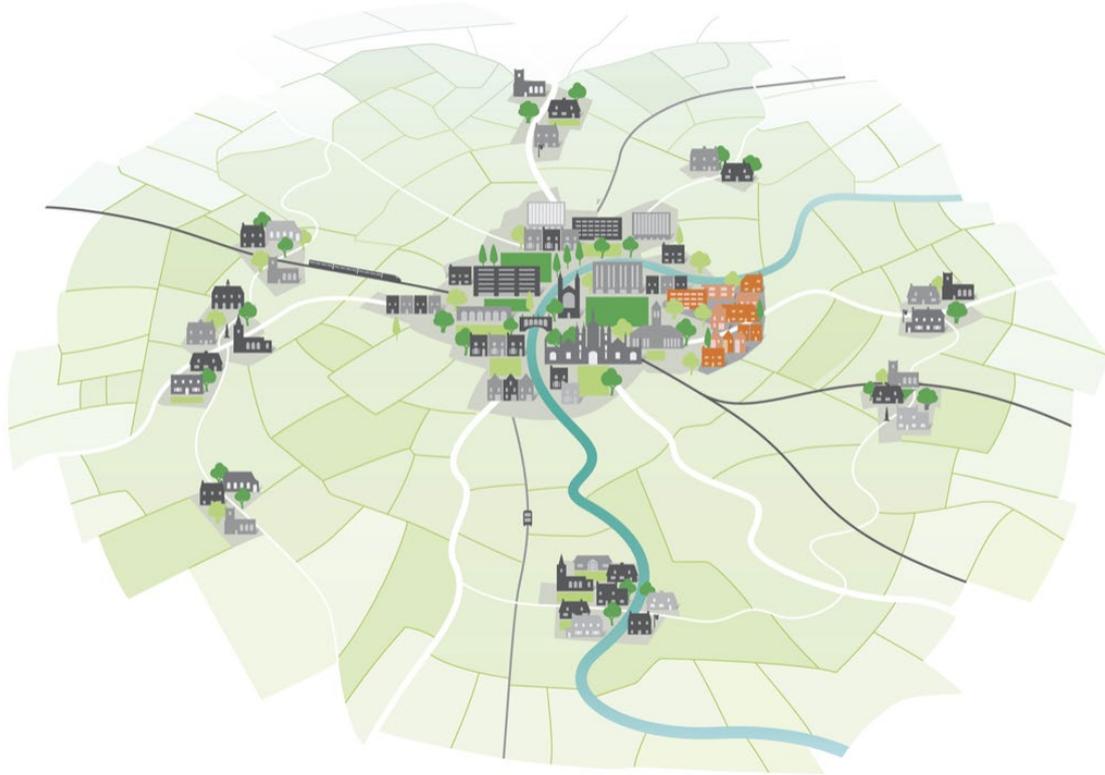
Advantages:

- Benefits from the services and infrastructure at the existing centre, maximising the potential for sustainable transport.
- Large scale urban extensions present the opportunity for new on-site infrastructure, such as schools, local centres and green spaces that can bring benefits to the existing and new community.
- Cambridge Airport has previously been identified as suitable location for a new urban quarter to Cambridge and was removed from the Green Belt in earlier plans. It is identified as safeguarded land for longer term development in the 2018 Local Plans if it becomes available.
- Makes use of brownfield land.

Challenges:

- Confirmation whether safeguarded land at Cambridge Airport can be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.

B. Potential distribution of growth in a Greater Cambridge context



Description

See description above.

C. Reasonable?

Reasonable: national policy?

Yes – compatible with NPPF para. 136 regarding only making changes to Green Belt boundaries in exceptional circumstances. and para. 117 on making effective use of land.

Reasonable: absolute constraints?

- Capacity: Partly.
 - Yes – there is capacity at Cambridge Airport safeguarded for development in the adopted Local Plans; there is also capacity at North East Cambridge.
 - No – it is assumed that under medium or high growth scenarios there may not be sufficient capacity at these locations to meet all development requirements.
- Environmental constraints: Yes.
 - In order for Cambridge Airport to be identified as safeguarded land for development in Local Plans suggests that this location has passed sufficient testing to suggest that significant scales of development can take place without generating significant adverse environmental impacts. The impacts of proposed development at this location will

again be subject to testing through the ongoing plan-making processes.

Reasonable: viable and deliverable?

- Viability: Yes
 - Development in Cambridge in particular, as a location with high land values, is likely to be viable.
 - Land at Cambridge Airport and is being actively promoted by the landowner, which implies that development is both viable and deliverable.
- Deliverability: Partly
 - Land at Cambridge Airport and is being actively promoted by the landowner, which implies that development is both viable and deliverable.
 - As noted at Step A, confirmation whether safeguarded land at Cambridge Airport can be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.

Edge of Cambridge - Green Belt

Source

- Greater Cambridge First Conversation website: [Edge of Cambridge - Green Belt](#)

Description (from source)

This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

A. Purpose/effects (from source)

Advantages:

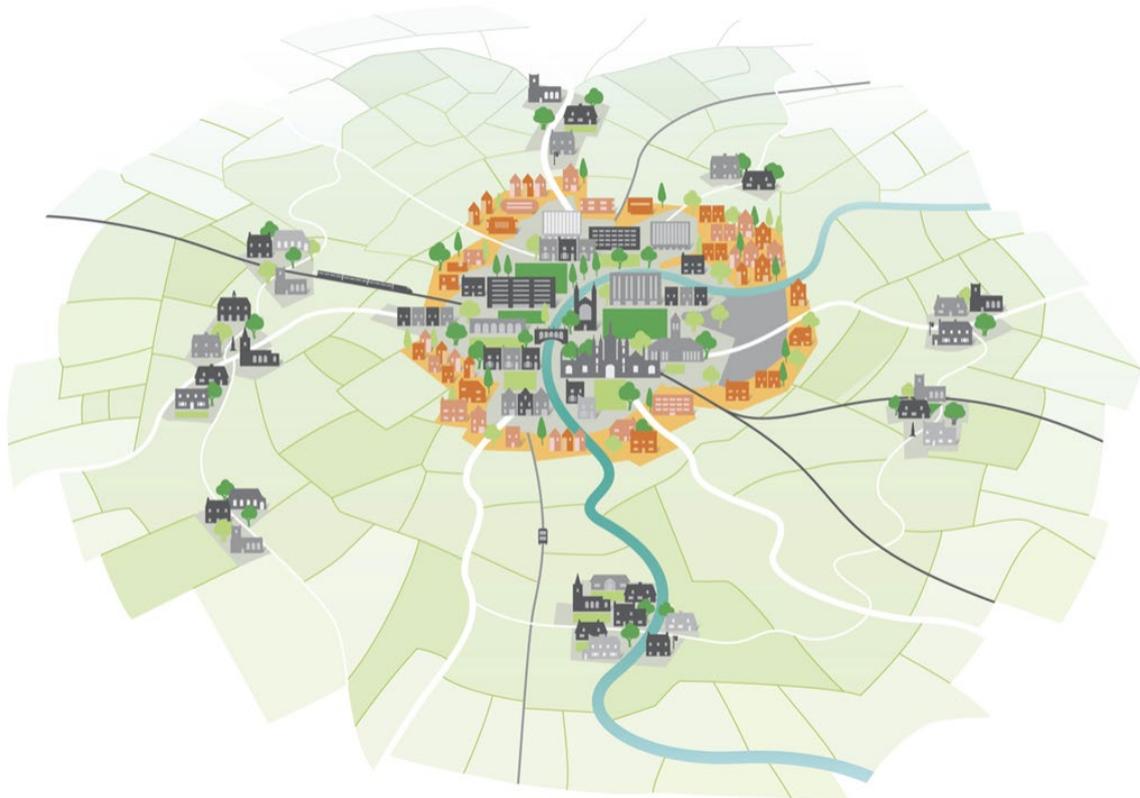
- Benefits from the services and infrastructure at the existing centre, maximising the potential for sustainable transport.
- Large scale urban extensions present the opportunity for new on-site infrastructure, such as schools, local centres and green spaces that can bring benefits to the existing and new community.

Challenges:

- Potential major impact on the landscape and loss of agricultural land.
- Requires the use of greenfield land on the edge of urban areas, which around Cambridge would require the release of Green Belt land. National planning policy is clear that Green Belt boundaries should only be altered where

exceptional circumstances are fully evidenced and justified, through the preparation or updating of plans. This includes a requirement that all other reasonable options, including working with neighbouring districts, have been fully explored. It also says that when reviewing Green Belt boundaries, the need to promote sustainable patterns of development should be taken into account.

B. Potential distribution of growth in a Greater Cambridge context



Description

Focus growth on edge of Cambridge in Green Belt locations.

C. Reasonable?

National policy

Partly

- No – a growth option focused on Green Belt land would not be compatible with NPPF para. 136 on only making changes to Green Belt boundaries in exceptional circumstances.
- Yes – it may be that testing identifies this option as the most environmentally sustainable, which might support exceptional circumstances for removing land from the Green Belt.

On balance, it is considered important to test the sustainability benefits of options including land in the Green Belt so as to test all reasonable options, including not prejudging whether there are exceptional circumstances for amending Green Belt boundaries. The Councils will follow all requirements set out in the NPPF paras 137/8 when considering development options in relation to Green Belt.

Reasonable: absolute constraints?

- Capacity: Partly
 - Yes - There is undeveloped land on the edge of Cambridge within the Green Belt.
 - No – it is assumed that under medium or high growth scenarios there may not be sufficient capacity at these locations to meet all development requirements.
- Environmental constraints: Unknown – assume yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Yes
 - Development on the edge of Cambridge, as a location with high land values, is likely to be viable.
- Deliverability: Yes
 - Development on green field sites relatively close to existing infrastructure should support deliverability.

Dispersal - new settlements

Source

- Greater Cambridge First Conversation website: [Dispersal - new settlements](#)

Description (from source)

New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

Larger-scale/longer term idea

A. Purpose/effects (from source)

Advantages:

- Provides an opportunity for significant new infrastructure to be delivered.
- Provides an opportunity for substantial growth in a new location connected to the transport network.
- May avoid removing land from the Green Belt

Challenges:

- Potential major impact on the landscape and loss of agricultural land.
- Can take longer to become reality, due to starting from scratch.
- Where it relies on proposed new transport infrastructure, even where it is included in the plans of the transport authorities, the level of certainty over delivery and timing of that infrastructure is crucial.

B. Potential distribution of growth in a Greater Cambridge context



Description

- Plan period: First phases of new settlements supported by strategic transport infrastructure connecting to Cambridge.
- Built out: towns and villages connected to Cambridge supported by strategic transport infrastructure connecting to Cambridge.

C. Reasonable?

National policy

Yes – compatible with NPPF para. 72 on the potential benefits of planning for larger scale growth including new settlements.

Reasonable: absolute constraints?

- Capacity: Yes
 - There is undeveloped land within Greater Cambridge which in theory has capacity for additional new settlements.
- Environmental constraints: Unknown – assume yes.

- It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown – assume partly
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing new settlements in South Cambridgeshire is currently viable.
 - Cost and capacity of transport options may have a significant impact on viability.
- Deliverability: Unknown – assume challenging
 - Deliverability is very much dependent on transport costs/ improvements, especially if these need to be implemented in advance of new development.
 - New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation of how much of a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.

Dispersal - villages

Source

- Greater Cambridge First Conversation website: [Dispersal - villages](#)

Description (from source)

This approach would spread new homes and jobs out to the villages.

A. Purpose/effects (from source)

Advantages:

- Can help to sustain existing facilities and infrastructure in the village.
- Can help provide for a diversity of population in the village.

Challenges:

- Can result in increased commuting by car, and travel to access to services and facilities, particularly if the village is away from main transport corridors.
- Small sites are unlikely to significantly contribute to improvements to infrastructure so services capacity within or accessible to a particular village is important.
- Potential impact on village character needs to be considered.
- Some of the larger better served villages are surrounded by the Green Belt.

B. Potential distribution of growth in a Greater Cambridge context



Description

New homes and jobs dispersed across villages in South Cambridgeshire.

C. Reasonable?

National policy

Partly:

- Yes – compatible with NPPF para. 78 in promoting sustainable development in rural areas.
- No – a strategy dispersing all growth might not be compatible with NPPF environmental requirements.

Reasonable: absolute constraints?

- Capacity: Yes
 - There is undeveloped land around villages in Greater Cambridge which in theory provides capacity for further development.
- Environmental constraints: Unknown – assume yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Yes

- As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
- Deliverability: Unknown – assume partly
 - As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, demonstrating their ongoing deliverability in general. Clearly specific sites will have different constraints which may affect deliverability.
 - Developer contributions on individual smaller sites do not generate substantive contributions to support major transport and other infrastructure provision. As such, an option that focused growth towards very many smaller sites might result in cumulative impacts on the transport network, for which it might be hard to collect sufficient funds to mitigate. Over time this could lead to an infrastructure deficit that might make such a strategy undeliverable in the long term.

Dispersal - Public transport corridors

Source

- Greater Cambridge First Conversation website: [Public transport corridors](#)

Description (from source)

This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

A. Purpose/effects (from source)

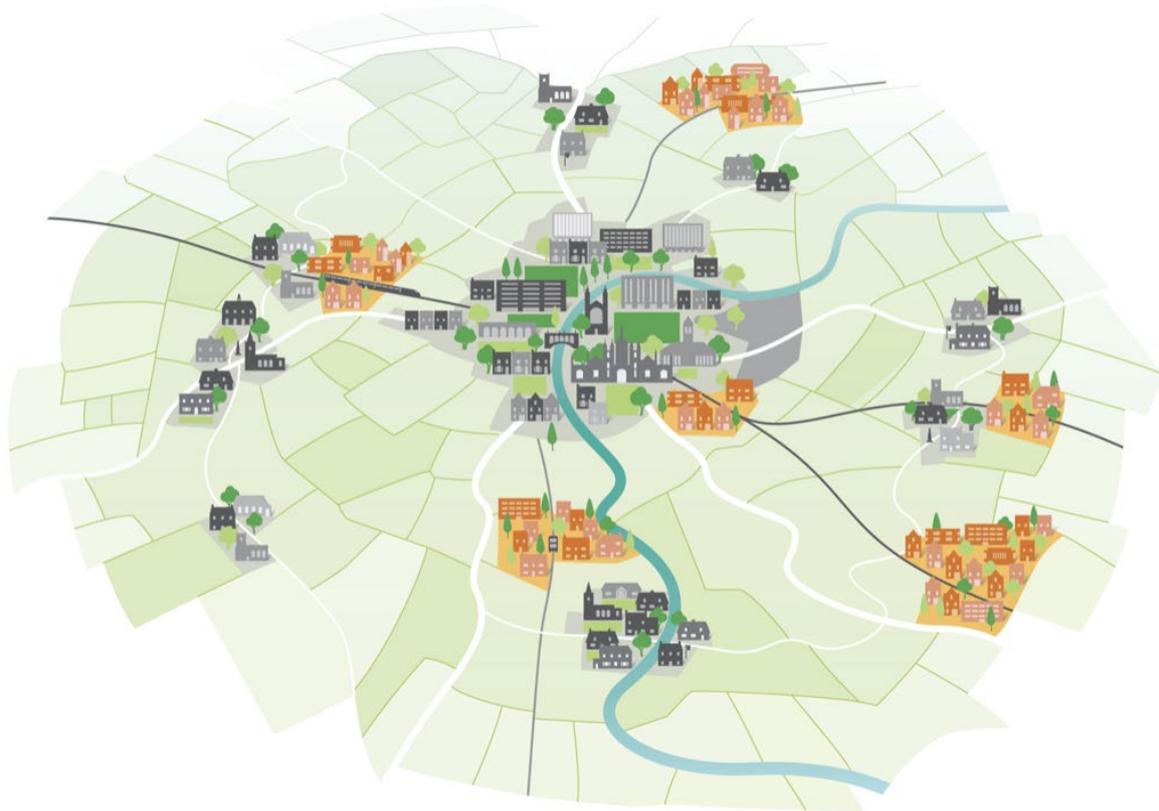
Advantages:

- Concentrates development on transport corridors where there are opportunities for high quality public transport.
- Supports expansion of economic benefits outwards from Cambridge.

Challenges:

- Requires the use of land along transport corridors, which may include locations within the Green Belt. This approach has implications for fundamentally changing the nature of the Cambridge Green Belt.
- Weight to be given to proposed new strategic transport infrastructure, even where it is included in the plans of the transport authorities, will depend on the level of certainty over delivery and timing of that infrastructure.

B. Potential distribution of growth in a Greater Cambridge context



Description

Expansion or intensification of existing settlements, or new settlements, along key existing or proposed public transport corridors linking to Cambridge. Corridors could include those on the Cambridgeshire Guided Busway, current Greater Cambridge Partnership corridors (and proposed Cambridgeshire Guided Busway Corridors), or existing or proposed rail corridors.

C. Reasonable?

National policy

Yes – compatible with NPPF para. 102 on realising opportunities from existing or proposed transport infrastructure.

Reasonable: absolute constraints?

- Capacity: Yes
 - There is undeveloped land along existing or proposed transport corridors within Greater Cambridge which in theory has capacity for additional new settlements. There is also undeveloped land around villages along existing or proposed transport corridors within Greater Cambridge which in theory has capacity for development.
- Environmental constraints: Unknown – assume yes.

- It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing new settlements in South Cambridgeshire is currently viable.
 - As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
 - Locating growth close to public transport nodes should reduce additional transport infrastructure investment required to support development, and thereby increase viability.
- Deliverability: Unknown – assume mixed
 - Locating growth close to public transport nodes should reduce additional transport infrastructure investment required to support development, and thereby increase deliverability.
 - Some proposed transport infrastructure projects in the Greater Cambridge area are yet to have funding or be confirmed. As such, confirmation whether such projects could be completed in time to support associated development within the next 20 years will be important as part of considering whether to allocate growth on these routes in the new Local Plan.
 - New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation whether a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.

Cross-check: review of the uniqueness of the First Conversation options

<i>Option</i>	<i>Likely distribution of growth</i>	<i>Unique?</i>
FC1: Densification of existing urban areas	Growth focused in urban areas of Cambridge, Cambourne, Northstowe, Waterbeach and Bourn	Yes
FC2: Edge of Cambridge- outside the Green Belt	Growth focused at Cambridge Airport	Partly: Yes – in contrast with FC3, this option would use brownfield land, with likely significantly lower

		<p>impacts on e.g. landscape.</p> <p>No – likely that transport and infrastructure effects of locating growth at edge of Cambridge outside Green Belt would be similar to FC3.</p>
<p>FC3: Edge of Cambridge - Green Belt</p>	<p>Growth focused on edge of Cambridge at various locations within Green Belt</p>	<p>Partly:</p> <p>Yes – in contrast with FC2, this option would use greenfield land, with likely significantly higher impacts on e.g. landscape.</p> <p>No – likely that effects of locating growth at edge of Cambridge outside Green Belt would be similar to edge of Cambridge: Green belt locations.</p>
<p>FC4: Dispersal - new settlements</p>	<p>Growth at new towns and villages</p>	<p>Partly:</p> <p>No - Potential for overlap with Public Transport Corridors, given that new towns and villages would need to be connected to Cambridge and/or other higher order settlements by public transport to make them sustainable.</p> <p>Yes – Public Transport Corridors envisages growth at</p>

		villages located on public transport nodes in addition to new settlements.
FC5: Dispersal – villages	Growth spread between the villages	Yes
FC6: Public transport corridors	Expansion or intensification of existing settlements, or new settlements, along key existing or proposed public transport corridors linking to Cambridge. Corridors could include those on the Cambridgeshire Guided Busway, current Greater Cambridge Partnership corridors (and proposed Cambridgeshire Guided Busway Corridors), or existing or proposed rail corridors.	Partly – see above at FC4

Conclusion

As set out above, the First Conversation options have been assessed to consider whether they are both reasonable and substantively different to each other, in order to be taken forward for strategic options testing. The conclusions are as follows:

<i>Option</i>	<i>Reasonable?</i>	<i>Unique?</i>	<i>Take forward for strategic testing?</i>
FC1: Densification of existing urban areas	Yes	Yes	Yes
FC2: Edge of Cambridge - outside the Green Belt	Yes	Yes	Yes
FC3: Edge of Cambridge - Green Belt	Partly	Yes	Yes
FC4: Dispersal - new settlements	Yes	Partly	Yes
FC5: Dispersal – villages	Yes	Yes	Yes

FC6: Public transport corridors	Yes	Partly	Yes
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Drawing on the above, all First Conversation options are carried forward to be tested as strategic spatial options.

Annex B. Sifting assessment of long list of additional ideas

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
A0	Current strategy	Cambridge Local Plan 2018 / South Cambridgeshire Local Plan 2018	(Cambridge Local Plan 2.27) The preferred sequential approach for new development can be described as: (first) being within the existing urban area of Cambridge; (second) being within the defined fringe sites on the edge of Cambridge; (third) within the six small-scale Green Belt sites proposed to be released from the inner Green Belt boundary, four of which are within the city; (fourth) within existing and newly identified new settlement locations at Cambourne, Northstowe, Bourn Airfield and Waterbeach; and lastly in identified villages.	Yes	Not explicitly included in First Conversation consultation.
A01	Base Case	Cambridgeshire & Peterborough Independent Economic Review - Final Report	This is a 'business as usual' approach. We expect houses to be built in the areas set aside in local plans. Transport links are upgraded in a way that seems reasonable based on current trends and timelines.	No	Repeat of current strategy
A02	Densification	Cambridgeshire & Peterborough Independent Economic Review - Final Report	This assumes that more houses get built, and jobs get created, in the urban areas of Cambridge and Peterborough, without significantly expanding boundaries. This would mean using remaining brownfield space on the edges to create high-density accommodation. It requires taller buildings in these areas to increase the number of people who can live and work within an area of land.	No	Same as Densification.
A03	Dispersal (sub-regional)	Cambridgeshire & Peterborough Independent Economic Review - Final Report	A dispersal strategy is where new houses and jobs are created outside of the primary urban areas of Cambridge and Peterborough, mainly in the market towns. It could also involve the creation of new towns and villages where previously there was only farmland/countryside.	Yes	The First Conversation consultation did not include any options considering growth extending beyond Greater Cambridge boundaries.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
A04	Fringe Growth	Cambridgeshire & Peterborough Independent Economic Review - Final Report	In the fringe growth scenario, large expansions happen on the outside of Cambridge and Peterborough, while the level of housing density within cities is left unchanged. A fringe growth approach significantly expands the urban footprint of the cities.	No	Same as Edge of Cambridge: Outside Green Belt and Edge of Cambridge: Green Belt
A05	Transport Corridors	Cambridgeshire & Peterborough Independent Economic Review - Final Report	A transport corridors approach focuses on developing jobs and housing along transport corridors which radiate out of the main cities. Transport corridors can include fast bus, tram, or train links, providing rapid transit into cities.	No	Same as Public Transport Corridors
B01	incorporate larger scale development	NPPF	One or more strategic options should...incorporate larger scale development, supported by necessary infrastructure and facilities.	No	All options except Dispersal – villages, imply concentrations of significant growth.
B02	incorporate rural growth	NPPF	One or more strategic options should...incorporate growth in rural areas where it will enhance or maintain the vitality of rural communities.	No	Dispersal - new settlements and Public transport corridors options imply a focus of growth in rural areas.
B03	Support provision of new, or enable access to existing, community infrastructure	NPPF	One or more strategic options should...support the provision of new, or enable access to existing, community infrastructure.	No	All options except Dispersal – villages, imply concentrations of significant growth which will support the creation of new infrastructure. Densification option locates growth close to existing infrastructure.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
B04	Integrate uses including housing and employment	NPPF	One or more strategic options should... ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.	Yes - needs further consideration	Partly: <ul style="list-style-type: none"> • Yes - Densification of existing urban areas, Edge of Cambridge - outside the Green Belt, Edge of Cambridge - Green Belt concentrate housing and employment growth in settlements where employment is already concentrated; • Yes - Dispersal - new settlements would create new jobs and homes in a single location. • No - At a wider scale, an additional option could seek to focus more housing growth towards broad areas of employment growth.
B05	Explicitly rely on existing or proposed transport infrastructure	NPPF	One or more strategic options should...take opportunities from existing or proposed transport infrastructure...for example in relation to the scale, location or density of development.	Yes - needs further consideration	Partly: <ul style="list-style-type: none"> • No - Public transport corridors explicitly relies on existing and proposed transport infrastructure. • No - Dispersal - new settlements acknowledges need to connect new settlements to main centres via transport infrastructure. • Yes - additional options could focus growth in areas relating to the most significant transport projects (ie East West Rail).
B06	Enable active travel and public transport opportunities	NPPF	One or more strategic options should... support walking, cycling and public transport use.	No	<ul style="list-style-type: none"> • All options except Dispersal – villages, imply concentrations of significant growth which will support the creation of new infrastructure, enabling walkable and cyclable places. • Public transport corridors explicitly relies on existing and proposed transport infrastructure. • Dispersal - new settlements acknowledges need to connect new settlements to main centres via transport infrastructure.
B07	Be focused on previously-developed land	NPPF	One or more strategic options should... make as much use as possible of previously-developed or 'brownfield' land.	No	Densification of existing urban areas focuses growth on previously developed land.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
B08	Optimise the density of development, promoting a significant uplift in minimum density standards in town and city centres and other locations well served by public transport		One or more strategic options should...optimise the density of development, promoting a significant uplift in minimum density standards in town and city centres and other locations well served by public transport.	No	No – Densification of existing urban areas explicitly considers densification in Cambridge and the new settlements.
B09	take account of existing Cambridge Green Belt	NPPF	One or more strategic options should...take account of Cambridge Green Belt, including its inner and outer boundaries.	No	No: <ul style="list-style-type: none"> • All of the options together provide choices about locating or not locating growth within existing Cambridge Green Belt. • In particular, Edge of Cambridge: outside Green Belt and Edge of Cambridge: Green Belt explicitly test the most critical of these choices.
B10	Maximise the potential for decentralised energy systems	NPPF	One or more strategic options should...maximise the potential for decentralised energy systems (i.e. include significant scales of development at higher densities that could generate sufficient demand for an effective decentralised energy system).	No	Edge of Cambridge: outside Green Belt, Edge of Cambridge: Green Belt, and Dispersal: New Settlements imply concentrations of significant growth which could support the potential for decentralised energy systems.
B11	focus growth on existing urban areas, thereby reducing impact on countryside and natural capital.	NPPF	One or more strategic options should...focus growth on existing urban areas, thereby reducing impact on the countryside, agricultural land, and natural capital more broadly.	No	No: <ul style="list-style-type: none"> • Densification of existing urban areas focuses growth on previously developed land. • All options except Dispersal: villages seek to concentrate growth and could include higher densities, thereby limiting the widespread impact of development on the countryside and agricultural land.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
B12	Proportionate growth approach: Focus growth in locations that make a positive contribution to local character and distinctiveness	NPPF	Include strategic options that...make a positive contribution to local character and distinctiveness (ie. maintain the current relative roles of settlements within the settlement hierarchy, distributing growth proportionate to locations relative to current size). Note that this is a very specific way of reading the implication of NPPF para. 185. To extract principle for the purposes of identifying potential impacts on strategy options. Many other readings of the implications of this are possible. In reality, any spatial option could affect local character and distinctiveness, particularly under higher growth scenarios.	Yes - needs further consideration	Partly: • No - Densification of existing urban areas, and Edge of Cambridge - outside the Green Belt in principle seek to retain the current settlement hierarchy and also retain policy designations that support the character of Cambridge and its hinterland. • Yes – consideration has not been given previously to what a proportionate growth pattern would look like.
C01	Option 1: Concentration Close to Norwich	Greater Norwich Joint Local Plan	Not described further in Growth Options consultation	No	Close to Edge of Cambridge / no clear option for strategic testing.
C02	Option 2: Transport Corridors	Greater Norwich Joint Local Plan	Not described further in Growth Options consultation	No	Same as Public Transport Corridors
C03	Supporting an existing high-tech corridor.	Greater Norwich Joint Local Plan	Option 3 would concentrate the great majority of the additional 3,300 dwellings in the A11 corridor, with significant growth in the south west fringe, Wymondham and a new settlement in or near the corridor.	Yes	

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
C04	Option 4: Dispersal	Greater Norwich Joint Local Plan	Not described in Growth Options consultation	No	Same as Dispersal
C05	Option 5: Dispersal plus New Settlement	Greater Norwich Joint Local Plan	Not described in Growth Options consultation	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
C06	Option 6: Dispersal plus Urban Growth	Greater Norwich Joint Local Plan	Not described in Growth Options consultation	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
C07	Option 1 – Continue the current approach	Bedford Borough Local Plan 2032	Growth area remains as currently defined and continues to accommodate majority of growth. · Limited development in the remaining rural area, mostly village infilling. · Development in open countryside restricted in line with government policy.	No	Same as Current Strategy, tested in Annex A.
C08	Expanded growth area	Bedford Borough Local Plan 2032	The current 'growth area' (Bedford, Kempston and the villages in the Marston Vale) could be expanded. Development would still be concentrated in the expanded 'growth area' and there would be little development in the remainder of the borough.	Yes	Yes – focuses growth in a geographically specific (rather than typology-specific) location which is not considered through First Conversation options.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
C09	Option 3 – Expanded growth area plus some rural growth	Bedford Borough Local Plan 2032	Growth area as option 2. More growth allowed in the larger villages than in smaller settlements. Development in open countryside restricted in line with government policy.	No	Hybrid - no clear option for strategic testing; hybrid option most likely resulting pattern but to be identified following strategic options testing.
C10	Option 4 – Existing growth area plus new rural growth points	Bedford Borough Local Plan 2032	Growth area similar to option 1 but with less growth than option 1. · Some growth also to be focussed on a limited number of new rural growth points. · Development in the rest of the borough limited to infilling in existing villages. · Development in open countryside restricted in line with government policy.	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
C11	Option 5 – Spread development around existing settlements	Bedford Borough Local Plan 2032	Abandon concentration of development in the growth area. · Allocate development to settlements according to their size (about two thirds to the urban area and one third to rural villages). · Development in open countryside restricted in line with government policy.	No	Same as Dispersal
C12	Science Vale focus plus 'sustainable settlements'	South Oxfordshire Plan	Focus on Science Vale area (60%) with the remainder across 'sustainable settlements' (40%) (likely to be Thame, Wallingford, Henley and some less constrained larger villages e.g. Benson, Berinsfield, Chalgrove, Chinnor, Cholsey, Crowmarsh Gifford, Sonning Common and Watlington).	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
C13	All development located in the high-tech growth area (all in Science Vale)	South Oxfordshire Plan	All additional housing in Science Vale	Yes	

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
C14	All growth in a single new settlement	South Oxfordshire Plan	All additional housing in a single new settlement in the shaded area of the district which is not in the Green Belt or Area of Outstanding Natural Beauty.	No	Locates all growth in a geographically specific (rather than typology-specific) location, but new settlements are already included as an option in First Conversation.
C15	Dispersal	South Oxfordshire Plan	Make land allocations for new homes at all towns, larger and smaller villages, and introduce a more permissive approach to infill development in the smallest villages (but still not hamlets or open countryside).	No	Same as Dispersal
C16	Next to neighbouring major urban areas	South Oxfordshire Plan	Our rural district lies immediately adjacent to the major town of Reading and the city of Oxford. Here there are many employment opportunities as well as universities, regional hospitals and bigger shopping centres. One option would be to put our housing growth on the edge of these neighbouring urban areas.	No	Exact context not relevant to Greater Cambridge, but principle of locating growth adjacent to major urban areas would result in Edge of Cambridge options included in First Conversation.
C17	Raising densities	South Oxfordshire Plan	We could fit in more growth on a smaller area of land by encouraging higher densities in new development. Our current policy, Core Strategy policy CSH2, sets a minimum of 25 dwellings per hectare, which is quite a low density. We set this to make sure that developments are planned sensitively to fit with their settings. However, there are many examples of higher density development which still work well. Higher density doesn't automatically mean small flats, cramped living, no gardens, not enough parking and poor design. The examples in the boxes below show	No	Same as Densification.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
C18	Locating development in particular settlements where it could help fund projects	South Oxfordshire Plan	Public money to fund infrastructure is in short supply. Sometimes the only way that big scale improvements or expansions can be paid for is through development. By the community taking housing development, the council and county council can require housebuilders to contribute towards infrastructure projects. These could be, for example, a new road, a new river bridge, or a new or expanded school. The scale of growth to fund such 'big ticket' items is likely to be quite large, but we would like to know if there are any communities which would welcome investigation of this option. Another route for communities to look at enhanced growth to fund a 'big ticket' project is through preparing a neighbourhood plan.	Yes	No First Conversation option has as its explicit purpose the funding of desired infrastructure, albeit resulting distribution of development could be same as for existing options. To be explored further.
C19	Intensification of city, town and district centres	Introducing the Oxfordshire Plan 2050	No further explanation provided	No	Same as Densification.
C20	Intensification of development within existing suburbs	Introducing the Oxfordshire Plan 2050	No further explanation provided	No	Same as Densification.
C21	Intensification around the edges of larger settlements and strategic extensions	Introducing the Oxfordshire Plan 2050	No further explanation provided	No	Same as Densification/Edge of Cambridge options

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
C22	Spokes and hubs	Introducing the Oxfordshire Plan 2050	(Continue to focus on Oxford and key corridors in to Oxford)	Yes	-
C23	New settlement/s	Introducing the Oxfordshire Plan 2050	No further explanation provided	No	Same as Dispersal: New Settlements
C24	Dispersal	Introducing the Oxfordshire Plan 2050	(This would involve spreading new development evenly across the county, including in smaller settlements)	No	Hybrid of Dispersal: villages and Dispersal: new settlements.
C25	'String' settlement/ settlement cluster	Introducing the Oxfordshire Plan 2050	(Development focused on a number of linked settlements. It could involve new and/or existing/expanded settlements)	Yes	-
C26	'Wheel' settlement cluster	Introducing the Oxfordshire Plan 2050	(Focus on Oxford and the existing larger towns and the key corridors in to Oxford and between the towns)	Yes	-

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
C27	Option 1: Neighbourhood plan-led delivery of growth	Hinckley & Bosworth Local Plan	The distribution pattern for new development is determined by Parish Councils and the Borough Council. Under this option, for the Local Plan period, Local Parishes will be expected to put forward an annual figure for the number of new homes, employment and other land uses that they will bring forward through their Neighbourhood Development Plans. The cumulative figure will then be offset against our Borough's Objectively Assessed Housing Need to establish a residual figure. The Local Plan will	No	Does not provide a clear implication for any spatial distribution that could be tested. Not considered to be a realistic option.
C28	Option 2: Core Strategy approach	Hinckley & Bosworth Local Plan	Development would continue to be directed in accordance with the strategic approach of the current Core Strategy	No	Repeat of current strategy
C29	Option 3: Key Transport and Accessibility Corridors	Hinckley & Bosworth Local Plan	This approach would see development directed towards the key transport corridors in the borough.	No	Same as Public Transport Corridors
C30	Option 4: Garden Village / New Town	Hinckley & Bosworth Local Plan	A new settlement would be developed in the borough through this option. No specific location or broad area was identified in the SIO to accommodate this new settlement.	No	Same as New Settlements

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
C31	Option 5: Proportionate growth of key rural centres	Hinckley & Bosworth Local Plan	Development would be broadly distributed amongst the key rural centres under this option.	No	Would be addressed through Dispersal: Villages.
C32	Option 6: A mix of the above options	Hinckley & Bosworth Local Plan	Rather than rely on one strategic option alone, under this approach a combination of options 1-5 would deliver development in the borough.	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
D01	Garden City, growing an existing city	Urbed, 2014. Uxcester Garden City Wolfson Economics Prize submission	3 major urban extensions in a 'snowflake' pattern. Doubles population of existing city of 200,000 to 400,000, through extensions of 50,000 people each.	Yes - needs further consideration	Follows same distribution as Edge of Cambridge options, but at a significantly greater scale such that the footprint of developed land would include elements of other options including current villages.
D02	New living campus clusters	Mae: Urcadia	Clusters of development in 1km2 of varying densities and resulting scales: 10,000 people - 25,000 people	Yes - needs further consideration	Unclear what spatial distribution this option would have. Requires further consideration.
D03	Town cluster; village cluster; village	VeloCity	Villages w/in 7 mile radius of local centres/PT hubs grouped into 3-4 clusters of 4-6 villages each w/in 1-2 miles of each other. Each village takes on a specific role for the cluster, and takes 600-1,000 homes on high density plots. Cars removed from villages.	Yes - needs further consideration	Unclear what spatial distribution this option would have. Requires further consideration.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
D04	Town Centre Intensification	5th Studio CamMKOx typologies	This typology involves the intensification of existing town or city centres. Such an approach has the potential to make the most efficient use of existing infrastructure by concentrating development in the most accessible and sustainable locations. As well as providing space for new homes, these areas have the potential to provide new or expanded higher-order facilities and amenities in anticipation of the general increase in population within the areas that these centres serve (through the deployment of other typologies say, in particular the “linked places” typologies).	No	Same as Densification
D05	Suburban Intensification	5th Studio CamMKOx typologies	Suburban intensification in areas of opportunity: certain forms of 20th century suburban development such as open plan council housing estates, and the large areas of often underused and marginal green space around road infrastructure in the later New Towns (e.g. Northampton, Peterborough and Milton Keynes), may offer more potential. Much of this “Space Left Over after Planning” would benefit from sensitive intervention to better frame highways and open space, and remains in single, most often public, ownership, making larger-scale, coordinated development possible	No	Same as Densification
D06	Edge Intensification	5th Studio CamMKOx typologies	Retrofit of peripheral, low density, and currently monocultural employment, retail and leisure areas, to diversify their use and make more efficient use of the land	Yes - needs further consideration	Possibly addressed via Densification / Edge of Cambridge options, albeit retrofitting existing areas of development would result in growth in different locations than if growth were to take place on new edge of Cambridge sites.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
D07	Strong Edge and Satellite	5th Studio CamMKOx typologies	<p>This type of development is a satellite settlement distinct from, but closely linked to, a neighbouring existing place. The distance out may vary, but the quality of the connection to the city is vital. The separation of the settlement, as opposed to it being directly connected to the host city, may be due to constraints on growth at the edge of the city itself. Some examples are flood plains or green belt designation, or because of the suitability of particular locations of radial public transport routes.</p> <p>As with the Edge Intensification / Edge City typology, it is important that locations developed according to this typology have their own identity, sense of place, and local facilities (appropriate for the scale of the settlement) within walking/cycling distance, as well as having a primary connection to key locations within the host settlement..</p>	No	Same as Dispersal: new settlements.
D08	Compact City - Urban Extension	5th Studio CamMKOx typologies	A development linked to the existing town centre, principally by convenient and quick walking and cycling routes, that actively discourages motor transport.	No	Same as Edge of Cambridge: Outside Green Belt and Edge of Cambridge: Green Belt
D09	New Small Settlement	5th Studio CamMKOx typologies	<p>small-scale, deliverable settlements with a strong sense of identity and community and easy access to the countryside. A settlement that could also benefit from the economies of scale necessary to make good transport infrastructure and access to higher-order functions affordable and sustainable.</p> <p>Suggested locations include on transport corridors linked to larger population centres.</p>	No	Same as Dispersal: new settlements

<i>Ref.</i>	<i>Option/Principle/Concept name</i>	<i>Source</i>	<i>Description</i>	<i>Sifting: take forward for full testing?</i>	<i>Sifting comments</i>
D10	New Town	5th Studio CamMKOx typologies	the population is large enough to justify a station on the national rail network, with the station being a defining feature of the place, but small (and compact) enough that walking and cycling are able to provide for most internal journeys. Specifically in terms of the chosen case study location, it is assumed that the settlement would justify a new station on East West Rail, even if the line is delivered as a fast regional line with relatively few stops – in a way that multiple smaller settlements could not.	No	Same as Dispersal: new settlements
D11	String City	5th Studio CamMKOx typologies	a number of smaller linked settlements. However, in this case these smaller settlements are assumed to aggregate together to create a place of sufficient scale to be thought of as a city, rather than connecting to, and remaining subservient to, an existing larger-scale “central place”. This typology is therefore based on the new agglomeration having, over time, a large degree of self-containment, its own higher order services and a greater degree of national connectivity than the preceding “new town” typology. The component parts of this typology might vary in scale and in character, and might include existing places as well as new ones. Their totality would be defined by the high degree of connectivity between them. This would most likely be achieved through a new, and in the case of existing towns or villages retro-fitted, high quality public transport network.	Yes - needs further consideration	Possibly addressed via Dispersal: New Settlements and Dispersal: Villages. Requires further exploration
D12	New City	5th Studio CamMKOx typologies	population of at least 250,000 - similar to Milton Keynes today - and would be largely self-contained in terms of jobs and services, serving as a new regional centre for its hinterland.	No	Same as Dispersal: new settlements

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
D13	Minimum growth	Cambridge Futures, 2000	Minimum Growth would preserve the City of Cambridge and surrounding South Cambridgeshire with the minimum change. All new dwellings and business floorspace would be allocated to East Cambridgeshire and Huntingdonshire.	Yes - needs further consideration	Absolute minimum growth was not explored as a First Conversation option.
D14	Densification	Cambridge Futures, 2000	Densification would put the maximum development in the City of Cambridge where demand is highest. Dwellings and business floorspace would be allocated predominantly to the city, so higher buildings in a more compact form would be allowed to replace existing low-density development.	No	Same as Densification
D15	Necklace	Cambridge Futures, 2000	Necklace would be the continuation of the policy which has existed for the last fifty years; it would produce only minimum growth in the city and green belt, with more growth in existing and new villages and in the main market towns.	No	Same as Dispersal: New Settlements and Dispersal: Villages
D16	Green Swap	Cambridge Futures, 2000	Green Swap would allow development in selected areas of the green belt which are of less scenic value and/or are not available for public use. In return for such permission, developers would provide equivalent or enhanced amenities for the public farther out of town	No	Same as Edge of Cambridge: Green Belt
D17	Transport Links	Cambridge Futures, 2000	Transport Links envisages all further development as happening within easy access of a public transport corridor. It would include more intensive use of the existing lines and reinstatement of the St Ives–Huntingdon line.	No	Same as Public Transport Corridors
D18	Virtual Highway	Cambridge Futures, 2000	Virtual Highway proposes a high- capacity electronic communications system that would provide instant business and personal communication for work, education, retail and other services. It is based on a concept of a multimedia super-corridor where audio, computer and visual communications are interconnected.	Yes	

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
D19	New Town	Cambridge Futures, 2000	New Town would concentrate most of the development in a single location, large enough to make the new town an alternative to the City of Cambridge. It would necessitate investment in new transport links to the city.	No	Same as Dispersal: New Settlements
D20	Copenhagen Green Finger Plan	Centre for Public Impact Case Study	Directed urban housing and business developments alongside five train lines and roads, separated by green areas for recreation. These urbanised areas formed the fingers, while the city centre could be seen as the palm of the hand. The station proximity principle (stationsnærhedsprincippe) allowed for new housing, businesses, and public services to be erected only close to train stations; The green wedge principle worked to preserve the green spaces between these urban settlements.	Yes - needs further consideration	Close to Public Transport Corridors option, but takes the idea to the ultimate extent.
D21	Net zero growth	Officer idea	Drawing on the idea that climate change legislation has greater weight than national planning policy, restrict all village growth and only locate growth in environmentally sustainable locations including Cambridge, Cambourne and new settlements. Ignore policy designations such as Green Belt.	Yes - needs further consideration	Further consideration of spatial implications required.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
D22	Spatial urbanism approach	Officer idea	<ul style="list-style-type: none"> • Centres and nodes first - focussing new development at existing centres/interchanges and prioritising land and optimising density within 400m and 800m walking distances. Areas and settlements with railway stations land within 1000m/5minute cycle ride should be prioritised for development. Guided bus stops are a form of interchange and could also form part of this. • Compact growth/intensification in rural locations that fall within a theoretical 5 mile/30-minute cycle ride of Cambridge, especially settlements with railway stations and Rapid Transit stops such as Cambridgeshire Guided Busway. Apply the above compact criteria of optimising land within 400m/800m of centres (this could provide the theoretical settlement boundary, refined through other constraints such as ecology). Interestingly applying a 30 minute 'golden' cycling distance this includes the settlements of: <ul style="list-style-type: none"> • Intensification/edge expansion of settlements served by East-West Rail, releasing and prioritising land within 1000m/5minute cycle ride of new railway station. • Any potential new compact settlement located on East-West Rail/existing trainline – compact form, with shape more-or-less concentric, new settlement extent and radius from centre dictated by 5-10minute cycle ride 	Yes - needs further consideration	Further consideration of spatial implications required.
D23	Nature first	Officer idea	Shape a spatial strategy based upon first considering the best opportunities for habitats and wildlife.	Yes	

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
E01	Preserving the Green Lung	First Conversation response, Q42	Protecting the green belt around Cambridge thus preventing urban sprawl and retaining the character of Cambridge	No	Edge of Cambridge: non-Green Belt explicitly explores the potential to avoid development around Cambridge.
E02	Housing in close proximity to employment/innovation centres	First Conversation response, Q42	Provide residential development in locations to support the growth of the employment sector. The location of employment areas such as the Innovation Corridor are generally in rural areas. As such there is a limited number of dwellings which could serve employees of such institutes. By providing residential development in close proximity, skilled workers will continue to be attracted to such institutions. It will assist in the reduction of journeys to and from employment sites by motor vehicle given the opportunities to cycle or walk. This will assist the Greater Cambridge Authority in meeting their key themes within the Plan.	Yes	
E03	Tied cottages /key worker housing	First Conversation response, Q42	Employers provide housing in close proximity to place of employment to reduce the need to travel	Yes	
E04	The Manchester Model	First Conversation response, Q42	Creating sustainable transport links, reducing the number of trips needed by car and increasing journeys by bike, foot and public transport.	No	A range of First Conversation options seek to enable sustainable transport opportunities.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
E05	The 'Gruene Finger'	First Conversation response, Q42	The towns grow out into the country-side from existing settlements but always with green space secured alongside and decent cycle paths, so you can cycle across town over grass and through trees; a good example is Osnabrück	Yes	
E06	Focus development to the east side of the city	First Conversation response, Q42	"the east side of the city offers significant scope for housing and commercial development. Such development would have the advantage of being close to the principal centres of employment and the existing rail infrastructure whilst also opening up opportunities for new transport links to connect the main centres of employment more effectively. Most significantly, it includes land which has previously been safeguarded for development, and is within the boundaries of the existing urban area so would provide opportunities in line with the existing spatial strategy" CPIER p42.	No	Addressed through Edge of Cambridge options
E07	Blended spatial strategy	First Conversation response, Q42	a 'blended spatial strategy' of four possible scenarios. The scenarios considered included: - densification - dispersal - fringe growth - transport corridors	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
E08	The A428 Corridor	First Conversation response, Q42	The A428 corridor running due west of Cambridge to Cambourne and St Neots presents a broad transport corridor that is due to receive substantial investment in relation to East West rail (including new station at Cambourne) and the Cambridge Automated Metro. Both of these transport interventions will provide a good choice of sustainable transport modes within this growth corridor and are due to be constructed before 2030.	Yes	

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
E09	Key principles	First Conversation response, Q42	In areas with access to existing/planned public transport links; <ul style="list-style-type: none"> • In areas with good provision of cycleways/pedestrian linkages; • In areas well connected to local employment ; and • In key villages with services or local existing/planned employment 	No	These principles are addressed through a range of the First Conversation options.
E10	Sustainable self-contained communities	First Conversation response, Q42	The fundamental requirement is that every significant development must create, or be part of, a sustainable self-contained community with all of accommodation, amenity, education, and employment.	No	Addressed through Dispersal: New Settlements option
E11	Sustainable Transport Focus	First Conversation response, Q42	Sites should be chosen on their ability to satisfy sustainable transport goals and shift the overwhelming majority of journeys from cars to walking, cycling and public transport. If a realistic Transport Assessment cannot achieve this then the site should not be considered suitable for development. Furthermore, the location and compactness of development is only part of the story: to reduce car usage you cannot give away money, land and resources in ways that enable unnecessary usage of cars	No	No clear option proposed.
E12	Development on the edge of Cambridge with re-provision of green belt to compensate	First Conversation response, Q42	Develop areas on the edge of the city but with an equivalent area of land added to the Greenbelt further out from Cambridge	No	Addressed through Edge of Cambridge options

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
E13	Sustainable villages	First Conversation response, Q42	The scale of development that occurs at individual villages will depend on the level of services and facilities.	No	Addressed through Dispersal: Villages option
E14	Edge of Cambridge at public transport nodes	First Conversation response, Q42	Development at the edge of Cambridge at public transport nodes and on land outside of green belt and in Cambridge Green belt. The East West rail corridor could provide major locations for larger development and/or new settlements.	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
E15	Flexible approach	First Conversation response, Q42	Allow developments in sustainable locations to ensure there is a balance of homes and jobs in the right place. It is important to ensure that a range of small sites are allocated in the Local Plan to ensure that these can be delivered in the short to medium term. The Local Plan should not overly-rely on large strategic allocations which are complex to deliver and rely on costly infrastructure to proceed.	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
E16	Brownfield Sites First	First Conversation response, Q42	Development should, where possible, be directed to existing brownfield sites; in particular, within urban areas.	Yes	
E17	Airport site	First Conversation response, Q42	Should Cambridge Airport relocate and its land be released, this would offer up a significant development opportunity.	No	Addressed through Edge of Cambridge options.

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
E18	Major new developments	First Conversation response, Q42	Major new developments appear to be the main component of meeting the growth targets for housing and employment. It follows that sites with good transport connections are preferable.	No	Addressed through Edge of Cambridge options
E19	A combination of all suggested	First Conversation response, Q42		No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
E20	Hybrid of new communities and small scale extensions to existing villages	First Conversation response, Q42	Large scale in new well located , highly green communities . Small scale as rural exception sites on edge of well located sustainable established communities.	No	Hybrid - not clearly distinct from First Conversation options, which are all described as a 'Focus on...'. Hybrid option most likely resulting pattern but to be identified following strategic options testing.
E21	'Nature recovery network'	First Conversation response, Q42	The plan should map a 'nature recovery network' as a framework to guide essential development. Water and water sources are a vital part of this connectivity, as are drains, streams, rivers, lakes and ponds. A 'nature recovery network' must include these aquatic elements at the same time as identifying new large-scale areas for habitat creation, including new woodlands and areas of natural regeneration, and opportunities for linking them all together. The plan should recognise that 'flooding', which will be increasingly likely with climate change, can be mitigated upstream by slowing river drainage. This 'natural' approach would require a reversion to an earlier pattern of agricultural land-use management with wet meadows and less arable land in the flood plain itself.	Yes	

Ref.	Option/Principle/Concept name	Source	Description	Sifting: take forward for full testing?	Sifting comments
E22	Densification around sustainable transport links	First Conversation response, Q45	Build taller buildings around sustainable transport links such as Cambridge North	No	Addressed through Densification option.

Annex C. Full testing of short-listed additional ideas

Revisit of sources that informed First Conversation options

Option A0: Current strategy

Source

- Plan/Project: Cambridge Local Plan 2018 / South Cambridgeshire Local Plan 2018
- Specific document: Adopted [Cambridge Local Plan 2018](#) / Adopted [South Cambridgeshire Local Plan 2018](#)

Description (from source)

(Cambridge Local Plan 2.27) The preferred sequential approach for new development can be described as:

- (first) being within the existing urban area of Cambridge;
- (second) being within the defined fringe sites on the edge of Cambridge;
- (third) within the six small-scale Green Belt sites proposed to be released from the inner Green Belt boundary, four of which are within the city;
- (fourth) within existing and newly identified new settlement locations at Cambourne, Northstowe, Bourn Airfield and Waterbeach; and
- lastly in identified villages.

South Cambridgeshire Local Plan 2.22

The distribution of housing across the development sequence in the adopted Local Plans is shown below:

	Existing Completions and Commitments (both areas)	New Sites Cambridge	New Sites South Cambs	TOTAL	%
Cambridge Urban Area	5,358	1,470	0	6,282	19
Edge of Cambridge	11,370	890	410	12,670	35
New Settlements and Cambourne West	3,445	0	4,610	8,055	23
Rural Area (including windfalls)	7,284	0	936	8,220	23
TOTAL	27,457	2,360	5,956	35,773	100

Source: Housing Trajectory November 2015

Purpose/effects (from source)

Sequential approach to development is in principle the most sustainable

- provide as many new homes as close to new jobs as possible to minimise commuting and to minimise and mitigate harmful effects for the environment, climate change and quality of life.

- Balance above aim with protecting the purposes of Cambridge Green Belt, which aims to protect the unique character of Cambridge as a compact, dynamic city with a thriving historic centre, maintain and enhance the quality of the city's setting, and prevent the city merging with the ring of necklace villages. The Green Belt and its purposes help underpin the quality of life and place in Cambridge, which are fundamental to economic success.
- Provide new homes in locations that are or can be supported by transport and other infrastructure

Relevant in a Greater Cambridge context?

Partly

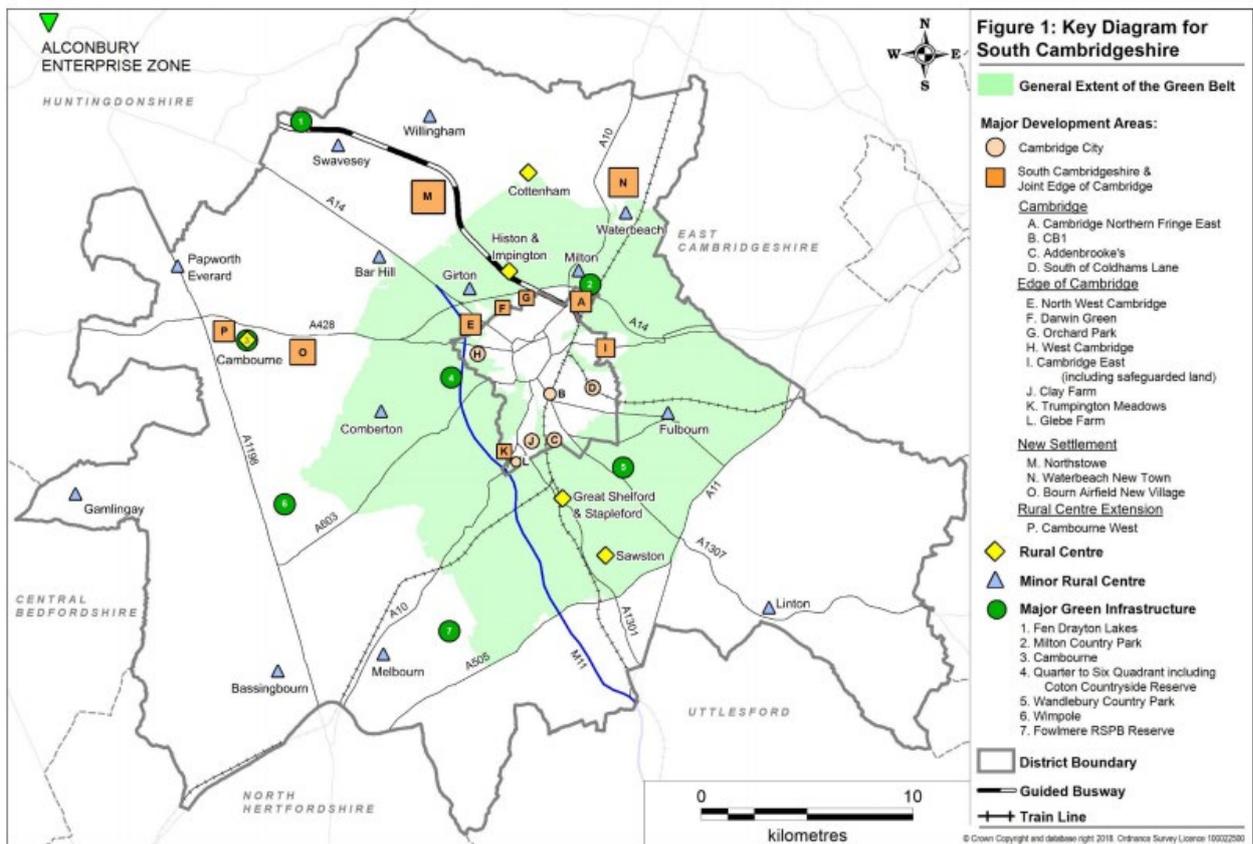
- Yes – by definition this Cambridge and South Cambridgeshire development strategy is relevant to this area.
- No – the choices available to the councils now are somewhat different, in that the strategy choices made in the adopted plans impact on residual capacity in the sources of supply. The balance of the distribution of homes and jobs might therefore be different.

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 1: A0 - Example growth option diagram

[South Cambridgeshire District Council, 2018. South Cambridgeshire Local Plan 2018, Figure 1: Key Diagram for South Cambridgeshire, p29](#)



Description

Sequential approach taken to distributing growth as follows, relying on capacity of each source of supply and only using the next source of supply within the settlement hierarchy if required by the growth level scenario:

- First, as much growth as possible focused on the urban area of Cambridge, as determined by capacity.
- Second, growth focused on remaining edge of Cambridge fringe sites outside of Green Belt, as determined by capacity.
- Third, limited growth focused on edge of Cambridge within Green Belt
- Fourth, growth focused in one or more new settlements, assumed to be within south west or south east quadrants linked to existing or proposed high quality public transport infrastructure
- Fifth, remaining growth focused on rural centres and minor rural centres

Substantively different to existing options?

- No – This option focuses growth as far as reasonably possible in the Cambridge Urban Area, so would likely be close to a high growth scenario under the Densification option, for which additional growth locations need to be identified.

Reasonable?

N/A

Option A03: Dispersal (sub-regional)

Source

- Plan/Project: Cambridgeshire & Peterborough Independent Economic Review – Final Report
- Specific document: [Cambridgeshire & Peterborough Independent Economic Review – Final Report](#)

Description (from source)

A dispersal strategy is where new houses and jobs are created outside of the primary urban areas of Cambridge and Peterborough, mainly in the market towns. It could also involve the creation of new towns and villages where previously there was only farmland/countryside.

Purpose/effects (from source)

Advantages:

- Bringing new homes and jobs to towns and villages where populations are ageing could bring new life into them.
- If market towns can develop their own unique selling points (as some in the area have successfully done) then they may attract small business ‘clusters’.
- Market towns have some quality of life advantages and may enjoy close communities.

Disadvantages:

- Uncertainty over how likely it is that sufficient jobs would move into the market towns to make dispersal work on a large scale. In some cases it may, but it would be high risk to attempt to build many houses in the hope that jobs would follow.
- If jobs did not arise on a dispersed strategy, commuting problems into cities will intensify, and a growing sense that the towns are merely ‘dormitories’ will develop.

A ‘jobs-first’ approach to market towns, which focuses first on bringing employment, and then second on housing, is preferable.

Relevant in a Greater Cambridge context?

Partly:

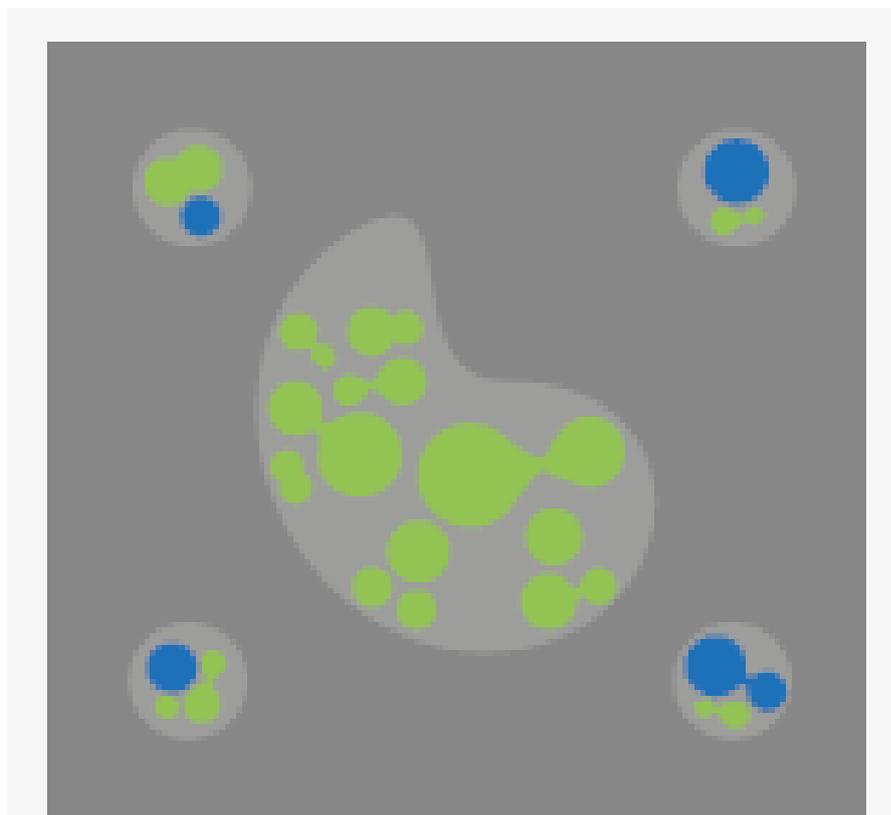
- Yes – Greater Cambridge is surrounded by market towns such as St Neots, Huntingdon, St Ives, Ely, Newmarket, Haverhill, Saffron Walden and Royston.
- Yes – Notwithstanding the above, growth could be located in settlements outside of Cambridge urban area such as at the committed new settlements, as well as at market towns beyond the boundary of South Cambridgeshire.
- Yes - Royston is a market town that adjoins the boundary of South Cambridgeshire. In theory this settlement could be expanded within the boundary of South Cambridgeshire.
- No – the geographical scope of the Greater Cambridge Local Plan (stated explicitly to be relevant to consideration of reasonable options in the Strategic

Environmental Assessment Directive) is limited to Cambridge and South Cambridgeshire.

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 2: B1 - Example growth option diagram



Source: Cambridgeshire & Peterborough Independent Economic Commission, 2018. Cambridgeshire & Peterborough Independent Economic Review - Final Report, p19

Description

Employment and housing growth focused in committed and/or new settlements within Greater Cambridge, and in market towns beyond Greater Cambridge, such as at St Neots, Huntingdon, St Ives, Ely, Newmarket, Haverhill, Saffron Walden and Royston.

Substantively different to existing options?

- Yes – The First Conversation consultation did not include any options considering growth extending beyond Greater Cambridge boundaries.

Reasonable?

Reasonable: National policy?

Partly:

- No – a strategy that focused growth beyond the boundaries of Greater Cambridge would be incompatible with NPPF para. 35 requiring plans to be

Positively prepared – providing a strategy which, as a minimum, seeks to meet the area’s objectively assessed needs.

- Yes – a strategy that focused growth within Greater Cambridge but was based on agreement with neighbouring authorities about their taking unmet needs beyond the boundaries of Greater Cambridge could be compatible with national policy.

Reasonable: absolute constraints?

- Capacity: Unknown – assume Yes.
 - It is assumed that there is some capacity for growth in market towns beyond Greater Cambridge, although this is not known for certain.
- Environmental constraints: Unknown – assume Yes.
 - The locations of and typologies for growth passed to neighbouring districts cannot be assumed, as this would be a matter for each relevant Local Planning Authority. As such, it is not possible to assess whether this option would be limited by environmental constraints. However, given the land area included in neighbouring districts, it seems reasonable to assume that there is land available for some growth which is not limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown
 - The locations of and typologies for growth passed to neighbouring districts cannot be assumed, as this would be a matter for each relevant Local Planning Authority. As such, it is not possible to assess even at a high level whether this option would be viable.
- Deliverability: Unknown, assume challenging
 - As noted above, it is uncertain how likely it is that sufficient jobs would move into the market towns beyond Greater Cambridge to make dispersal work on a large scale:
 - It would be high risk to attempt to build many houses in the hope that jobs would follow.
 - If jobs did not arise on a dispersed strategy, commuting problems into cities will intensify, and a growing sense that the towns are merely ‘dormitories’ will develop.
 - Agreeing to pass on growth to neighbouring districts could be a challenging political and legal process, including but not limited to the following issues:
 - Any dispersal of growth beyond Cambridge and South Cambridgeshire would need agreement under the Duty to Cooperate with neighbouring bodies.
 - Without a sub-regional strategic statutory plan, the appropriateness of the Greater Cambridge Local Plan might be reliant on other plan processes that are not aligned in timetable.

- Without a sub-regional strategic statutory plan, it is challenging to see how Sustainability Appraisal for the Greater Cambridge Local Plan could appropriately test options extending beyond the Greater Cambridge geography

Drawing on the above, it is not considered reasonable to test this option further, as it is not compliant with national policy, and goes beyond the scope of what reasonable options are as set out in SEA Regulations.

Spatial principles set out in the National Planning Policy Framework

Principle B04: Integrate uses including housing and employment

Source

- Plan/Project: National Planning Policy Framework, 2019. Paragraph 92

Description (from source)

Planning policies and decisions should...ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.

Purpose/effects (from source)

To provide the social, recreational, and cultural facilities and services the community needs.

Relevant in a Greater Cambridge context?

- Yes – relevant in any spatial context.

Potential distribution of growth in a Greater Cambridge context

Growth distributions that would integrate housing, economic uses, facilities and services could include:

- Growth focused in areas close to existing infrastructure and services, such as within Cambridge
- New housing growth focused in sufficient concentrations so as to generate demand for economic uses and community facilities and services, such as at new settlements.
- While many locations close to Cambridge could be considered as key employment areas, one possible interpretation of an integrated approach to locating housing, jobs would be to focus growth to the south of Cambridge close to research parks within the biotech cluster. This area to date has seen employment but not significant housing or infrastructure growth. The Greater Norwich approach built on an area of growth of all uses.

Substantively different to existing options?

Partly:

- Yes – southern cluster approach would focus growth in a geographically specific (rather than typology-specific) location which is not considered through First Conversation options.
- No – focus of growth within Cambridge or at new settlements is already addressed by First Conversation options.

Reasonable?

Reasonable: national policy?

Yes – this option is derived from the NPPF.

Reasonable: absolute constraints?

- Capacity: Yes.
 - It is assumed that there is some capacity for growth.
 - The area, south of Cambridge is relatively undeveloped with several small settlements located parallel with the M11. Extensions to these

include considerable risk of settlement coalescence. Whilst there is more capacity for growth in areas either side of the A1307, the need for substantial infrastructure to support large scale residential development would need to be balanced against its environmental impact.

- Environmental constraints: Yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.
 - The area is predominantly rural/agricultural and therefore significant development would have an impact on the area's character and environmental qualities. It can however be assumed that some areas will not be limited by absolute environmental constraints.
 - However, the River Granta flows through this area and feeds into the River Cam. Any significant development in the area affecting its flow e.g., with increased run-off or flow rates would potentially have an impact on the River Cam and Cambridge.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes but challenging.
 - A single growth location can be assumed to be viable but very much dependent on size of growth. Considerations include:
 - A balance between sustainable residential growth and environmental impact will need to be identified. Sufficient housing growth will be necessary for the development to be viable to deliver the necessary infrastructure including transport improvements.
 - Expanding existing settlements would be more viable but limited in capacity to avoid settlement coalescence and therefore limited in terms of necessary infrastructure improvements
- Deliverability: Unknown – assume yes but challenging.
 - Deliverability is very much dependent on scale of permissible development.
 - As noted above, it is uncertain as to how much residential growth could be provided that provides sufficient infrastructure to be sustainable without adversely affecting either the immediate area or areas beyond.
 - Expanding existing villages would be more feasible

Principle B05: Explicitly rely on existing or proposed transport infrastructure

Source

- Plan/Project: National Planning Policy Framework, 2019. para 102,103

Description (from source)

Transport issues should be considered from the earliest stages of plan-making and development proposals, so that opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated.

Purpose/effects (from source)

Reduce congestion and emissions and improve air quality and public health.

Relevant in a Greater Cambridge context?

- Yes – there are current and proposed transport infrastructure projects in Greater Cambridge that could support future growth.

Potential distribution of growth in a Greater Cambridge context

Growth focused along key transport corridors into Cambridge, including those provided for by the Cambridgeshire Autonomous Metro and East West Rail proposals.

One potential interpretation of this principle would be to focus growth on the corridor to the west of Cambridge, which will be provided for by the Cambridgeshire Autonomous Metro and East West Rail proposals.

Substantively different to existing options?

Partly:

- No – Densification option would enable consideration of appropriate locations for higher densities related to public transport infrastructure.
- No – Dispersal: New Settlements option description notes that such opportunities would rely on being connected to the strategic transport network.
- No – Public Transport Corridors option addresses growth opportunities relying on existing and proposed public transport infrastructure.
- Yes – Notwithstanding the above, First Conversation options do not focus all growth in a geographically specific (rather than typology-specific) location.

Reasonable?

Considering only an option focusing growth on the corridor to the west of Cambridge.

Reasonable: national policy?

Yes – compatible with NPPF para. 102 on realising opportunities from existing or proposed transport infrastructure.

Reasonable: absolute constraints?

- Capacity: Yes.
 - It is assumed that there is capacity for development close to Cambourne.

- It is assumed that there may be capacity for development at the villages along the A428 corridor.
- Environmental constraints: Unknown – assume Yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes.
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing or expanding new settlements in South Cambridgeshire is currently viable.
 - As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
- Deliverability: Unknown – assume mixed
 - Deliverability will depend on locations and typologies of development:
 - Delivery assumed to be supported by being close to strategic public transport infrastructure
 - Delivery rates are assumed to be affected by locating a number of developments close to one another.
 - New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation of how much of a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.
 - Developer contributions on individual smaller sites do not generate substantive contributions to support major transport and other infrastructure provision. As such, an option that focused growth towards smaller sites might result in cumulative impacts on the transport network, for which it might be hard to collect sufficient funds to mitigate. Over time this could lead to an infrastructure deficit that might make such a strategy undeliverable in the long term.

Principle B12: Proportionate growth approach (focus growth in locations that make a positive contribution to local character and distinctiveness)

Source

- Plan/Project: National Planning Policy Framework, 2019. para 102,103

Description (from source)

Include strategic options that...make a positive contribution to local character and distinctiveness (ie. maintain the current relative roles of settlements within the settlement hierarchy, distributing growth proportionate to locations relative to current size).

Note that this is a very specific way of reading the implication of NPPF para. 185. To extract principle for the purposes of identifying potential impacts on strategy options. Many other readings of the implications of this are possible. In reality, any spatial option could affect local character and distinctiveness, particularly under higher growth scenarios.

Purpose/effects (from source)

Make a positive contribution to local character and distinctiveness.

Relevant in a Greater Cambridge context?

- Yes – there is capacity for growth at locations across the settlement hierarchy within Greater Cambridge.

Potential distribution of growth in a Greater Cambridge context

Proportionate growth relative to current or committed size of settlement, such that the most growth would be distributed to the location at the start of this list and the least growth to the locations at the end of this list: Cambridge, Waterbeach, Northstowe, Cambourne, largest villages, smaller villages.

Substantively different to existing options?

- No - Likely be close to a high growth scenario under the Densification option, for which additional growth locations need to be identified.

Note this is similar to A0: Current strategy.

Reasonable?

N/A

Plan-making practice in the UK

Option C03: Supporting an existing high-tech corridor

Source

- Plan/Project: Greater Norwich Joint Local Plan
- Specific document: [Towards A Strategy – Greater Norwich Development Partnership 29th January 2019](#)

Description (from source)

Concentrate the great majority of the additional 3,300 dwellings in the A11 corridor, with significant growth in the south west fringe, Wymondham and a new settlement in or near the corridor.

“Strategic growth area” broadly defined to include:

- The City of Norwich;
- The suburbs/fringe parishes which make up the rest of the urban area;
- All the strategic employment areas, Norwich City Centre, Norwich Research Park, Longwater/the Food Hub, Wymondham, Hethel, the Norwich Airport area, Broadland Business Park, Broadland Gate and Rackheath. These areas provide for growth of the key employment sectors identified in the Norfolk and Suffolk Economic Plan. Local evidence shows that all of the strategic employment locations have the potential for jobs and business growth;
- Around 80% of total housing growth (existing commitment and emerging distribution);
- All but one of the strategic scale housing growth locations (locations with 1,000 dwellings +);
- High quality public transport, road and cycling infrastructure (existing and planned);
- The great majority of brownfield sites in the area.

Purpose/effects (from source)

Maximise economic growth potential by

- Support existing growth in an existing corridor, building on existing infrastructure
- Link with wider growth corridors
- Provides a focused area to promote to partners for further investment
- Link to the city of Norwich as a driver of the regional economy, supporting its vitality and regeneration.

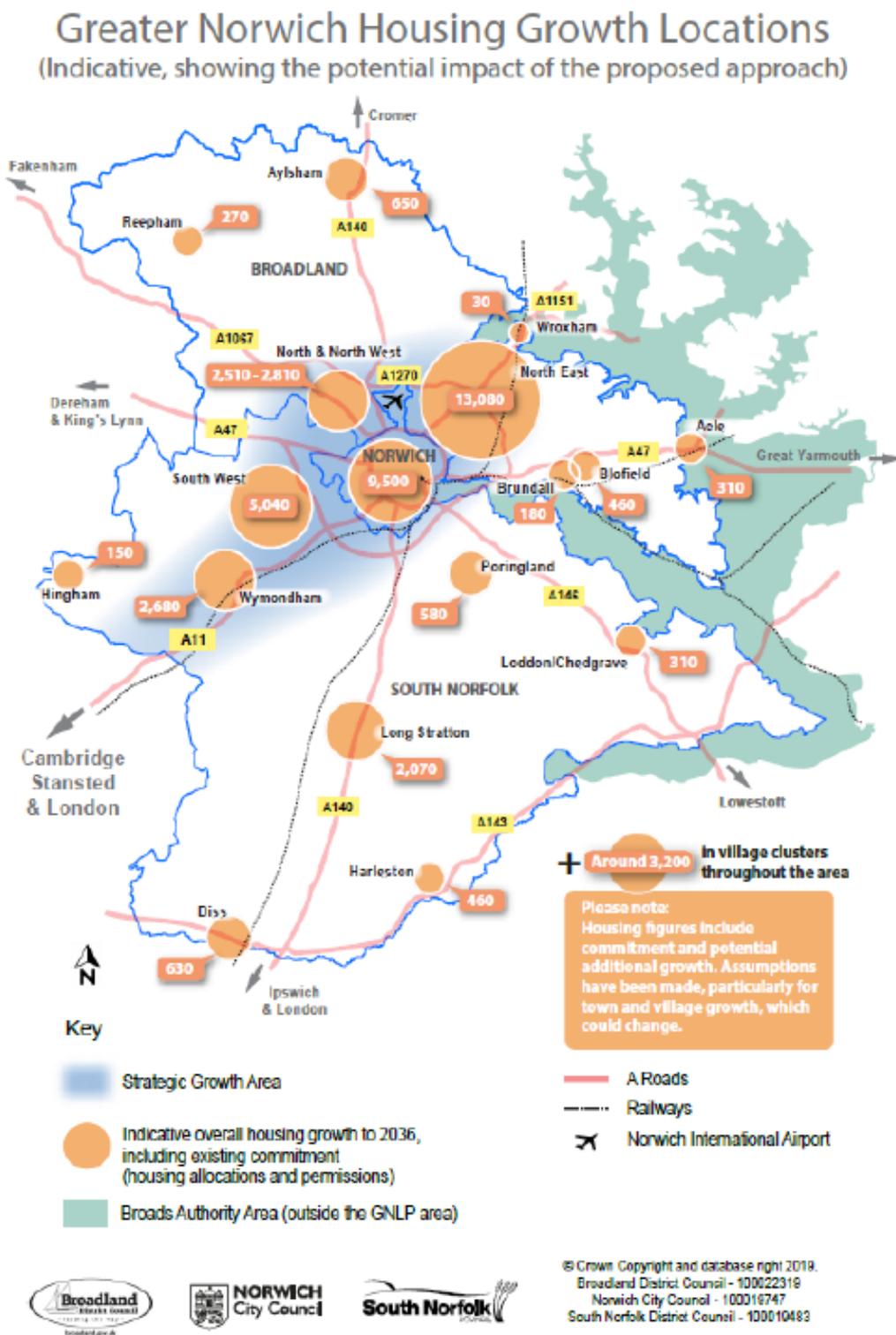
Relevant in a Greater Cambridge context?

Partly

- Yes – the most focused high-tech corridor in Greater Cambridge is the cluster of biotech organisations south of Cambridge, as a part of the UK's Innovation Corridor (London-Stansted-Cambridge Corridor).
- No - South of Cambridge area to date has seen employment but not significant housing or infrastructure growth. The Greater Norwich approach built on an area of growth of all uses.
- No – In some ways the whole of Greater Cambridge could be considered a high-tech area.

Potential distribution of growth in a Greater Cambridge context Diagrams

Figure 3: B1 - Example growth option diagram



Description

Focus growth within the life sciences cluster area to the south of Cambridge.

Substantively different to existing options?

- Yes – focuses growth in a geographically specific (rather than typology-specific) location which is not considered through First Conversation options.

Reasonable?

Reasonable: National policy?

Yes:

- Integration of housing and jobs is supported by NPPF para. 92.

Reasonable: absolute constraints?

- Capacity: Yes.
 - The area, south of Cambridge is relatively undeveloped with several small settlements located parallel with the M11 - it is assumed that there is some capacity for growth.
- Environmental constraints: Yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.
 - The area is predominantly rural/agricultural and therefore significant development would have an impact on the area's character and environmental qualities. It can however be assumed that some areas will not be limited by absolute environmental constraints.
 - However, the River Granta flows through this area and feeds into the River Cam. Any significant development in the area affecting its flow e.g., with increased run-off or flow rates would potentially have an impact on the River Cam and Cambridge.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes.
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing or expanding new settlements in South Cambridgeshire is currently viable.
 - As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
- Deliverability: Unknown – assume mixed
 - Deliverability will depend on locations and typologies of development:
 - Delivery assumed to be supported by being close to strategic public transport infrastructure
 - Delivery rates are assumed to be affected by locating a number of developments close to one another.
 - New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation of how much of a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.

- Developer contributions on individual smaller sites do not generate substantive contributions to support major transport and other infrastructure provision. As such, an option that focused growth towards smaller sites might result in cumulative impacts on the transport network, for which it might be hard to collect sufficient funds to mitigate. Over time this could lead to an infrastructure deficit that might make such a strategy undeliverable in the long term.

Option C08: Expanded growth area

Source

- Plan/Project: Bedford Borough Local Plan 2032
- Specific document: [Development Strategy and Site Selection Methodology Background Paper, September 2015](#)

Description (from source)

- Existing growth area would expand through urban extensions and development adjoining the existing growth area.
- Limited development in the remaining rural area, mostly village infilling.
- Development in open countryside restricted in line with government policy.

Purpose/effects (from source)

Sustainability appraisal criteria

This option is likely to have the following positive effects –

- maximise land use efficiency and encourage sustainable travel within the expanded growth area

- preserve open countryside, including its habitats and species, although to a lesser extent than under option 1
- contribute to the achievement of economic growth through concentrating economic development
- make a positive contribution to town centre development
- reduce deprivation in the most deprived wards, which are located in the existing growth area
- reduce the need to travel and commute outward.

This option is likely to have the following negative effects –

- increase emissions from transport and construction (temporary effect) in the existing growth area
- increase resource consumption (energy, water, land) and waste production
- increase pressure for development of open land adjoining the existing growth area, potentially affecting habitats and species
- may mean further decline of rural economies, services and employment
- do little to help meet the need for housing, services, and facilities outside of growth area
- may increase exclusion and inequalities, and further increase deprivation in terms of access to essential services in the rural area
- cause rural public transport to decline further.

Deliverability criteria

- Concentrating growth would risk the delivery of existing large committed sites in the growth area.
- Growth area villages would have to absorb further significant growth before recently created communities had matured.
- Locations in the A421 corridor are attractive to potential employers and close to labour markets.
- Concentrating development is likely to maximise infrastructure opportunities.

Relevant in a Greater Cambridge context?

Partly:

- No – the sequential development strategy of the adopted Local Plans locates significant growth in a range of different locations within Greater Cambridge, as opposed to being within a limited area or corridor.
- Yes – in terms of concentrations of growth outside of Cambridge within the adopted Local Plans and previous rounds of plan-making, the most significant growth has been allocated to the north and west of Cambridge, at Cambourne, Bourn Airfield, Northstowe and Waterbeach. A possible interpretation of expanding a growth area in a Greater Cambridge context would be to focus growth in this broad area of South Cambridgeshire.

Potential distribution of growth in a Greater Cambridge context Diagrams

Figure 4: B1 - Example growth option diagram

Option 2 – Expanded 'growth area'



[Local Plan 2032 - Planning for the future Issues and Options Paper, 2014](#)

Description

Focus growth to the west and north of Cambridge, expanding development at and in the area of existing and committed new settlements.

One potential interpretation of this principle would be to focus further growth on the A428 corridor to the west of Cambridge, which includes Cambourne and its expansion at Cambourne West, as well as allocated development at Bourn Airfield.

Substantively different to existing options?

Partly:

- No – growth areas outside of Cambridge at new settlements are all on public transport corridors. Focusing growth to the west and north of Cambridge, expanding development at and in the area of existing and committed new settlements, is addressed through Public Transport Corridor option.

- Yes – in relation to the A428 corridor focus, First Conversation options do not focus all growth in a geographically specific (rather than typology-specific) location.

Reasonable?

Considering only an option focusing growth on the corridor to the west of Cambridge.

Reasonable: national policy?

Yes – compatible with NPPF para. 102 on realising opportunities from existing or proposed transport infrastructure.

Reasonable: absolute constraints?

- Capacity: Yes.
 - It is assumed that there is capacity for development close to Cambourne.
 - It is assumed that there may be capacity for development at the villages along the A428 corridor.
- Environmental constraints: Unknown – assume Yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes.
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing or expanding new settlements in South Cambridgeshire is currently viable.
 - As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
- Deliverability: Unknown – assume mixed
 - Deliverability will depend on locations and typologies of development:
 - Delivery assumed to be supported by being close to strategic public transport infrastructure
 - Delivery rates are assumed to be affected by locating a number of developments close to one another.
 - New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation of how much of a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.
 - Developer contributions on individual smaller sites do not generate substantive contributions to support major transport and other infrastructure provision. As such, an option that focused growth towards smaller sites might result in cumulative impacts on the transport network, for which it might be hard to collect sufficient funds to mitigate. Over time this could lead to

an infrastructure deficit that might make such a strategy undeliverable in the long term.

Option C13: All development located in the high-tech growth area (All in Science Vale)

Source

- Plan/Project: South Oxfordshire Local Plan
- Specific document: [South Oxfordshire Local Plan - draft topic paper](#)

Description (from source)

All additional housing in Science Vale (note this option considers distribution of housing only; not employment land).

Purpose/effects (from source)

Pros

- Based on locating housing where it can support growth
- Provides a focus for the delivery of infrastructure and services potentially at a more competitive return
- Supports the aspirations of the Science Vale Area Action Plan

Cons

- Some of the smaller settlements might miss out on some desired growth for local affordable housing for example
- Timescales and funding needed for the infrastructure required to support this level of growth is untested
- Could create housing market saturation in Science Vale by concentrating development in one area
- There is a risk that relying on a few larger sites with high infrastructure requirements would not deliver homes fast enough to maintain our five year land supply

Relevant in a Greater Cambridge context?

- Yes – focuses growth in a geographically specific (rather than typology-specific) location which is not considered through First Conversation options.

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 5: B1 - Example growth option diagram

None available

Description

All growth located within the life sciences cluster area to the south of Cambridge.

Substantively different to existing options?

- Yes – locates all growth in a geographically specific (rather than typology-specific) location which is not considered through First Conversation options.

Reasonable?

Reasonable: National policy?

Yes:

- Integration of housing and jobs is supported by NPPF para. 92.

Reasonable: absolute constraints?

- Capacity: Yes.
 - The area, south of Cambridge is relatively undeveloped with several small settlements located parallel with the M11 - it is assumed that there is some capacity for growth.
- Environmental constraints: Yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.
 - The area is predominantly rural/agricultural and therefore significant development would have an impact on the area's character and environmental qualities. It can however be assumed that some areas will not be limited by absolute environmental constraints.
 - However, the River Granta flows through this area and feeds into the River Cam. Any significant development in the area affecting its flow e.g., with increased run-off or flow rates would potentially have an impact on the River Cam and Cambridge.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes.
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing or expanding new settlements in South Cambridgeshire is currently viable.
 - As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
- Deliverability: Unknown – assume mixed
 - Deliverability will depend on locations and typologies of development:
 - Delivery assumed to be supported by being close to strategic public transport infrastructure
 - Delivery rates are assumed to be affected by locating a number of developments close to one another.
 - New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation of how much of a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.
 - Developer contributions on individual smaller sites do not generate substantive contributions to support major transport and other infrastructure provision. As such, an option that focused growth towards smaller sites might result in cumulative impacts on the transport network, for which it might be hard to collect sufficient funds to mitigate. Over time this could lead to

an infrastructure deficit that might make such a strategy undeliverable in the long term.

Option C18: Locating development in particular settlements where it could help fund projects

Source

- Plan/Project: South Oxfordshire Plan
- Specific document: [Draft Topic Paper – Local Plan Spatial Strategy](#)

Description (from source)

Public money to fund infrastructure is in short supply. Sometimes the only way that big scale improvements or expansions can be paid for is through development. By the community taking housing development, the council and county council can require housebuilders to contribute towards infrastructure projects. These could be, for example, a new road, a new river bridge, or a new or expanded school. The scale of growth to fund such 'big ticket' items is likely to be quite large, but we would like to know if there are any communities which would welcome investigation of this option. Another route for communities to look at enhanced growth to fund a 'big ticket' project is through preparing a neighbourhood plan.

Purpose/effects (from source)

Pros

- Would achieve much needed benefits for some communities
- Fits well with neighbourhood planning where communities weigh up for themselves whether to opt for this

Cons

- May require significant amounts of housing to achieve the benefit sought.

Relevant in a Greater Cambridge context?

- Yes – New settlements are an option under consideration in Greater Cambridge. These could help finance improvements along existing public transport corridors. Specific projects for which this approach is a live issue include East West Rail Central Section, and the Cambridgeshire Autonomous Metro.

Potential distribution of growth in a Greater Cambridge context

Growth focused along key corridors into Cambridge, including:

- At Cambourne where an East West Rail station is proposed; and
- On proposed Cambridgeshire Autonomous Metro routes into Cambridge.

Substantively different to existing options?

- No – Dispersal - new settlements and Public transport corridors were both considered through First Conversation options

Reasonable?

N/A

Option C22: Spokes and hubs

Source

- Plan/Project: Oxfordshire Plan 2050
- Specific document: [Introducing the Oxfordshire Plan 2050](#)

Description (from source)

Continue to focus on Oxford and key corridors into Oxford.

Purpose/effects (from source)

- Concentrates transport along routes that are already at high capacity
- May offer opportunities for funding to enhance strategic corridors
- This would not help 'spread the load' of new development, but would mean improving existing infrastructure, which might be efficient, but much will depend on the potential of existing infrastructure to be improved to take new development

Relevant in a Greater Cambridge context?

- Yes – there are key corridors into Cambridge, which are supported by existing and proposed transport schemes.

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 6: B1 - Example growth option diagram



Description

Growth focused at Cambridge, and along key public transport corridors into Cambridge.

Substantively different to existing options?

- No – this is a hybrid of Densification and Public Transport corridor options.

Reasonable?

N/A

Concept C25: 'String' settlement/ settlement cluster

Source

- Plan/Project: Oxfordshire Plan 2050
- Specific document: [Introducing the Oxfordshire Plan 2050](#)

Description (from source)

Development focused on a number of linked settlements. It could involve new and/or existing/expanded settlements

Purpose/effects (from source)

May or may not be close to existing high-quality transport corridors

Relies on there being suitable broad locations available for this type of development

This may involve promoting development at some existing, currently small, settlements, which may significantly change their character

A number of smaller settlements could collectively, be of sufficient scale to be served by shared infrastructure

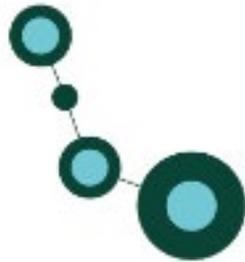
Relevant in a Greater Cambridge context?

- Yes – development would be focused on several linked settlements and could involve new and/or existing/ expanded settlements. There are many settlements varying in size from small villages to larger settlements across Greater Cambridge, where development could be spread.

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 7: B1 - Example growth option diagram



Description

Growth spread across a number of existing and new developments in South Cambridgeshire. Further work required to explore opportunities.

Substantively different to existing options?

Partly:

- No – This option was not a specific option in the First Conversation options but a combination of Dispersal: new settlements, Dispersal: villages, and Public Transport Corridors.
- Yes – Development is spread across a number of existing and new developments, the aggregate of which is sufficient to provide substantial infrastructure including improved transport links between these settlements, reducing their reliance on existing established centres such as Cambridge.

Reasonable?

Reasonable: National policy?

Yes:

- Yes – compatible with NPPF para. 78 in promoting sustainable development in rural areas.

Reasonable: absolute constraints?

- Capacity: Unknown – assume Yes.
 - There is undeveloped land within Greater Cambridge which in theory has capacity for additional new or expanded settlements.
- Environmental constraints: Unknown – assume Yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing or expanding new settlements in South Cambridgeshire is currently viable.

- As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
- Deliverability: Unknown, assume challenging
 - Deliverability is very much dependent on transport costs/ improvements, especially if these need to be implemented in advance of new development. Locating development along or close to existing or proposed transport corridors should support deliverability.
 - New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation whether a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.
 - Delivering shared services and infrastructure across a number of settlements would require coordination between landowners, developers and authorities that is not current practice within the current approach to village development.

Option C26: 'Wheel' settlement cluster

Source

- Plan/Project: Oxfordshire Plan 2050
- Specific document: [Introducing the Oxfordshire Plan 2050](#)

Description (from source)

Focus on Oxford and the existing larger towns and the key corridors into Oxford and between the towns

Purpose/effects (from source)

- This could be a variation on the spoke and hub approach but with the added benefits of stronger links between the towns
- Could take some of the pressure off the corridors into Oxford

Relevant in a Greater Cambridge context?

- Yes – there are a number of substantial existing or planned settlements within Greater Cambridge, beyond the city itself. In theory, the corridors between these settlements and Cambridge, and between the settlements themselves, could become a focus for further growth and infrastructure investment.

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 8: B1 - Example growth option diagram

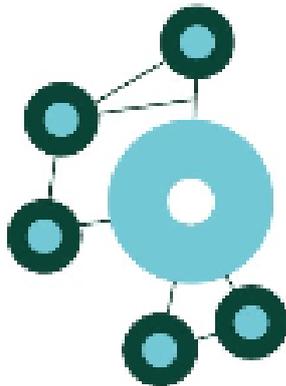


Figure 9: B1 - Likely distribution of growth in Greater Cambridge context

Description

Growth focused at Cambridge, the existing and planned largest settlements outside of Cambridge, and the key corridors into Cambridge and between the largest settlements. New growth locations potentially to the south and/or east of Cambridge where there is currently less committed housing growth in comparison with corridors to the west and north.

Substantively different to existing options?

Partly:

- No – Focus on Cambridge and corridors into Cambridge is addressed through all Densification, Edge of Cambridge options, and Public Transport Corridors.
- Yes – Focus on corridors between existing and planned largest settlements outside Cambridge is not included in First Conversation options.

Reasonable?

Reasonable: National policy?

Yes - compatible with NPPF para. 102 on realising opportunities from existing or proposed transport infrastructure.

Reasonable: absolute constraints?

- Capacity: Unknown – assume Yes.
 - Capacity will depend on the existing transport capacity between new and existing settlements; the potential for each settlement to expand sustainably.
- Environmental constraints: Unknown – assume Yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown.
 - Capacity to expand new and existing settlements may limit capacity and hence ability to cover cost of improved transport links
- Deliverability: Unknown, assume challenging
 - Deliverability is very much dependent on transport costs/ improvements, especially if these need to be implemented in advance of new development.

Ideas from other sources

Concept D01: Garden City, growing an existing city

Source

- Plan/Project: Urbed – 2014 Wolfson Economics Prize submission
- Specific document: [Wolfson Economics Prize 2014 – Finalists' Submissions: Compendium of Non-Technical Summaries](#)

Description (from source)

- major urban extensions in a 'snowflake' pattern. Extensions lie within a zone 10km from the city centre, which is a 20 minute tram ride, within the green belt.
- Doubles population of existing city of 200,000 to 400,000, through extensions of 50,000 people each.
- tram stops within 20 minutes of the city centre, neighbourhoods that are within 10 minutes walk of these tram stops, each of which supports a secondary school and its feeder primary schools, and urban extensions that have sufficient scale to support a district centre and employment uses.
- for every hectare of land developed another will be given back to the city as accessible public space

Larger-scale/longer term idea

Purpose/effects (from source)

- High quality, larger housing, with higher environmental standards, in greater quantities and with far greater spending on infrastructure
- Walkable/prioritises public transport
- accessible to public space, forests, lakes and country parks
- allows for incremental development
- investment in new transport infrastructure and city centre facilities to benefit the existing and new residents

Relevant in a Greater Cambridge context?

Cambridge district includes a population of around 137,000. While this is lower than the 200,000 referenced in the Urbed proposal, their use of an Oxford case study (population ~150,000 suggests) that there may be at least some potential to explore the Uxcester concept in a Greater Cambridge context.

Potential distribution of growth in a Greater Cambridge context Diagrams

Figure 10: B1 - Example growth option diagram

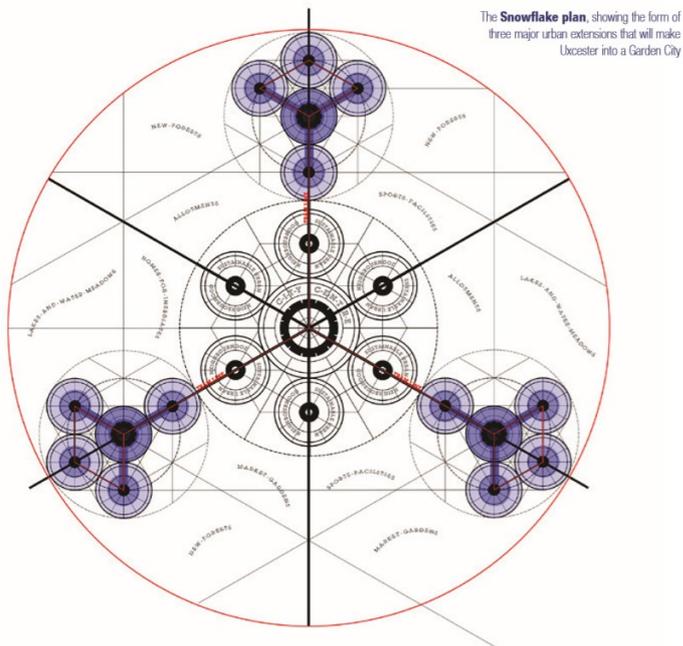


Figure 11: B1 - Likely distribution of growth in Greater Cambridge context

Description

- Plan period: Growth focused at edge of Cambridge and along public transport corridors.
- Built out: Growth focused at Cambridge's urban extensions on a very large scale, focused on key corridors into Cambridge.

Substantively different to existing options?

Plan period: No -

- Focus on Cambridge and public corridors into Cambridge is addressed through all First Conversation options other than Dispersal.
- Edge of Cambridge option addresses the idea of urban extensions.

Built out: Partly –

- No – the pattern of growth envisaged by this Garden City concept is the same as that addressed through the Public Transport Corridor First Conversation option.
- Yes – urban extensions of a scale to double the population of Cambridge were not addressed through First Conversation options.

Reasonable?

Reasonable: National policy?

Yes:

- Yes – NPPF para. 72 supports the idea of meeting the need for new homes via larger scale development.

Reasonable: absolute constraints?

- Capacity: Unknown
 - There is undeveloped land in South Cambridgeshire which could theoretically accommodate significant additional growth. It is unknown whether there would be sufficient land available to support a doubling of the population of Cambridge.
- Environmental constraints: Unknown – assume challenging
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints. It is likely that seeking to double the population of Cambridge would be impacted by constraints such as water resource capacity.

Reasonable: viable and deliverable?

- Viability: Unknown – assume no
 - It is considered that development on this scale would not be viable without a change to the current development delivery model in the Greater Cambridge area.
- Deliverability: No
 - It is considered that development on this scale would not be viable without a change to the current development delivery model in the Greater Cambridge area.
 - Were such an approach to development to be deliverable in principle, of how much development could take place within the next 20 years would be important as part of considering whether to allocate it in the new Local Plan.

Concept D02: New living campus clusters

Source

- Plan/Project: The Cambridge to Oxford Connection: Ideas Competition
- Specific document: [Mae: Urcadia](#)

Description (from source)

- Clusters of communities within the New Living Campus, each with a range of homes, public spaces and other facilities, of a walkable scale, giving an average area of around 1km² or 100 hectares, allowing a cluster to contain between 5,000 and 25,000 homes depending on the location, density and local demand.
- City Campus model that can house 250,000 people in 12 clusters with a range of densities to accommodate a variety of typologies from self-build terrace to multi-level apartment block.
- Each cluster of the New Living Campus could develop a specialist faculty to encourage a particular field of innovation, such as 'Construction Material Innovation' or 'Biotechnology in Food Production'.

Larger-scale/longer term idea

Purpose/effects (from source)

- Decentralised, polycentric settlement would allow each centre to distinguish itself from others in both urban typology and technological specialism.
- Each centre could accommodate a variety of densities and types of housing
- Different centres could support innovation by clustering different specialisms
- Creates places with enduring social and community value.
- Connected to transport infrastructure
- Walkable scale
- Encourages the landscape to flow through and around the whole.
- Flexible model (scalable): over time, individual clusters are complete, allowing green and agricultural landscape to flow between, and additional clusters to be completed to suit demand and location.

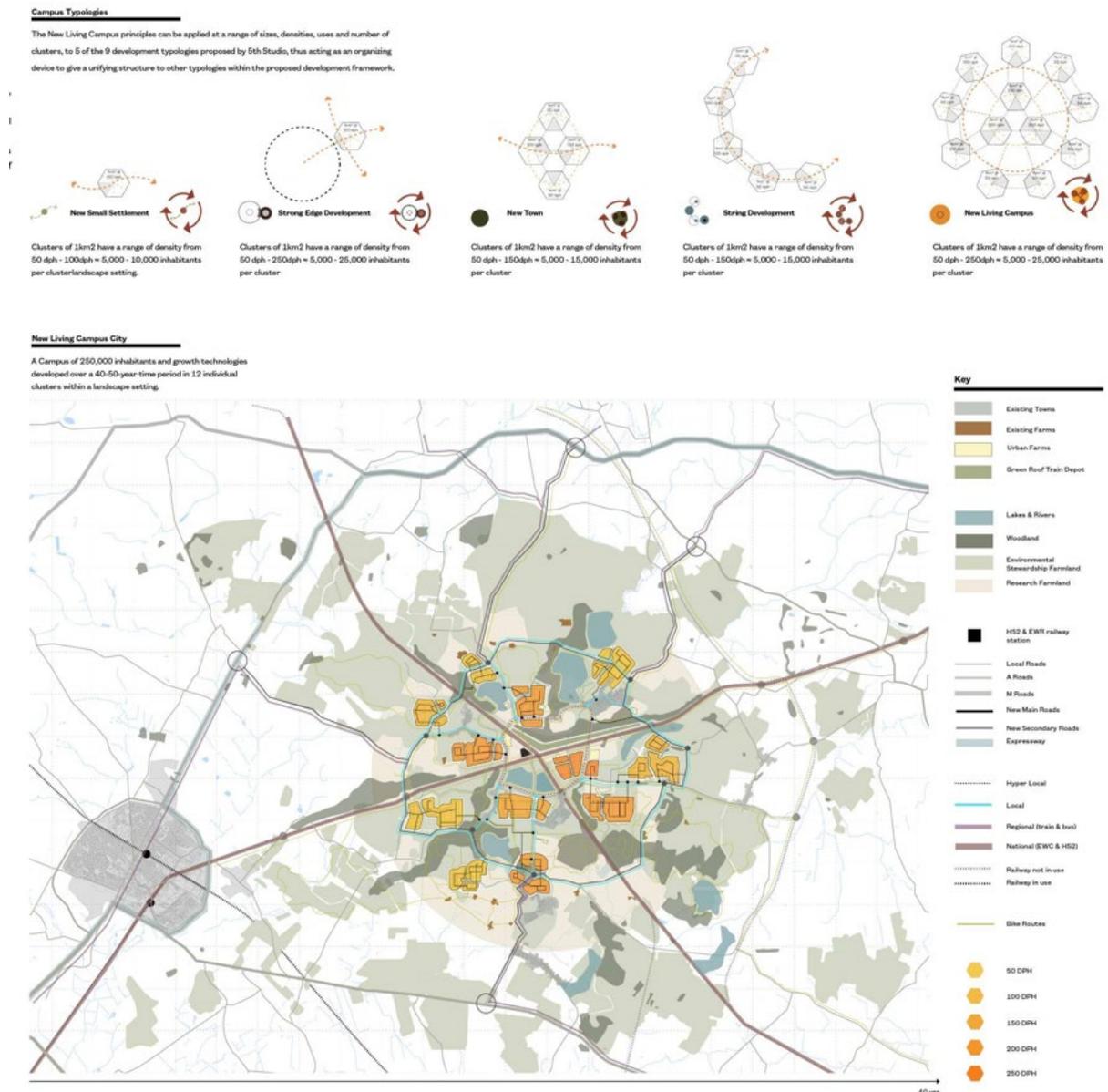
Relevant in a Greater Cambridge context?

- Yes – There is undeveloped land close to existing or proposed

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 12: B1 - Example growth option diagram



Description

Unclear. To an extent a typology to be applied in a range of contexts, rather than a spatial option.

Plan period: First phases of one or more new high-density new settlements supported by strategic transport infrastructure connecting to Cambridge.

Built out: cluster of high-density new settlements supported by strategic transport infrastructure connecting to Cambridge; opportunity for additional high density new settlements within the same area.

Substantively different to existing options?

Partly:

- Yes – Clusters of connected new settlements within a relatively small area were not explicitly considered within the First Conversation options.
- No – New settlements were considered under the First Conversation Dispersal: New settlements option
- No – More a typology to be applied in a range of contexts, rather than a spatial option.

Reasonable?

N/A

Further consideration may be given to this concept in parallel to the strategic options testing, to inform later stages of the plan process.

Concept D03: Town cluster; village cluster; village (VeloCity)

Source

- Plan/Project: The Cambridge to Oxford Connection: Ideas Competition
- Specific document: [Tibbalds Planning and Urban Design: Velocity](#)

Description (from source)

Town cluster:

- Existing villages within a 7 mile catchment of local centres and transport nodes such as the new stations on the East West Rail link can be grouped into 3-4 clusters of 4-6 villages . 7 miles is a comfortable distance for an adult on a daily commute to the transport interchange.

- This model can be repeated across the corridor wherever local centres/ transport infrastructure are located.

Village clusters

- Within 1-2miles of each other
- Roads to the main routes are retained. Linking roads between villages are replaced with 'Slow Lane' cycle routes through the shared green heart of fields between the villages. The car is also removed from within the villages to create a cycle/pedestrianised centre.
- Each village provides a specific service that links the cluster together such as a local produce market, schools, workplace, cultural facilities or waste recycling centres.
- 'Big Back Garden' in the centre of each village cluster, combining active recreation with productive landscape and areas of 'untouched' landscape

Villages

- New development is focused around existing villages rather than creating new ones
- Existing field patterns create a framework of 0.5ha plots where a mix of new high density housing, community facilities and infrastructure are located around the edges of a village, retaining its heart: the green, the church, the manor, the farm etc.
- 20 'housing fields' have the potential to provide 600-1000 new homes per village, which across the clusters could create 15,500 new homes around each interchange town.

Purpose/effects (from source)

- Removes dependence on car - cycling as the mainstream form of movement
- Village clusters can be 'self-sufficient' on a daily/weekly basis along with links to the Fast Track connecting to Cambridge and Oxford
- Builds on and reinvigorates villages' unique identities and characters
- 'Big back garden' provides an alternative healthy and socially connecting lifestyle that reinforces the attraction of living in the country

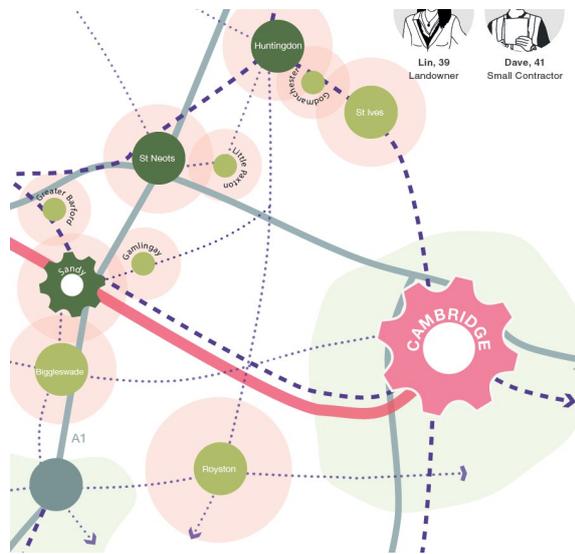
Relevant in a Greater Cambridge context?

Partly:

- Yes – there are a number of villages within South Cambridgeshire within 7 miles of transport nodes varying in size, which in theory could be clustered and expanded as village clusters.
- No – the arrangement of villages within the area of transport nodes does not in all instances lend itself to groupings within 1-2 miles of each other in an arrangement enabling shared use of a central green space.

Potential distribution of growth in a Greater Cambridge context Diagrams

Figure 13: B1 - Example growth option diagram



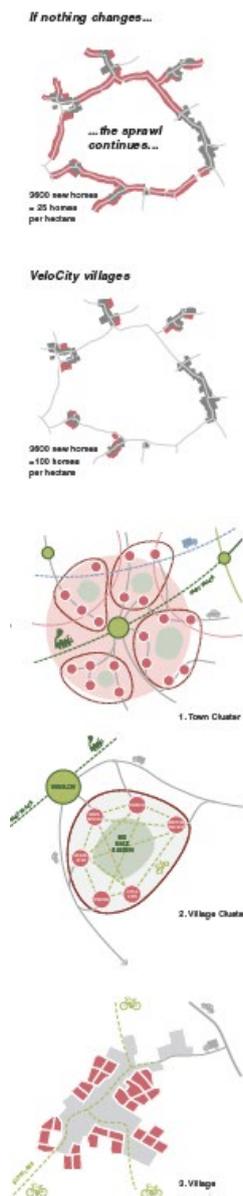


Figure 14: B1 - Likely distribution of growth in Greater Cambridge context

Growth spread across a number of villages with good access to Cambourne as the proposed location for a new East West Rail station within South Cambridgeshire.

Substantively different to existing options?

Partly:

- No – Dispersal: Villages considers distributing growth to villages, and Public Transport Corridors located growth along transport corridors, including at villages.
- Yes – Notwithstanding the above, no single First Conversation option considered distributing growth to only those villages within an area around transport nodes.
- Yes – no First Conversation option envisaged closing highways to vehicular traffic.

Reasonable?

N/A

Further consideration may be given to this concept in parallel to the strategic options testing, to inform later stages of the plan process.

Concept D06: Edge Intensification**Source**

- Plan/Project: Plan/Project: 5th Studio CamMKOx typologies
- Specific document: [5th Studio CamMKOx typologies: Edge Intensification](#)

Description (from source)

- Intensification of existing suburbs
- Urban extensions to new settlements

Purpose/effects (from source)

- Intensification of existing suburbs may require land assembly and therefore affect timely deliverability to housing sites.
- Urban extensions in new settlements may lack the capacity to expand essential social infrastructure such as schools and GP surgeries.
- Develop dispersed across a number of settlements may not provide satisfactory improvements to infrastructure
- Intensification of existing small sites is unlikely to generate infrastructure needs alone, so are unlikely to significantly contribute to improvements to infrastructure
- The character of a smaller settlements might be adversely affected by new development
- Expanding some smaller settlements can support local shops, pubs and bus services
- Smaller sites may improve deliverability rates due to competing developers
- Dispersal is unlikely to meet the employment land needs of the county - larger businesses often need large sites and there are advantages to clustering

Relevant in a Greater Cambridge context?

- Yes – there are lower density suburbs of Cambridge which could in theory be intensified.

Potential distribution of growth in a Greater Cambridge context

Intensification of Cambridge suburbs where social housing can no longer achieve environmental ratings A, B or C.

Substantively different to existing options?

- No – focus on Intensification of existing urban areas and development on the Edge of Cambridge is addressed through First Conversation options.

Reasonable?

N/A

Further consideration may be given to this concept in parallel to the strategic options testing, to inform later stages of the plan process.

Concept D11: String City

Source

- Plan/Project: 5th Studio CamMKOx typologies
- Specific document: [5th Studio CamMKOx typologies: String City](#)

Description (from source)

- This typology assumes aggregated smaller settlements can create a place of sufficient scale to be thought of as a city, rather than connecting to, and remaining subservient to, an existing larger-scale “central place”.
- The component parts of this typology might vary in scale and in character and might include existing places as well as new ones. Their totality would be defined by the high degree of connectivity between them. This would most likely be achieved through a new, and in the case of existing towns or villages retro-fitted, high quality public transport network.
- Existing and new places would be linked together by a public transport loop, and via a network of high quality walking and cycling routes.
- Existing new places located around a protected and accessible green heart, aggregating each place’s open space requirement
- one of the settlements should develop higher order functions to serve the new city’s population as well as a wider catchment

Larger-scale/longer term idea

Purpose/effects (from source)

Benefits

- The new agglomeration of smaller settlements would have a large degree of self-containment, its own higher order services and a greater degree of national connectivity.
- the entire population would be within a short walk of the “Green Heart”.
- opportunities for new sport, leisure and productive landscapes adjoining the new neighbourhoods
- could help preserves sensitive landscapes

Challenges

- different settlements within the area would each need a distinctive and complementary economic role
- need to be very well interconnected by public transport if they are to function as a ring city rather than as an unrelated cluster of expanded towns and villages

Relevant in a Greater Cambridge context?

Partly:

- Yes – development would be focused on several linked settlements and could involve new and/or existing/ expanded settlements. There are many settlements varying in size from small villages to larger settlements across Greater Cambridge, where development could be spread. The development would have less dependence on Cambridge.

- No – the String City concept - that aggregated smaller settlements can create a place of sufficient scale to be thought of as a city, rather than connecting to, and remaining subservient to, an existing larger-scale “central place” – would seem unrealistic in the context of development within the Greater Cambridge sub-region, in that any new agglomeration of development would be likely to be subservient to Cambridge for the foreseeable future.

Potential distribution of growth in a Greater Cambridge context Diagrams

Figure 15: B1 - Example growth option diagram

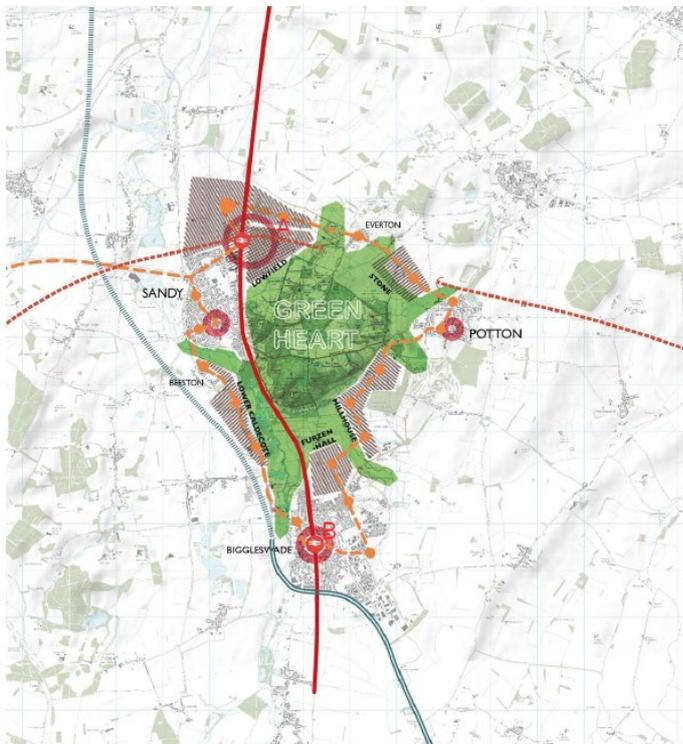


Figure 16: B1 - Likely distribution of growth in Greater Cambridge context

Description

- Plan period: Growth clustered across a small number of existing and first phases of new developments in South Cambridgeshire.
- Built out: Growth clustered across a small number of existing and new towns in South Cambridgeshire

Substantively different to existing options?

Plan period - Partly:

- No – This option was not a specific option in the First Conversation options but a combination of Dispersal: new settlements, Dispersal: villages, and Public Transport Corridors.
- Yes – Development is spread across a number of existing and new developments, the aggregate of which is sufficient to provide substantial infrastructure including improved transport links between these settlements, reducing their reliance on existing established centres such as Cambridge.

Built out – yes

- Growing a number of settlements to the cumulative scale of a city was not addressed through First Conversation options.

Reasonable?

N/A

Further consideration may be given to this concept in parallel to the strategic options testing, to inform later stages of the plan process.

Option D13: Minimum growth

Source

- Plan/Project: Cambridge Futures 2000
- Specific document: [Cambridge Futures 2000 summary](#)

Description (from source)

Minimum Growth would preserve the City of Cambridge and surrounding South Cambridgeshire with the minimum change. All new dwellings and business floorspace would be allocated to East Cambridgeshire and Huntingdonshire.

Purpose/effects (from source)

- Substantial increase in the cost of living and production in the City means Cambridge would cease to develop as a world-class centre of high-tech development.
- Considerable increase in congestion on the access roads would continue to erode the quality of life in the city.

Relevant in a Greater Cambridge context?

- Yes – Given the already planned and implemented growth in Greater Cambridge, this option highlights the consequences of only providing a minimum quantum of growth.

Potential distribution of growth in a Greater Cambridge context

Description

Very limited growth within Greater Cambridge; growth focused beyond Greater Cambridge.

Substantively different to existing options?

- Yes – Absolute minimum growth was not explored as a First Conversation option.

(E) Reasonable?

Reasonable: National policy?

Partly:

- No – a strategy that focused growth beyond the boundaries of Greater Cambridge would be incompatible with NPPF para. 35 requiring plans to be Positively prepared – providing a strategy which, as a minimum, seeks to meet the area’s objectively assessed needs.
- Yes – a strategy that focused growth within Greater Cambridge but was based on agreement with neighbouring authorities about their taking unmet needs beyond the boundaries of Greater Cambridge could be compatible with national policy.

Reasonable: absolute constraints?

- Capacity: Unknown – assume Yes.
 - It is assumed that there is some capacity for growth beyond Greater Cambridge, although this is not known for certain.
- Environmental constraints: Unknown – assume Yes.
 - The locations of and typologies for growth passed to neighbouring districts cannot be assumed, as this would be a matter for each relevant Local Planning Authority. As such, it is not possible to assess whether this option would be limited by environmental constraints. However, given the land area included in neighbouring districts, it seems reasonable to assume that there is land available for some growth which is not limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown
 - The locations of and typologies for growth passed to neighbouring districts cannot be assumed, as this would be a matter for each relevant Local Planning Authority. As such, it is not possible to assess even at a high level whether this option would be viable.
- Deliverability: Unknown, assume challenging
 - As noted above, it is uncertain how likely it is that sufficient jobs would move into the market towns beyond Greater Cambridge to make dispersal work on a large scale:
 - It would be high risk to attempt to build many houses in the hope that jobs would follow.
 - If jobs did not arise on a dispersed strategy, commuting problems into cities will intensify, and a growing sense that the towns are merely ‘dormitories’ will develop.
 - Agreeing passing on growth to neighbouring districts could be a challenging political and legal process, including but not limited to the following issues:

- Any dispersal of growth beyond Cambridge and South Cambridgeshire would need agreement under the Duty to Cooperate with neighbouring bodies.
- Without a sub-regional strategic statutory plan, the appropriateness of the Greater Cambridge Local Plan might be reliant on other plan processes that are not aligned in timetable.
- Without a sub-regional strategic statutory plan, it is challenging to see how Sustainability Appraisal for the Greater Cambridge Local Plan could appropriately test options extending beyond the Greater Cambridge geography

Drawing on the above, it is not considered reasonable to test this option further, as it is not compliant with national policy, and goes beyond the scope of what reasonable options are as set out in SEA Regulations.

Concept D18: High Capacity Telecommunications

Source

- Plan/Project: Staff idea, drawing on Cambridge Futures
- Specific document: N/A

Description (officer judgement)

- Typology based upon implementation of high capacity telecommunication infrastructure in Greater Cambridge, connected via a multimedia super corridor with other high-growth areas including:
 - Cambridge/Milton Keynes/Oxford Arc,
 - Cambridge-Norwich Tech Corridor; and
 - London-Stansted-Cambridge Corridor
- Full-fibre optics (to door) and 5G telecommunication network, providing instant business and personal communication for work, education, retail and other services.
- Connectivity (ultra/hyper speed as in 100 Mb - 1Gb) will be a key driver in housing market and almost all business sectors - notably also in advanced manufacturing which may accelerate in the late 2020s and early 2030s.

Purpose/effects (officer judgement)

Pros

- Reduced need for people who work in the Greater Cambridge area to physically live in the Greater Cambridge area
- Reduction in demand for commuting, with associated reduction in carbon emissions.
- Reduced need for employment floorspace and residential dwellings.
- Supports knowledge-based industries already located in Greater Cambridge and beyond.

Cons

- Many industries still require people to be physically located in the Greater Cambridge area. University education, tourism, retail and leisure
- Delivery of high-capacity electronic/digital telecommunications infrastructure including 5G and ultra/hyper speed fibre-optics will be rolled out over a period of time and will not cover all dwellings unless specifically provided in both new and existing dwellings.
- Benefits of this infrastructure can only be achieved if available within and beyond Greater Cambridge.
- For long-term working from home, many employees will need to live in larger dwellings to provide a dedicated office area away to separate work from home life.
- Long-term working from home will alter the way people socialise and interact outside their work life and this will require changes to our town centres. Socialising at work, for many is an important part of their social interaction.

- Long-term working from home can impede the development of ideas that would otherwise be generated from the co-location of different scientific knowledge-based industries.
- Need to consider the social impact this new way of working will affect people and how this cannot exacerbate feelings of isolation or loss of community well-being.

Relevant in a Greater Cambridge context?

- Yes – relevant to any area.

Potential distribution of growth in a Greater Cambridge context

Description

Housing and employment growth requirements reduced related to greater home working. Physical distribution of growth unclear.

Substantively different to existing options?

Partly:

- Yes - Focus on supporting significantly increased working from home across Greater Cambridge was not included in First Conversation options.
- No - Physical distribution of growth unclear.

Reasonable?

N/A

Concept D20: Copenhagen Finger Plan

Source

- Plan/Project: Centre for Public Impact
- Specific document: [Land use and transport in Denmark](#)

Description (from source)

- Direct urban housing and business developments alongside train lines and roads, separated by green areas for recreation. These urbanised areas form the fingers, while the city centre could be the palm of the hand.

Purpose/effects (from source)

- Prevent urban sprawl, while also avoiding overcrowded cityscapes
- The station proximity principle allows for new housing, businesses, and public services to be erected only close to train stations
- The green wedge principle works to preserve the green spaces between these urban settlements.

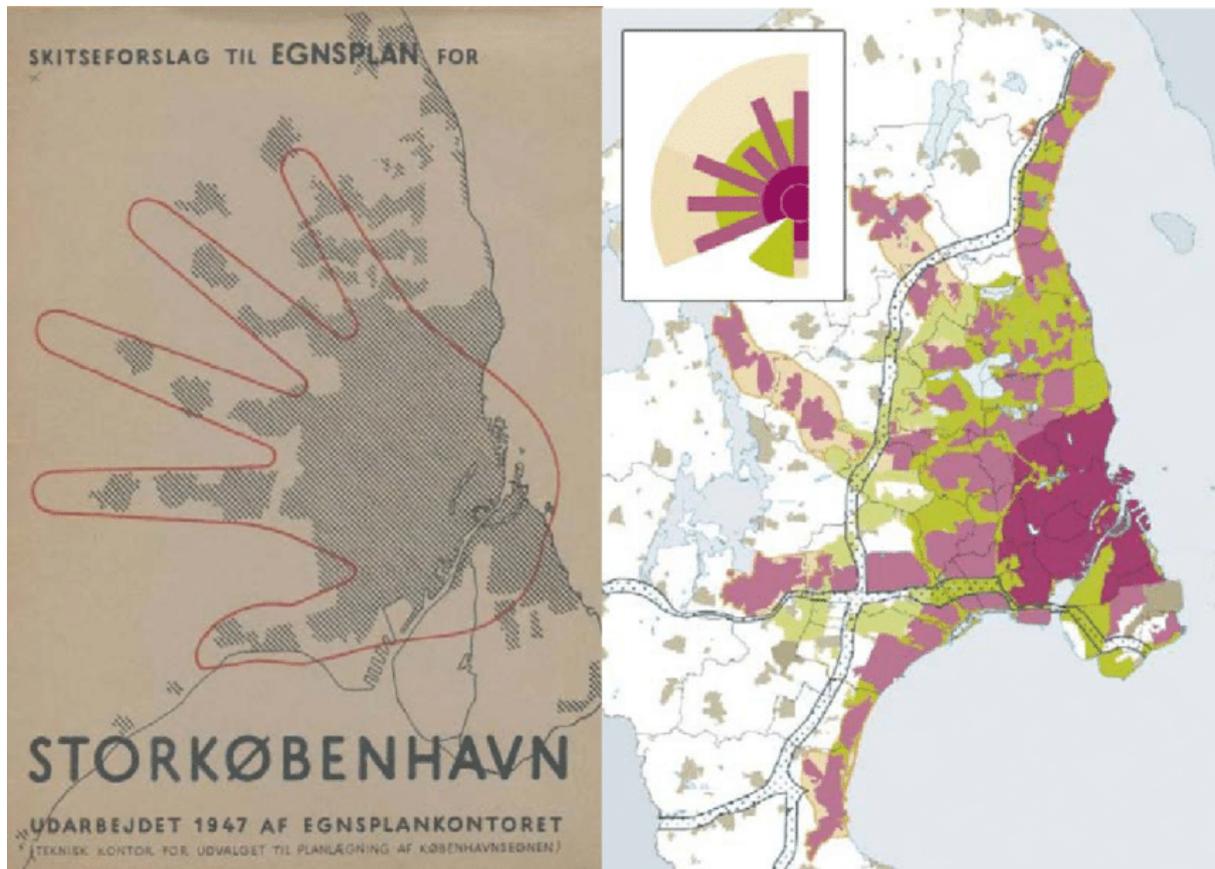
Relevant in a Greater Cambridge context?

- Yes – There are a number of recently improved railway stations that may allow for some housing growth, located in small villages. A new railway station proposed for Cambourne as part of the East/West rail link could provide a significant opportunity.
- No – The existing railway stations within Cambridge do not allow for further expansion in the way described above.

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 17: B1 - Example growth option diagram



https://www.researchgate.net/figure/Copenhagen-Five-Finger-Plan-left-and2007-version-Fingers-Plan-right-Consummated_fig2_294139457

Description

Growth focused along public transport corridors extending from Cambridge, providing continuous broad corridors of development separated by green wedges.

Substantively different to existing options?

- No – This is a logical ultimate extension of the Public transport corridors option.

Reasonable?

N/A

Concept D21: Net Zero Growth

Source

- Plan/Project: Staff idea, drawing on materials and discussion at Town & Country Planning Association Spring Conference 2020 – Climate Change – game over?
- Specific document: [Town & Country Planning Association Spring Conference 2020 – Climate Change – game over - materials](#)

Description (officer judgement)

- Locate growth only in environmentally sustainable locations. Ignore any conflicting policy designations such as Green Belt or heritage.
- Draws on the climate emergency declared at national and local levels, and the related point that the Climate Change Act 2008 as amended in 2019 has greater weight than national planning policy.

Purpose/effects (officer judgement)

- Mitigates climate change, supporting zero carbon ambitions, including by limiting the need to travel, and promoting walking, cycling and public transport use.
- New development is located in areas at least risk of flooding, and if in areas of flood risk, it is safe for its lifetime.

Relevant in a Greater Cambridge context?

- Yes – there is undeveloped land within Greater Cambridge in highly sustainable locations avoiding areas of flooding.

Potential distribution of growth in a Greater Cambridge context

Description

Growth located in Cambridge urban area, new settlements, and along transport corridors. No small sites.

Substantively different to existing options?

- No – This option is a combination of several specific options in the First Conversation including Densification of existing urban areas; Edge of Cambridge – on and outside the Green Belt and Public transport corridors.

Reasonable?

N/A

Concept D22: Spatial Urbanism approach

Source

- Plan/Project: Internal staff idea
- Specific document: N/A

Description (from source)

- Centres and nodes first - focussing new development at existing centres/interchanges and prioritising land and optimising density within 400m and 800m walking distances. Areas and settlements with railway stations land within 1000m/5minute cycle ride should be prioritised for development. Guided bus stops are a form of interchange and could also form part of this.
- Compact growth/intensification in rural locations that fall within a theoretical 5 mile/30-minute cycle ride of Cambridge, especially settlements with railway stations and Rapid Transit stops such as Cambridgeshire Guided Busway. Apply the above compact criteria of optimising land within 400m/800m of centres (this could provide the theoretical settlement boundary, refined through other constraints such as ecology). Interestingly applying a 30 minute 'golden' cycling distance this includes the settlements of:

- Intensification/edge expansion of settlements served by East-West Rail, releasing and prioritising land within 1000m/5minute cycle ride of new railway station.
- Any potential new compact settlement located on East-West Rail/existing trainline – compact form, with shape more-or-less concentric, new settlement extent and radius from centre dictated by 5-10minute cycle ride

Purpose/effects (from source)

- reinforce walkable neighbourhoods/active travel modes
- building at sufficient densities to create/sustain demand for services and amenities

Relevant in a Greater Cambridge context?

- Yes – There are a number of recently improved railway stations that may allow for some housing growth, located in small villages. A new railway station proposed for Cambourne as part of the East/West rail link could provide a significant opportunity.

Potential distribution of growth in a Greater Cambridge context

Diagrams

Figure 18: B1 - Example growth option diagram

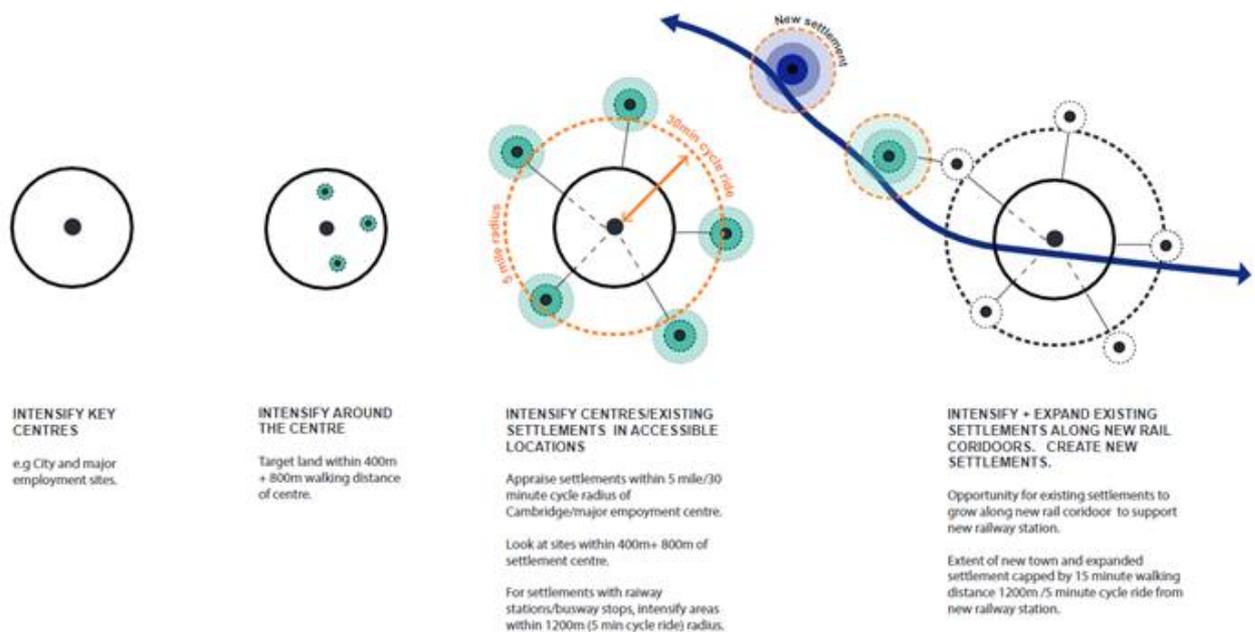


Figure 19: B1 - Likely distribution of growth in Greater Cambridge context

Description

- Growth focused at locations at/close to existing centres and transport interchanges, including at the larger settlements and villages with train stations.
- Compact growth/intensification in rural locations that fall within a theoretical 5 mile/30-minute cycle ride of Cambridge

Substantively different to existing options?

- No – This option is a combination of several options in the First Conversation including Densification of existing urban areas; Dispersal - new settlements and villages, and Public transport corridors.

Reasonable?

N/A

Principle D24: Nature first**Source**

- Plan/Project: Nature first
- Specific document: Officer idea

Description (from source)

Shape a spatial strategy based upon first considering the best opportunities for habitats and wildlife.

Purpose/effects (from source)

- Enhance existing and support provision of new habitats
- Mitigate and adapt to climate change
- Mitigate flood risk

Relevant in a Greater Cambridge context?

- Yes – Both councils have declared a biodiversity emergency and this nature-first approach would be a method for embedding biodiversity principles into the Local Plan.

Potential distribution of growth in a Greater Cambridge context

Unclear. This idea requires further exploration to understand its impact on the potential distribution of development.

Substantively different to existing options?

- Yes – as it reframes development as something that should focus on nature first.

Reasonable?

Reasonable: National policy?

Partly

- Yes – supports NPPF para. 8 an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Reasonable: absolute constraints?

- Capacity: Unknown
 - Further consideration required to understand implications for growth locations and capacity.
- Environmental constraints: Yes
 - This option enhances nature and embeds environmental improvement as the central principle of the Local Plan.

Reasonable: viable and deliverable?

- Viability: Unknown
 - Once a nature first strategy had been defined, consideration would need to be given to the availability and viability for development that aligned with such a strategy.
- Deliverability: Unknown
 - Once a nature first strategy had been defined, consideration would need to be given to the availability of land for development that aligned with such a strategy, and beyond that its deliverability.
 - Beyond setting a development strategy informed by a nature first approach, funding would be needed to deliver the habitat improvements assumed to be incorporated into this strategy.

See Annex E. Further consideration of reasonable additional options for further consideration of this option.

Ideas proposed in responses to First Conversation consultation

Principle E02: Housing in close proximity to employment/innovation centres

Source

- First Conversation consultation response Q42

Description (from source)

Provide residential development in locations to support the growth of the employment sector. The location of employment areas such as the Innovation Corridor are generally in rural areas. As such there is a limited number of dwellings which could serve employees of such institutes.

Purpose/effects (from source)

Skilled workers will continue to be attracted to key employment locations institutions.

Support the reduction of journeys to and from employment sites by motor vehicle, given the opportunities to cycle or walk.

Relevant in a Greater Cambridge context?

Partly:

- Yes – relevant in any spatial context.
- No – traditional notion of employment centres may be changing complexion. Especially true of knowledge economy work that Greater Cambridge seeks to attract, where flexible working practices are becoming more widespread and this has been accelerated by the Covid-19 pandemic.

Potential distribution of growth in a Greater Cambridge context

Development distribution that integrates housing and employment uses could include:

- North East Cambridge, where major employment sites such as the Cambridge Science Park and Cambridge business park are isolated from housing and thereby generate significant external trips.
- Focus growth to the south of Cambridge close to research parks within the biotech cluster.
- Growth focused in areas close to existing infrastructure and services, such as within Cambridge
- New housing growth focused in sufficient concentrations so as to generate demand for economic uses and community facilities and services, such as at new settlements.

Substantively different to existing options?

Partly:

- Yes – Focusing growth to the south of Cambridge close to research parks within the biotech cluster is not addressed in First Conversation options
- No – Locating growth at North East Cambridge, close to existing infrastructure and services, and in sufficient concentrations so as to generate demand for economic uses and community facilities and services, is addressed through First Conversation options.

Reasonable?

Considering only an option focusing growth to the south of Cambridge.

Reasonable: National policy?

Yes:

- Integration of housing and jobs is supported by NPPF para. 92.

Reasonable: absolute constraints?

- Capacity: Yes.
 - The area, south of Cambridge is relatively undeveloped with several small settlements located parallel with the M11 - it is assumed that there is some capacity for growth.
- Environmental constraints: Yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.
 - The area is predominantly rural/agricultural and therefore significant development would have an impact on the area's character and environmental qualities. It can however be assumed that some areas will not be limited by absolute environmental constraints.
 - However, the River Granta flows through this area and feeds into the River Cam. Any significant development in the area affecting its flow e.g., with increased run-off or flow rates would potentially have an impact on the River Cam and Cambridge.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes.
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing or expanding new settlements in South Cambridgeshire is currently viable.
 - As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
- Deliverability: Unknown – assume mixed
 - Deliverability will depend on locations and typologies of development:
 - Delivery assumed to be supported by being close to strategic public transport infrastructure
 - Delivery rates are assumed to be affected by locating a number of developments close to one another.
 - New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation of how much of a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.
 - Developer contributions on individual smaller sites do not generate substantive contributions to support major transport and other infrastructure provision. As such, an option that

focused growth towards smaller sites might result in cumulative impacts on the transport network, for which it might be hard to collect sufficient funds to mitigate. Over time this could lead to an infrastructure deficit that might make such a strategy undeliverable in the long term.

Principle E03: Tied cottages /key worker housing

Source

- First Conversation consultation response Q42

Description (from source)

Employers provide housing in close proximity to place of employment to reduce the need to travel.

Purpose/effects (from source)

- Tied cottages /key worker housing

Relevant in a Greater Cambridge context?

Partly:

- Yes – relevant in any spatial context
- No – the Local Authority can only control social/affordable housing tethering

Potential distribution of growth in a Greater Cambridge context

Housing for local workers is something desirable, but the spatial distribution of this is difficult to discern. Key worker employment sites would need to be defined and identified. If housing development is occurring in places that is not close to the identified key worker employment sites, then the affordable key worker housing would need to be provided off site and this could undermine other ambitions for balanced communities to be delivered with a range of tenures at new sites.

Substantively different to existing options?

- Yes – this is an approach that seeks to locate housing near key worker employment sites.

Reasonable?

Partly

No

- No – a strategy based only on key worker housing may fail to meet Greater Cambridge's minimum growth requirement and therefore would be incompatible with NPPF para. 35 requiring plans to be Positively prepared – providing a strategy which, as a minimum, seeks to meet the area's objectively assessed needs.

Yes

- Housing developments should consider the needs for local workers to help fulfil the Greater Cambridge Housing Strategy 2019-2023.

Reasonable: absolute constraints?

- Capacity: Yes.
 - Capacity to absorb only tethered housing cottages at existing key worker employment sites may need to be delivered at higher densities.
 - Lack of comprehensive planning may affect the area's ability to grow over the long-term in a sustainable form.
- Environmental constraints: Yes.
 - It is assumed that tethered housing cottages would have some absolute environmental constraints and would need to be delivered at higher densities to reduce environmental impact.

Reasonable: viable and deliverable?

- Viability: unsure.
 - Capacity to support tethered housing in social/affordable housing schemes is possible, but a strategy based solely on this is unlikely to be viable.
- Deliverability: unsure
 - This is not a spatial option per se, but should be considered in draft housing policy.

Option E05: The Gruene Finger

Source

- [gruenefinger](#)
- First Conversation consultation response Q42

Description (from source)

The towns grow out into the countryside from existing settlements but always with green space secured alongside and decent cycle paths, so you can cycle across town over grass and through trees; a good example is Osnabrück.

Purpose/effects (from source)

The green fingers:

- Help manage the urban climate
- serve as water retention areas
- provide carbon sinks
- provide
- local recreation areas
- support biodiversity

Relevant in a Greater Cambridge context?

Cambridge includes a population spread between Cambridge and a series of towns surrounded by countryside in Greater Cambridge context. This could be a way to explore growth while increasing access to green space introducing active travel corridors and pushing gentle density that can respond to the councils' climate emergency ambitions.

Potential distribution of growth in a Greater Cambridge context

Growth focused on 'gruene fingers' at Cambridge's urban extensions will be on along axes or corridors that extend into green belt and countryside

Substantively different to existing options?

- No – Edge of Cambridge option addresses the idea of urban extensions.
- No – Focus on corridors into Cambridge is addressed through all the Public Transport Corridors First Conversation option.

Reasonable?

N/A

Option E08: A428 Corridor

Source

- First Conversation consultation response Q42

Description (from source)

The A428 corridor running due west of Cambridge to Cambourne and St Neots presents a broad transport corridor that is due to receive substantial investment in relation to East West Rail (including new station at Cambourne) and the Cambridge Automated Metro. Both of these transport interventions will provide a good choice of sustainable transport modes within this growth corridor and are due to be constructed before 2030.

Purpose/effects (from source)

Provides a good choice of sustainable transport modes.

Relevant in a Greater Cambridge context?

- Yes - development would be centred on several linked settlements and could take advantage of new public transport provision.

Potential distribution of growth in a Greater Cambridge context

Growth focused along the A428 corridor in Greater Cambridge.

Substantively different to existing options?

- No – the A428 is a corridor on which public transport improvements are planned. This option will be addressed through Public Transport Corridor option.
- Yes – Notwithstanding the above, First Conversation options do not focus all growth in a geographically specific (rather than typology-specific) location.

Reasonable?

National policy

Yes – compatible with NPPF para. 102 on realising opportunities from existing or proposed transport infrastructure.

Reasonable: absolute constraints?

- Capacity: Yes
 - There is undeveloped land along existing or proposed transport corridors within Greater Cambridge which in theory has capacity for additional new settlements. There is also undeveloped land around villages along the proposed CAM transport corridor to the west of Cambridge which in theory has capacity for development.
- Environmental constraints: Unknown – assume yes.
 - It is assumed that some growth is permissible but still limited by absolute environmental constraints.

Reasonable: viable and deliverable?

- Viability: Unknown – assume yes
 - Following allocation in the South Cambridgeshire Local Plan, proposed new settlements at Waterbeach and Bourn are progressing through the application process, implying that developing new settlements in South Cambridgeshire is currently viable.
 - As evidenced by Annual Monitoring Reports, over many years, smaller developments in South Cambridgeshire villages have continued to progress through the planning system, proving their ongoing viability.
 - Locating growth close to public transport nodes should reduce additional transport infrastructure investment required to support development, and thereby increase viability.
- Deliverability: Unknown – assume mixed
 - Locating growth close to public transport nodes should reduce additional transport infrastructure investment required to support development, and thereby increase deliverability.
 - East West Rail and CAM proposed transport infrastructure projects are yet to have funding or development consent confirmed. As such,

confirmation whether such projects could be completed in time to support associated development within the next 20 years will be important as part of considering whether to allocate growth on these routes in the new Local Plan.

- New settlements usually have a long lead in time from planning permission to the start of construction. As such, confirmation whether a new settlement could be developed within the next 20 years will be important as part of considering whether to allocate it in the new Local Plan.

Principle E16: Brownfield sites first

Source

- First Conversation consultation response Q42

Description (from source)

Development should, where possible, be directed to existing brownfield sites; in particular, within urban areas.

Purpose/effects (officer judgement)

Protection of the countryside, reduction in landscape impact.

Relevant in a Greater Cambridge context?

- Yes – There are several brownfield sites that are potential sites for densification, including land within Cambridge urban area and in particular North East Cambridge and Cambridge Airport safeguarded land.
- No– Retaining industrial uses close to strategic transport links is also important for Cambridge, so needs to be balanced with improving spatial efficiencies of current industrial workspaces, providing strategies for innovative colocation of industrial and other uses, and relocation of industrial to suitable places.

Potential distribution of growth in a Greater Cambridge context

Development centred within Cambridge urban area.

Substantively different to existing options?

- No – this option is already covered by Densification and Edge of Cambridge, First Conversation options

Reasonable?

N/A

Principle E21: Nature recovery network

Source

- First Conversation consultation response Q42

Description (from source)

The plan should map a 'nature recovery network' as a framework to guide essential development. Water and water sources are a vital part of this connectivity, as are drains, streams, rivers, lakes and ponds. A 'nature recovery network' must include these aquatic elements at the same time as identifying new large-scale areas for habitat creation, including new woodlands and areas of natural regeneration, and opportunities for linking them all together. The plan should recognise that 'flooding', which will be increasingly likely with climate change, can be mitigated upstream by slowing river drainage. This 'natural' approach would require a reversion to an earlier pattern of agricultural land-use management with wet meadows and less arable land in the flood plain itself.

Purpose/effects (from source)

- Enhance existing and support provision of new habitats
- Mitigate and adapt to climate change
- Mitigate flood risk

Relevant in a Greater Cambridge context?

- Yes – Both councils have declared a biodiversity emergency and this nature-first approach would be a method for embedding sustainability and rewilding principles into the local plan.
- No – This does not set out how Cambridge can deliver new homes and jobs within this approach.

Potential distribution of growth in a Greater Cambridge context

Unclear. This idea requires further exploration to understand its impact on the potential distribution of development.

Substantively different to existing options?

Partly:

- Yes – as it reframes development as something that should focus on nature first.
- No – unclear what distribution of growth this principle would generate.

Reasonable?

Reasonable: National policy?

Partly

- Yes – supports NPPF para. 8 an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.
- No – this approach on its own would not address NPPF para. 35 requiring plans to be Positively prepared – providing a strategy which, as a minimum, seeks to meet the area's objectively assessed needs.

Reasonable: absolute constraints?

- Capacity: Unknown
 - Further consideration required to understand implications for growth locations and capacity.
- Environmental constraints: Yes
 - This option enhances nature and embeds environmental improvement as the central principle of the Local Plan.

Reasonable: viable and deliverable?

- Viability: Unknown
 - Once a nature first strategy had been defined, consideration would need to be given to the availability and viability for development that aligned with such a strategy.
- Deliverability: Unknown
 - Once a nature first strategy had been defined, consideration would need to be given to the availability of land for development that aligned with such a strategy, and beyond that its deliverability.
 - Beyond setting a development strategy informed by a nature first approach, funding would be needed to deliver the habitat improvements assumed to be incorporated into this strategy.

See Annex E. Further consideration of reasonable additional options for further consideration of this option.

Annex D. Cross-check: review of the uniqueness of the reasonable additional options

<i>Option</i>	<i>Likely distribution of growth</i>	<i>Unique?</i>
Principle B04: Integrate uses including housing and employment	Focus growth to the south of Cambridge close to research parks within the biotech cluster.	No – overlap with options C03, C13, E03
Option C03: Supporting an existing high-tech corridor	Focus growth to the south of Cambridge close to research parks within the biotech cluster.	No – overlap with options B04, C13, E03
C13: All development located in the high-tech growth area (All in Science Vale)	Focus growth to the south of Cambridge close to research parks within the biotech cluster.	No – merge with options B04, C03, E03
Principle E03: Housing in close proximity to employment/innovation centres	Focus growth to the south of Cambridge close to research parks within the biotech cluster.	No - overlap with options B04, C03, C13
Principle B05: Explicitly rely on existing or proposed transport infrastructure	Focus growth on the corridor to the west of Cambridge, which will be provided for by the Cambridgeshire Autonomous Metro and East West Rail proposals	No – overlap with C08 and E08
Option C08: Expanded growth area	Focus further growth on the A428 corridor to the west of Cambridge, which includes Cambourne and its expansion at Cambourne West, as well as allocated development at Bourn Airfield.	No – overlap with B05 and E08.
Option E08: A428 Corridor	Growth focused along the A428 corridor in Greater Cambridge.	Unclear – overlap with B05 and C08.
Principle D24: Nature First	Unclear. This idea requires further exploration to understand its impact on the potential distribution of development.	Overlap with E21; requires further consideration to understand development strategy implications.
Principle E21: Nature Recovery Network	Unclear. This idea requires further exploration to understand its	Overlap with D24; requires further consideration to

	impact on the potential distribution of development.	understand development strategy implications.
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Annex E. Further consideration of reasonable additional options

This section considers further the reasonable additional options set out above at Annex D. Cross-check: review of the uniqueness of the reasonable additional options, in order to confirm which should be taken forward for testing as strategic spatial options.

Integrating homes and jobs/supporting a high-tech area

Relevant ideas

Ideas considered include:

- Principle B04: Integrate uses including housing and employment
- Option C03: Supporting an existing high-tech corridor
- C13: All development located in the high-tech growth area (All in Science Vale)

Considerations

Rough analysis¹² of existing and future homes and jobs data provides the following insights relevant to considering options that seek to integrate the distribution of homes and jobs:

Existing distribution of homes and jobs:

- Urban/rural split: 45% of Greater Cambridge's homes are within the urban area of Cambridge, with 55% being within the rural area of South Cambridgeshire. In comparison, 56% of Greater Cambridge's jobs are within the urban area of Cambridge, with 44% being within the rural area of South Cambridgeshire.
- Within the urban area, the greatest proportion of jobs and homes (34% of each) are located within a roughly defined central area. In edge of Cambridge areas, there is a roughly even spread of homes around the compass, but with a low proportion to the south and west. In comparison, in edge of Cambridge areas jobs are distributed roughly evenly apart from in the south, which includes 19% of jobs in the urban area.
- Within the rural area, the most significant proportion of homes (28%) is in the north west, including for example the large villages of Histon and Impington and Cottenham. Beyond that there is a roughly even spread of homes around the compass apart from in the east, where there are significantly fewer homes (9%). In comparison, the greatest proportion of jobs (24%) is in the south, with the next highest proportion being in the north west (21%).
- Combining the urban and rural areas, the highest proportion of homes is to the north west (21%); the south west has the second highest proportion (17%); there is a roughly even spread of homes around other points of the

¹² Defining urban wards as either central or if on the edge of the urban area as one of north, east, south, south west, west and north west, and dividing rural wards in the same way.

compass. In comparison, the south has the highest proportion of jobs (21%), with the next highest proportion being within the central urban area of Cambridge.

Future distribution of homes and jobs:

- Urban/rural split: In 2036, 42% of Greater Cambridge's homes are within the urban area of Cambridge, with 58% being within the rural area of South Cambridgeshire. In comparison, 49% of Greater Cambridge's committed floorspace is within the urban area of Cambridge, with 51% being within the rural area of South Cambridgeshire.
- Within the urban area, the greatest proportion of jobs and homes (34% of each) are located within a roughly defined central area. In edge of Cambridge areas, there is a roughly even spread of homes around the compass, but with a low proportion to the south and west. In comparison, in edge of Cambridge areas jobs are distributed roughly evenly apart from in the south, which includes 19% of jobs in the urban area.
- Within the rural area, the most significant proportion of homes (28%) is in the north west, including for example the large villages of Histon and Impington and Cottenham. Beyond that there is a roughly even spread of homes around the compass apart from in the east, where there are significantly fewer homes. In comparison, the greatest proportion of committed floorspace (24%) is in the south, with the next highest proportion being in the north west.
- Combining the urban and rural areas, in 2036, the highest proportion of homes is in the north western parts of Cambridge and South Cambridgeshire (24%), with more or less equal spread of homes around the other points of the compass. In comparison, the greatest proportion of committed floorspace is in the south (37%), with the next highest proportion in the north west (31%).

Conclusions

The southern part of Cambridge and South Cambridgeshire has the highest proportion of existing jobs and committed employment floorspace but does not have a comparable proportion of existing and committed homes. This provides justification for an option which seeks to integrate homes and jobs within this area.

Growth around transport interchanges

Relevant ideas

Ideas considered include:

- Principle B05: Explicitly rely on existing or proposed transport infrastructure
- Option C08: Expanded growth area
- Option E08: A428 Corridor

Considerations

These ideas converge around focusing development within a specific broad area of a district focused around transport infrastructure provision, providing the following benefits:

- Connected to existing and proposed strategic transport infrastructure to encourage sustainable travel within the expanded growth area
- Contributing to the social sustainability of the broad area by further adding to the critical mass of population to support existing and planned services and facilities
- contributing to the achievement of economic growth through concentrating economic development

Conclusions

It is considered that there is merit in testing a strategic option specifically focusing as much growth as possible in the area of Cambourne and the A428 proposed public transport corridor, given proposed strategic transport infrastructure, and to add to the economic and social sustainability of that area.

Nature First / Nature Recovery Network

Relevant ideas

Ideas considered include:

- Principle D24: Nature First
- Principle E21: Nature Recovery Network

Considerations

Available evidence to inform a nature first/nature recovery network option includes environmental constraints and opportunities, drawing on environmental data and recent or proposed green infrastructure projects. These are explored below.

Environmental constraints

Information considered

- Local Authority environmental constraints data
- Initial mapping developed for Greater Cambridge Local Plan Green Infrastructure Opportunity Mapping (similar to above but more wide ranging).

Findings

Environmental constraints data is in general fine grained, such that it would not be possible to derive a broad strategic spatial option from it. One possible approach would be to protect all areas of peatland, albeit again this would not present sufficient guidance to generate a reasonable spatial option for the whole of Greater Cambridge.

Environmental opportunities

Information considered

Data

- [Cambridgeshire & Peterborough Habitat Opportunity Mapping 2018](#)
- [OxCam Local Natural Capital Plan:](#)

Projects

- [Cambridgeshire Green Infrastructure Strategy 2011](#)
- Natural Cambridgeshire Opportunity Areas identified as part of the OxCam Arc work
- [Fens Biosphere project](#)
- [Cambridge Great Park proposal](#)
- [Cambridge Past Present & Future/Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire Nature Recovery Network proposal](#)

Findings

Data

Data identifying environmental opportunities is fine grained with no clear pattern from which to derive a broad strategic spatial option.

Projects

There are a number of environmental projects/areas which are common to a number of the sources considered, including, for example, Wicken Fen Vision, West Cambridgeshire Hundreds, and the Gog Magogs. In theory one approach to defining a nature first option would be to develop only outside of all such commonly supported environmental project areas. However, taking this approach leaves significant areas of Greater Cambridge remaining within which to potentially distribute development, with no clear principles for how to do so.

Conclusions

In principle, it is challenging to determine a spatial option for where to locate development (that will serve people), based solely on the principle of considering the requirements of wildlife and habitats (and not people).

In practice, drawing on available information, it is difficult to identify a clear method to determine a specific Nature First/Nature Recovery Network strategic spatial option that goes beyond a constraints approach (i.e. avoiding locating development in

priority environmental areas), even when considering environmental opportunity projects. Without separately identifying principles for where to actively locate development (such as proximity to public transport which is already addressed through First Conversation options) it is therefore challenging to derive a reasonable spatial option.

Drawing on the above, it is considered that it is most appropriate to integrate consideration of environmental data and projects - including the later stages of the Green Infrastructure Opportunity Mapping referred to above, which will identify broad priority areas for green infrastructure – into the consideration of the benefits and disadvantages of all the strategic spatial options, rather than to attempt to create a standalone Nature First/Nature Recovery Network strategic spatial option.

Annex F. List of reasonable options for testing

First Conversation options

First Conversation options as set out at Annex A. Assessment of First Conversation options:

- Densification of existing urban areas
- Edge of Cambridge – non-Green Belt
- Edge of Cambridge – Green Belt
- Dispersal - new settlements
- Dispersal – villages
- Public transport corridors

Description and benefits of additional options

Supporting a high-tech corridor by integrating homes and jobs

Sources

- Principle B4: Integrate uses including housing and employment
- Option C3: Supporting an existing high-tech corridor

Description

This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

Purpose/benefits

- Supports the continued success of the life sciences cluster area around the south of Cambridge
- Sites growth near to existing centres of employment, potentially reducing the need to travel by car and so making a positive contribution to addressing climate change.
- Could support housing availability within the area south of Cambridge, an issue highlighted by employers within the area.

Expanding a growth area around transport nodes

Sources

- Principle B05: Explicitly rely on existing or proposed transport infrastructure
- Option C08: Expanded growth area
- Option E08: A428 Corridor

Description

This approach would focus new homes and jobs close to existing recent and committed development at Cambourne, close to the proposed East West Rail station, and at transport nodes along the proposed Cambridgeshire Autonomous Metro route between Cambourne and Cambridge.

Purpose/benefits

- Locates growth near to planned rail and metro public transport provision, potentially reducing the need to travel by car and so making a positive contribution to addressing climate change.
- Locates growth close to existing large-scale growth commitments, adding to the critical mass of population that could generate demand for further services and employment provision.

Annex G. List of sources considered

Sources of spatial ideas are listed below in the order they are considered within the report:

Cambridge Local Plan 2018 / South Cambridgeshire Local Plan 2018

<https://www.cambridge.gov.uk/local-plan-2018>

<https://www.scams.gov.uk/planning/local-plan-and-neighbourhood-planning/the-adopted-development-plan/south-cambridgeshire-local-plan-2018/>

Cambridgeshire & Peterborough Independent Economic Review - Final Report

<https://www.cpier.org.uk/media/1672/cpier-report-151118-lowres.pdf>

National Planning Policy Framework, 2019

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

Greater Norwich Joint Local Plan: Growth Options Document

<https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjOpt7IraboAhXRQ0EAHXFjBjMQFjAAegQIBBAB&url=https%3A%2F%2Fwww.greaternorwichgrowth.org.uk%2Fdmsdocument%2F2531&usq=AOvVaw0luchH9hfA064Jnhlr89qJN>

Bedford Borough Local Plan 2032: Development Strategy & Site Selection
Methodology Paper

<https://edrms.bedford.gov.uk/OpenDocument.aspx?id=VfHF1lpjPD6pGncQqTE5xQ%3d%3d&name=Development%20Strategy%20and%20Site%20Selection%20Methodology%20background%20paper.pdf>

South Oxfordshire Plan: South Oxfordshire District Council, UNDATED. Draft Topic Paper – Local Plan Spatial Strategy

[http://www.southoxon.gov.uk/sites/default/files/Draft%20Spatial%20Strategy%20Topic%20Paper%20\(002\).pdf](http://www.southoxon.gov.uk/sites/default/files/Draft%20Spatial%20Strategy%20Topic%20Paper%20(002).pdf)

Introducing the Oxfordshire Plan 2050, Potential Spatial Scenarios

https://oxfordshireplan.inconsult.uk/consult.ti/Oxfordshire_Plan_Intro/consultationHome

Hinckley & Bosworth Local Plan: Scope, Issues and Options Document / New Directions for Growth

https://www.hinckley-bosworth.gov.uk/downloads/file/6361/new_directions_for_growth_pdf

Urbed, 2014. Uxcester Garden City Wolfson Economics Prize submission

http://urbed.coop/sites/default/files/20140815%20URBED%20Wolfson%20Stage%2002_low%20res3.pdf

The Cambridge to Oxford Connection: Ideas Competition, Mae: Urcadia
<https://competitions.malcolmreading.com/cambridgeoxfordconnection/shortlist>

The Cambridge to Oxford Connection: Ideas Competition, VeloCity
<https://competitions.malcolmreading.com/cambridgeoxfordconnection/shortlist/tibbalds>

5th Studio for NIC, 2017. Cambridge, Milton Keynes and Oxford Future Planning Options Project
<https://www.nic.org.uk/wp-content/uploads/171122-NIC-Final-Report-5th-Studio-optimised.pdf>

Cambridge Futures, 2000: Cambridge Futures 1: Options, likely consequences and key issues
https://www.researchgate.net/figure/Cambridge-Futures-1-Options-likely-consequences-and-key-issues_fig1_331132410

Case Study: Land Use and Transport in Denmark
<https://www.centreforpublicimpact.org/case-study/land-use-and-transport-denmark/>

Gruenefinger
<https://translate.google.com/translate?hl=en&sl=de&u=https://gruene-finger.de/projekt/&prev=search&pto=aue>

Cambridge Past Present & Future/Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire Nature Recovery Network proposal
<https://www.cambridgeppf.org/blog/a-nature-recovery-network-for-cambridge>

Appendix 3: Strategic growth proposals included in neighbouring Local Plans

Completed June 2020

Council	LP status	Local Plan period	LP housing figures	LP jobs figures	Growth Strategy (key growth sites)	Other key points
Huntingdonshire District Council	Adopted	2011-2036	20,100	14,400	<p>Concentrate development in locations which provide, or have the potential to provide, the greatest access to services and facilities.</p> <p>Encourage limited development for rural communities to support social and economic sustainability.</p> <p>Four spatial planning areas take 75% of development:</p> <ul style="list-style-type: none"> - Huntingdon including Brampton and Godmanchester and the strategic expansion location of Alconbury Weald - St Neots including Little Paxton and the strategic expansion location of St Neots East - St Ives - Ramsey including Bury 	

Council	LP status	Local Plan period	LP housing figures	LP jobs figures	Growth Strategy (key growth sites)	Other key points
East Cambridgeshire District Council	Adopted	2015-2031	11, 500 (found to be out of date in April 2020 review)	9,200	<ul style="list-style-type: none"> - Focus growth in market towns of market towns of Ely, Soham and Littleport - limited development will take place in villages which have a defined development envelope 	Plan found sound subject to modifications in 2018 but withdrawn by the Council in 2019 rather than adopted as the Council did not agree with the modifications put forward by the Inspector to make the plan sound. A second review of the local plan took place in April 2020 which found the 2015 plan needs to be partially revised in respect of its strategic housing policies
Central Bedfordshire Council	Examination	Core Strategy: 2001-2026 Emerging plan: 2015-2035	Core Strategy: 17,950 Emerging plan: 39,500	Core Strategy: 17,000 Emerging plan: 24,000	<p>The core strategy directs growth to:</p> <ul style="list-style-type: none"> 60% in Major Service Centres 30% in Minor Service Centres 10% in Large and Small Villages <p>The emerging plan proposes:</p> <ul style="list-style-type: none"> - a new village east of Biggleswade, - up to 4 new villages in Marston Moretaine, -extension north of Luton and -extension east of Arlesey, <p>*some growth in existing settlements where supported by services.</p>	Plan at examination - most recent additional info submitted by officer in May 2020

Braintree District Council	Examination	Core Strategy: 2011-2026 Emerging plan: 2013-2033	Core Strategy: 3,372 Emerging plan: 14,320	Core Strategy: 14,000 Emerging plan: 490 per annum	Core Strategy: Land to the north-west of Braintree - off Panfield Lane - 600 dwellings and associated community uses, 15ha of employment land and site for football club Land to the south-west of Witham - off Hatfield Road -600 dwellings and associated community uses Land to the north-east of Witham (in Rivenhall Parish) - off Forest Road -300 dwellings and associated community uses. There is also a proposal for a business and innovation park at land to the west of A131 at Great Notley which will contain 18.5ha of B1, B2, B8 and C1 uses. Emerging plan: - extensions to Braintree town (4,000+) - A12 corridor (Hatfield Peverel, Kelvedon and Feering - 2,000) - 3 Garden communities on boundaries with Uttlesford and Colchester (each delivering 2,500 within plan period and between 7,000 and 24,000 each in total)	Draft plan published in 2017 Hearing took place at beginning of 2020 Inspectors report on section 1 received, finding proposal for Garden Communities unsound.
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Council	LP status	Local Plan period	LP housing figures	LP jobs figures	Growth Strategy (key growth sites)	Other key points
North Hertfordshire District Council	Examination	Emerging Plan: 2011-2031	14,000 (13,800 in district and 200 in Luton HMA also 1,950 further houses in Luton HMA to contribute to unmet need)		<ul style="list-style-type: none"> - North of Baldock for 2,800 homes 92,500 to be delivered by 2031) - North of Letchworth (900) - North of Stevenage (900) - East of Hichin (700) NE of Great Ashby (600) - East of Luton (2,100) Employment allocations at: <ul style="list-style-type: none"> - former power station Letchworth (1.5ha) - East Baldock (19.6ha) - West Royston (10.9ha) 	Hearings on the emerging plan were scheduled in March had to be postponed due to Covid.
West Suffolk Council	Preparing for Reg 18 consultation in Oct-Dec 2020	Forest Heath Core Strategy: 2001-2026 (housing to 2031) St Edmundsbury core strategy: 2001-2021	Forrest Heath: 6,400 St Edmundsbury: min 9,000 (15,631 between 2001-2026)	18,000 shared across Mid Suffolk / St Edmundsbury / Forest Heath (The East of England Plan 2008)	Newmarket - 15,000sqm of retail/240 dwellings Brandon: 2ha of employment/600sqm retail/260 dwellings - Mildenhall - 4.5ha employment/1,500sqm retail/260 dwellings - Lakenheath - 70 dwellings - Red Lodge - extant consent for new village centre with school and 1,659 dwellings St Edmundsbury - Development to focus of Bury St Edmunds (52%) and Haverhill (34%) (using sequential approach and favouring brownfield sites)	The current West Suffolk Local Plan (consists of the former Forest Heath area (FHDC) and former St Edmundsbury area (SEBC) Local Plan documents A policy review was published in July 2020 which found a high level of compliance with national policy.

Council	LP status	Local Plan period	LP housing figures	LP jobs figures	Growth Strategy (key growth sites)	Other key points
Uttlesford District Council	Preparing new local plan - timetable to be available in coming weeks	Local Plan from 2005 - 2015. Draft 2019 Local Plan was withdrawn - about to begin preparing docs for reg 18	N/A	N/A	N/A	Draft 2019 Local Plan was withdrawn.

Appendix 4: Sustainable Settlement Sizes Review

South Cambridgeshire District Council
and Cambridge City Council
Greater Cambridge Local Plan

Sustainable Settlement Sizes Review

Final Report

Prepared by LUC

November 2020

South Cambridgeshire District Council
 and Cambridge City Council
Greater Cambridge Local Plan

Sustainable Settlement Sizes Review

Version	Status	Prepared	Checked	Approved	Date
1.	Draft for client comment	S. Smith	S. Smith J. Owen	J. Owen	15/06/20
2.	Final	S. Smith	J. Owen	J. Owen	23/10/20
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Chapter 1 – Introduction

1.1 Cambridge City Council and South Cambridgeshire District Council have commissioned LUC to carry out a literature review to identify what size(s) of settlement is/are likely to be sustainable and could reasonably be planned for within a Greater Cambridge context. This information will inform consideration of options for the emerging Joint Local Plan, particularly with regards to new settlements and possibly other strategic spatial options, such as urban extensions.

Sustainability Appraisal

- 1.2 An integrated Sustainability Appraisal and Strategic Environmental Assessment is being undertaken for the emerging Greater Cambridge Local Plan (hereafter referred to as 'Sustainability Appraisal'). Sustainability Appraisal is required by law for the Local Plan, and its purpose is to identify and manage potential significant environmental, social and economic effects that may arise as a result of the Local Plan.
- 1.3 A key requirement of Sustainability Appraisal is to consider all reasonable alternatives as the plan evolves^{1,2}. This document will help to inform identification of reasonable alternatives, particularly in assisting the Councils to determine what size of new settlement should be considered reasonable in a Greater Cambridge context.

The brief

- 1.4 The brief set out the key tasks for the research as follows:
- Review of national planning policy relating to this topic.
 - Draw on experience of plan-making processes nationally and internationally.
 - Consider terms, including but not necessarily limited to:
 - Developing a working definition of what 'sustainable' means for a new settlement, and in a Greater Cambridge context.
 - Identify the key features of a settlement that make it sustainable. This could include but may not be limited to identifying thresholds in relation to making certain key infrastructure or service provision viable (recognising that some specific thresholds may be set at a local level).
 - Consider whether the location of a settlement may affect what size might be considered sustainable.
- 1.5 The brief noted that there may be a range of sizes of settlement that are considered sustainable, in various contexts and for various reasons.

¹ The Environmental Assessment of Plans and Programmes Regulations, 2004 No. 1633 ² MHCLG (2019) Planning Practice Guidance: Strategic environmental assessment and sustainability appraisal

Method of approach

- 1.6 The first task was to review relevant national policy. The starting point for this was the National Planning Policy Framework (NPPF) as this sets the overarching framework for planning policy in England. Other relevant policies and programmes relating to sustainable development of housing and new communities were also reviewed. The purpose of the policy review was to identify key policy documents and related literature and the main points they make with regards to new settlements, including policy support. Where such documents make reference to settlement sizes, this is noted as a starting point, but then compared to and refined using other evidence and guidance on thresholds and case studies of what has been delivered elsewhere. This also applies to the documents considered in Appendix A, which set out various thresholds.
- 1.7 The second task involved gathering intelligence from current and recent plan-making by looking at recent Inspectors' reports and letters for Local Plans that include new settlement proposals.
- 1.8 The third task was to define what makes a settlement 'sustainable'. This task involved reviewing standards set in national policy and programmes as explored in the previous task, as well as looking at a range of guidance on new communities, for example the Government's Garden Communities Toolkit and TCPA guidance on new garden communities. This task included consideration of whether the definition of 'sustainable' may differ depending on the location of a new settlement. This involved drawing on guidance and research documents, such as URBED's 2014 Wolfson Prize submission³.
- 1.9 The fourth task was to identify size thresholds beyond which key features of a sustainable settlement, such as schools and GP services, would likely be provided. This task drew on guidance on new communities, as referred to in the third task, as well as a review of standards/thresholds set out in guidance such as Shaping Neighbourhoods for Local Health and Global Sustainability⁴. In addition, this was informed by a review of existing new settlement proposals, including the case studies set out in Appendix A. The Greater Cambridge context was considered through review of the adopted Local Plans, including recent new settlement / new community proposals in Greater Cambridge and conversations with Cambridgeshire County Council regarding locally-specific requirements for infrastructure provision. More weight was given to existing Cambridgeshire-specific requirements than other thresholds.
- 1.10 The case studies referred to in this document are primarily from the UK. A desktop search for international case studies produced very little in terms of relevant, up-to-date case studies from elsewhere.
- 1.11 The final task was to draw conclusions from the above research to provide recommendations on the appropriate size of a new settlement in the Greater Cambridge context.

³ URBED (2014), Uxcester Garden City: Submission for the 2014 Wolfson Economics Prize. Available at: [URBED Wolfson submission](#).

⁴ Barton, Grant and Guise (2010) Shaping Neighbourhoods for Local Health and Global Sustainability

Structure of this document

1.12 The remainder of this document is structured as follows:

- Chapter 2 – Policy Review considers relevant national policy, programmes and Inspector's comments relating to sustainable development and new settlements.
- Chapter 3 – Defining a Sustainable Settlement seeks to develop a working definition of what 'sustainable' means for a new settlement, particularly in a Greater Cambridge context.
- Chapter 4 – Estimating Sustainable Settlement Sizes in Greater Cambridge draws on the policy review and examples from other local plan processes to identify what level of growth would be considered a sustainable settlement in Greater Cambridge.
- Chapter 5 – Conclusions summarises key findings from the previous chapters and provides recommendations on an appropriate approach for the consideration of new settlement sizes in Greater Cambridge

Chapter 2 – Policy Review

2.1 The purpose of this policy review is to identify key policy documents and related literature and the main points they make with regards to new settlements, including policy support. This review provides a background and policy context for development of new settlements, rather than a robust evidence base to determine what a sustainable settlement size would be in Greater Cambridge. Whilst it has not directly influenced our analysis of sustainable settlement sizes, it provides a starting point for considering what makes a settlement sustainable. This is considered further and refined using various evidence sources in Chapter 3.

National Planning Policy Framework (NPPF)

2.2 The NPPF recognises achieving sustainable development as the purpose of the planning system, and is built on the 'presumption in favour of sustainable development'. Sustainable development should achieve economic, social and environmental net gains.

2.3 Paragraph 72 of the NPPF recognises that provision of large numbers of new homes can often best be achieved through large-scale development, such as new settlements or significant extensions to existing settlements. It states that such large-scale development should (among other things):

- Be well located and designed.
- Be supported by the necessary infrastructure and facilities.
- Ensure that their size and location will support a sustainable community, with sufficient access to services and employment opportunities within the development itself (without expecting an unrealistic level of self-containment), or in larger towns to which there is good access.

2.4 Paragraph 103 of the NPPF suggests that planning should manage patterns of growth to help achieve an efficient and sustainable transport system. It states that “Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes”.

2.5 Paragraph 124 of the NPPF states that good design is a key aspect of sustainable development. Whilst this review is strategic and does not consider design details, a sustainable development would need to be able to incorporate sustainable design, including providing for a mix of development (including green and other public space, local facilities and sustainable transport).

2.6 In summary, the NPPF shows support for new settlements, if located and planned in a sustainable way. Whilst it does not suggest what size settlements should be to be sustainable, the NPPF provides policy guidance on what The Government considers is required to make a settlement sustainable, which feeds into our analysis on settlement size.

Garden Communities Prospectus and Toolkit

- 2.7 In August 2018, the Ministry of Housing, Communities and Local Government (MHCLG) published 'Garden communities: prospectus' to support the Garden Communities Programme. The prospectus was intended to encourage bids from local authorities and private sector partners for proposals for new garden communities and offers Government assistance to help deliver their development. This forms part of the Government's aim to increase housebuilding to an average of 300,000 net new homes by the mid-2020s.
- 2.8 Garden communities are a particular style of new settlement, following 'garden city principles'. The Prospectus sets out requirements and expectations for schemes applying for support under the UK Government's Garden Communities Programme. Whilst this review is not specific to garden communities, the prospectus includes useful principles on what a sustainable settlement looks like.
- 2.9 The Prospectus defines Garden Towns as settlements of more than 10,000 homes and Garden Villages as settlements of 1,500 to 10,000 homes. It implies a preference for development of Garden Towns, presumably due to the greater infrastructure provision and self-sufficiency expected at larger developments. However, it is not clear from the Prospectus or Toolkit how these numbers have been determined and therefore further evidence is required to understand if they are likely to represent sustainable settlement sizes.
- 2.10 The document defines a sustainable scale of development as 'built at a scale which supports the necessary infrastructure to allow the community to function self-sufficiently on a day to day basis, with the capacity for future growth to meet the evolving housing and economic needs of the local area'. It also refers to the need for integrated and accessible transport options, particularly sustainable transport, and design aspects, including generous greenspace provision.
- 2.11 The Government's Garden Communities Toolkit includes information on how to decide if and where a new garden community is appropriate, as well as information on considerations such as engagement, Masterplanning, infrastructure viability, delivery and governance.

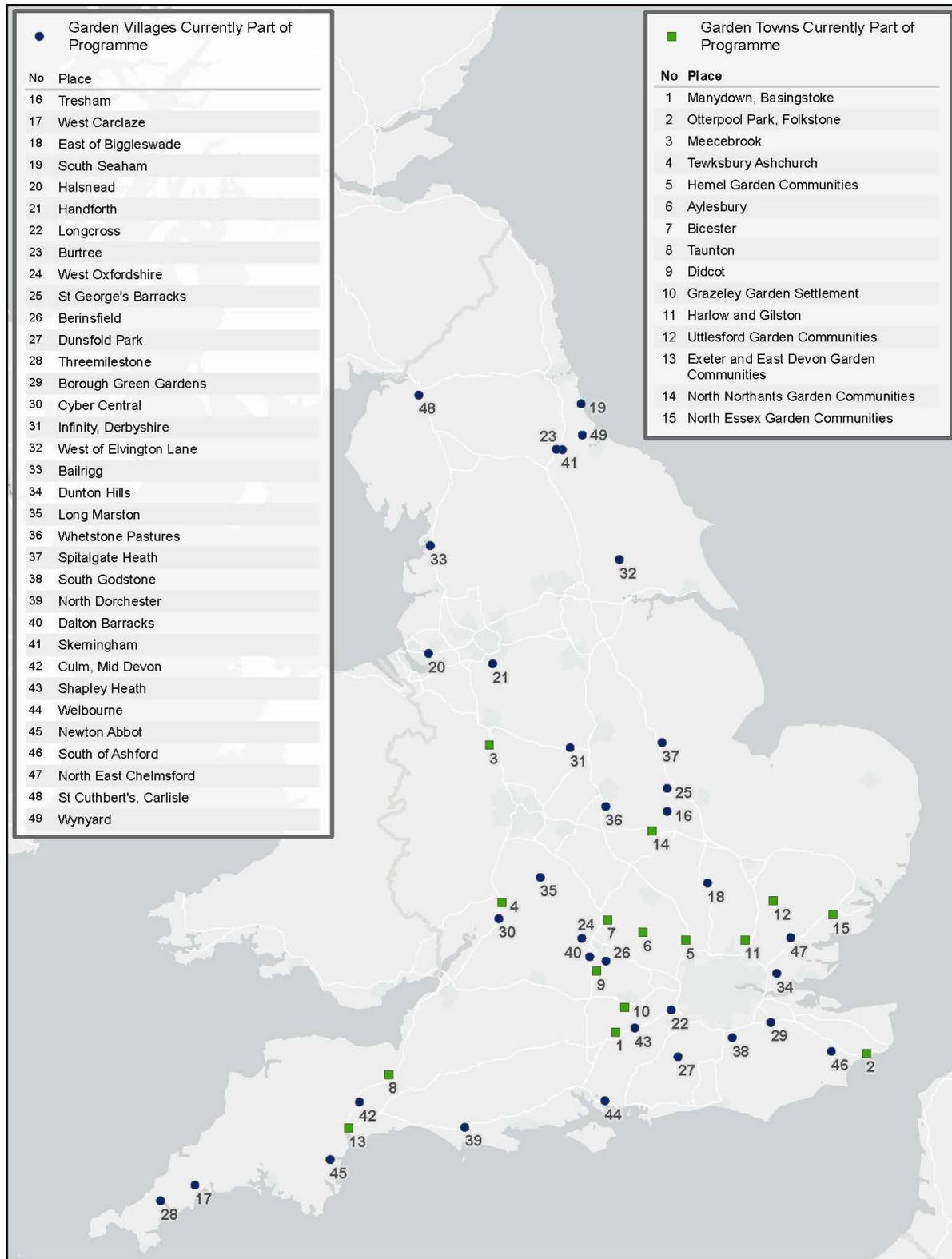
- 2.12 Figure 2.1 below⁵ shows garden towns and villages that are currently part of the Government's Garden Towns and Villages Programme. However, there is uncertainty in whether all of these will come forward. Research undertaken by Lichfields⁶ found that “Garden Communities status is not a ‘golden ticket’ to securing an allocation or planning permission, and only a third have a permission and or an allocation in an adopted plan. Another third are in emerging plans, and a full 30% are yet to achieve formal planning status. This means two thirds still need to establish the principle of development and are therefore subject to ongoing levels of planning risk. A number of proposals have experienced delay because of insufficient evidence that the schemes are well conceived or deliverable over the plan period.”
- 2.13 Some garden community proposals have already faced hurdles and barriers in the planning system, such as the garden communities planned in Uttlesford and North Essex, as explained further below.

⁵ UK Government (2020) Garden Towns and Villages Programme – January 2020

⁶ Lichfields (December 2019) How does your garden grow? A stock take on planning for the Government’s Garden Communities programme

Figure 2.1: UK Government Garden Towns and Villages Programme

Garden Towns and Villages Programme - January 2020



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Review of Inspectors' Reports

- 2.14 This section considers comments in recent Inspectors' reports and letters regarding new settlements. These show that the challenges in providing the evidence and justification for new settlement proposals to demonstrate that they meet the tests of soundness can be considerable, but that with proper appraisal and objective assessment, they can successfully be incorporated into Local Plans.

North Essex

- 2.15 The submitted North Essex Section 1 Local Plan proposed three garden communities: West of Braintree Garden Community; Colchester Braintree Borders Garden Community; and Tendring Colchester Borders Garden Community. These ranged in scale from a minimum of 7,000 homes to a maximum of 24,000 homes when fully built out, with each delivering 2,500 homes by 2033. The proposals included a rapid transit system, ultimately linking the three garden communities to Stansted Airport.
- 2.16 The Inspector's letter to the North Essex Authorities (15th May 2020) raised concerns about the deliverability of the garden communities. He highlighted the need for a high level of certainty regarding infrastructure provision, including the timing of this provision, if new settlements are dependent on such infrastructure (particularly with regards to transport, in this case). The letter also emphasised the need to ensure new settlements are viable, taking into account the cost of infrastructure and land values. The Inspector came to the view that it was appropriate to factor in a 40% contingency for transport and utilities infrastructure.
- 2.17 He concluded that only one of the garden communities was deliverable – the Tendring Colchester Borders Garden Community – and that the other two should be deleted from the Local Plan.

Uttlesford

- 2.18 The Inspectors' letter to Uttlesford District Council (10th January 2020) raised concerns regarding the proposal of three new garden communities included in the submitted Local Plan (one of which formed part of the West of Braintree Garden Community included in the submitted North Essex Section1 Local Plan).
- 2.19 The Inspectors concerns were partly due to a lack of consideration of all reasonable alternatives in terms of the spatial strategy. They also raised concerns that the new settlements would not meet all of TCPA's Garden City Principles, including due to uncertainty regarding land value capture for the community, mechanisms for long-term community stewardship and implementation of timely and efficient public transport. The timetable for delivery of the garden communities was also felt to be too optimistic. The letter highlighted that self-containment of new settlements is more likely to be successful if employment uses are provided in the early phases of development in order to prevent the settlements becoming commuter towns.

- 2.20 The Inspectors' letters for both Uttlesford and North Essex express concerns about relying on proposed transport infrastructure around which there remains some uncertainty. Both also suggest that the plans should not rely on meeting such a high proportion of development through new settlements (both plans propose to allocate three new settlements but Inspectors have suggested each only allocates one).

Hart District

- 2.21 The submitted Hart Local Plan included Policy SS3, which sets out the Council's commitment to preparing a New Settlement Development Plan Document (DPD) after the adoption of the Plan. Policy SS3 and its supporting text identified an Area of Search (AoS) at Murrell Green / Winchfield for the delivery of up to 5,000 dwellings through the production of a New Settlement DPD. The Plan stated that it was not required in the Plan period to meet identified housing needs, but that the Council anticipated that some 1,500 homes from the proposed new settlement would be expected to be delivered within the Plan period.
- 2.22 The Inspector's Report for the Hart Local Plan (10th February 2020), raised concern about the proposed new settlement had been considered and ranked against reasonable alternatives, and that the Local Plan established the principle of a new settlement for long-term growth but infrastructure considerations and viability had not been explored. He concluded that, in order to make the Local Plan sound, Policy SS3 should be deleted.

Harrogate

- 2.23 The Inspector's Report for the Harrogate Local Plan (30th January 2020) is supportive of the allocation of a new settlement at Green Hammerton/Cattal. Whilst recognising that focusing development at existing settlements is generally more sustainable, as this allows new residents to access the established services and facilities there, the Inspector states that settlements cannot expand indefinitely and there will come a point when this existing infrastructure is at or over capacity, therefore alternative solutions to providing sufficient housing, such as new settlements, are necessary.

Chapter 3 – Defining a Sustainable Settlement

Environmental, social and economic considerations for settlement size and the issue of self- containment

- 3.1 It is recognised that, when designed and developed carefully as ‘holistic’ neighbourhoods, new settlements can encourage highly sustainable living patterns. However, new settlements can lead to an increase in car commuting when they increase the need to travel, for example in cases where they function as dormitory settlements⁷ or fail to provide easy access to amenities⁸. Trip generation is likely to reduce as settlement size increases, provided the settlement in question is reasonably self-contained and can lead to journey internalisation⁹. In addition, a range of sustainable energy systems (including renewable energy and CHP) can most economically be provided at the neighbourhood scale, thus favouring larger-scale new neighbourhoods¹⁰.
- 3.2 New settlements should provide high quality living environments with infrastructure provided on site. A sustainable settlement should also provide a range of housing types and tenures to meet a range of housing needs. The available evidence does not point to any clear consensus on the link between scale of delivery and the provision of affordable housing, with a recognition that “the relationship between housing supply and affordability is neither simple or direct”¹¹. New settlements are generally seen as being capable of providing affordable housing. This is based on the assumption that larger-scale development can bring economies of scale, making them potentially cheaper to deliver and “enabling the delivery of significant additions to social housing stock, so long as S106 obligations can be applied to a significant level”¹². However there is evidence that the delivery of affordable housing may be more significantly influenced by scheme-

⁷ Williams, Katie (2014), Urban form and infrastructure: a morphological review. Future of cities: working paper. Foresight, Government Office for Science.

⁸ GL Hearn (2016), New Settlement Scoping Study: Aylesbury Vale District Council, Aylesbury Vale District

⁹ TCPA (2007), Best Practice in Urban Extensions and New Settlements, London: TCPA.

¹⁰ URBED (2014), Uxcester Garden City: Submission for the 2014 Wolfson Economics Prize. Available at: [URBED Wolfson submission](#)

¹¹ RTPI (2017), Better Planning for Housing Affordability: Position Paper. London: RTPI.

¹² Bramley, Glen; Ballantyne Way, Sarah; Cousins, Lin; and Houston, Dominic (2017), The Deliverability and Affordability of Housing in the South West of England. RTPI Research Report no. 16.

specific factors and changing grant funding priorities, especially given the need for supporting infrastructure¹³.

- 3.3 The seminal report on 'Best Practice in Urban Extensions and New Settlements' produced by the TCPA and published in 2007¹⁴ by the Department of Communities and Local Government stated that "the concept of self-containment does not mean that any size of place can be regarded as a sustainable community. A place needs to be large enough to support a secondary school. This means the number of homes will be in the range 4,000-5,000 at least. The reasoning is that a community that cannot provide for its children through to adulthood is not sustainable, and that the quality of community life is impoverished if older children do not participate because they are sent elsewhere each day. Growing up in a sustainable community also provides a sound foundation for citizenship. Secondary school catchments can be used as the basic building block when designing the size of a new town."
- 3.4 If large and mixed enough to enable residents to be economically active within the settlement, new settlements can support local economics and economic diversity. They can also attract inward investment, provided that development is of high quality and provides adequate buildings, services and connections for investors¹⁵. Post-war New Towns such as Milton Keynes are viewed as examples of where, as a result of investment in retail infrastructure and employment alongside housing, places were produced that "play an important role in the wider economy"¹⁶.
- 3.5 However, self-containment can also be a function of geography. It has long been considered that the further the distance from a central major city, the greater the probability of self-containment in terms of jobs, homes and services¹⁷. However, it has also been demonstrated that as mobility has increased over time, and people are able and willing to travel longer distances, self-containment is becoming more difficult to achieve. Nonetheless, the general rule that the further away from a central major city, the more likely self-containment can be achieved still holds.
- 3.6 In summary, larger new settlements are generally more likely to be considered sustainable because they can be more self-contained, although this in turn is also influenced by the proximity of the new settlement to a larger conurbation. These issues are explored in more detail below.

¹³ Bramley, Glen; Ballantyne Way, Sarah; Cousins, Lin; and Houston, Dominic (2017), The Deliverability and Affordability of Housing in the South West of England. RTPI Research Report no. 16.

¹⁴ TCPA (2007), Best Practice in Urban Extensions and New Settlements, London: TCPA.

¹⁵ Williams, Katie (2014), Urban form and infrastructure: a morphological review. Future of cities: working paper. Foresight, Government Office for Science.

¹⁶ TCPA (2015), New Towns and Garden Cities – Lessons for Tomorrow. Stage 2: Lessons for Delivering a New Generation of Garden Cities. London: TCPA.

¹⁷ TCPA (2007), Best Practice in Urban Extensions and New Settlements, London: TCPA.

Components of a sustainable settlement

- 3.7 'Sustainability' is a broad term incorporating environmental, social and economic factors. The Government's Garden Communities Toolkit¹⁸ sets out the following sustainability considerations for Masterplanning new communities:
- Plan active and accessible travel options
 - Meet residents' day-to-day needs by planning a range of uses that are easily accessible by walking, cycling and public transport.
 - Incorporation of sustainable design and construction
 - Include energy use and supply, water use and supply, ecology and biodiversity, lifespan and durability of materials, and the use of technology
 - Interdependence of urban systems and communities and the effects of global issues.
 - Plan in resilience for future change. This includes climate change, technological advances and economic uncertainty, and the ability of a place to adapt to changing circumstances
 - Design inclusive and intergenerational green spaces and public realm.
 - These need to be flexible enough to adapt to the community's changing needs over time.
 - Encourage healthy and active lifestyles.
 - Design space to enable good access to local facilities, green space, safe places for active play, food growing and social interaction.
- 3.8 The Toolkit also encourages new garden communities to be future-ready by incorporating digital technology and other areas of innovation, including new methods of construction and energy production, allowance for autonomous vehicles and new trends in future technologies.
- 3.9 The TCPA promotes its Garden City Principles¹⁹ as the basis for a sustainable new settlement:
- Land value capture for the benefit of the community.
 - Strong vision, leadership and community engagement.
 - Community ownership of land and long-term stewardship of assets.
 - Mixed-tenure homes and housing types that are genuinely affordable.

¹⁸ Homes England (2019) Garden Communities Toolkit [online], Available at: <https://www.gov.uk/guidance/garden-communities/infrastructure>, Accessed: 9/6/2020

¹⁹ TCPA (date not available) Garden City Principles [online] Available at: <https://www.tcpa.org.uk/garden-city-principles>, Accessed: 9/6/2020

- A wide range of local jobs in the Garden City within easy commuting distance of homes.
 - Beautifully and imaginatively designed homes with gardens, combining the best of town and country to create healthy communities, and including opportunities to grow food.
 - Development that enhances the natural environment, providing a comprehensive green infrastructure network and net biodiversity gains, and that uses zero-carbon and energy-positive technology to ensure climate resilience.
 - Strong cultural, recreational and shopping facilities in walkable, vibrant, sociable neighbourhoods.
 - Integrated and accessible transport systems, with walking, cycling and public transport designed to be the most attractive forms of local transport.
- 3.10 As such, the infrastructure provided and design of development play a substantial role in whether a settlement can be considered sustainable, although the TCPA's Garden City Principles also focus on governance. Location and design can influence the environmental impact of the settlement in terms of harm to or enhancement of the ecological, landscape and historical baseline. Design can also influence social equity, inward investment, and climate change mitigation and resilience. The nature of development, i.e. what is to be built, influences social equity, economic productivity and viability of the settlement. Given that this review focuses on the size of settlement that would be sustainable, without reference to specific locations or design details, sustainability is considered primarily in relation to the nature of a new settlement, i.e. what elements would be included in settlements of different sizes.
- 3.11 The policy review suggests that in order to be sustainable, a settlement needs to include the following:
- Necessary infrastructure and facilities (including greenspace).
 - Access to services and employment on-site or in larger towns to which there is good access.
 - A range of transport modes, particularly sustainable transport.
- 3.12 In order to meet the points above, we need to define what constitutes 'necessary infrastructure and facilities'. Similarly, the policy review suggests that a new settlement should have a substantial degree of self-sufficiency and that day-to-day needs of residents should be met onsite.
- 3.13 The Garden Communities Toolkit states that "the infrastructure needed to support a sustainable garden community can include:
- Physical components, like streets, cycle paths, utilities and public realm.
 - Green and blue infrastructure, like open space and green corridors, water bodies and natural habitat creation.

- Social/ community infrastructure like education, healthcare, community, retail, play for all ages, and sports/ leisure facilities.
- Strategic infrastructure needed to support delivery of the whole community, like major transport infrastructure, a secondary school or a country park.
- Local infrastructure is needed to serve a neighbourhood, for example, a primary school.”

3.14 It has been assumed that the physical components of infrastructure (first bullet) would be a necessary part of any strategic development and that development would not be permitted without consulting utilities providers and ensuring these could accommodate the new development. However, if one or more new settlements or strategic urban extensions are to be included in the Local Plan, these will need to be subject to viability testing to ensure this essential infrastructure can be provided. The case studies in Table 3.1: give examples of what local authorities have taken to constitute necessary or day-to- day services and facilities when preparing their local plans.

Table 3.1: How case studies define key facilities and services

Case Study	Key services and facilities as defined by the case study
Cambridge Local Plan (2018)	
Table 8.3 of the adopted Cambridge Local Plan ²⁰ sets out example community uses that would be expected to serve different catchments (local, neighbourhood, district and city-wide). The uses specified at neighbourhood and district levels are likely to best represent day-to-day needs.	<p>Local:</p> <ul style="list-style-type: none"> • Community or civic room. <p>Neighbourhood:</p> <ul style="list-style-type: none"> • Community house or hall. • Primary school. • Day nursery. • District: <ul style="list-style-type: none"> • Public library. • Primary care facility. <p>Community centre and other shared use services/buildings.</p> <ul style="list-style-type: none"> • Function room. • Secondary school. • Place of worship.

²⁰ Cambridge City Council (2018) Cambridge Local Plan

Harrogate District Local Plan	
The New Settlement Background Paper for the Harrogate Local Plan ²¹	Local convenience store. GP.

Stafford Local Plan	
The Settlement Assessment for the Stafford Local Plan ²² identifies key aspects of sustainability and community facilities.	Shops. Meeting places. General Medical Facility. Sports venue. Cultural buildings. Public houses. Places of worship. Library. Post Office. Schools.

3.15 For the purposes of this document, services and facilities considered to meet people's day-to-day needs are set out in Table 3.2:. These have been compiled using a combination of the data sources discussed above, personal communication with Cambridge City Council and professional judgement. It is important to note that Table 3.2: presents the minimum range of services considered to meet day to day needs and provision of further services and facilities should be included where possible. In particular, the larger a new settlement, the more additional facilities should be provided, including arts and cultural venues (e.g. museums, music venues), restaurants, hotels and larger retailers.

²² Stafford Borough Council (2018) New Local Plan, Settlement Assessment

Table 3.2: Services and facilities required to meet day-to-day needs

Services and facilities required to meet daily needs
Local shops (including a supermarket)
Early years provision
Schools (primary and secondary)
Employment opportunities
Publicly accessible green space
Community meeting space
Public transport stop(s) (train or bus) ²³
GP surgery or health centre
Recreation and leisure facilities
Library

3.16 With regards to employment opportunities, new development will generate employment during the construction stage, and any new strategic site is likely to generate some employment opportunities, for example through managing or working at a new local shop, pub or school. However, 'employment provision' as referred to in Table 3.2: relates to a substantial area of land set aside specifically for employment use, rather than community, such as a business park or industrial area.

Access to existing settlements

3.17 Although garden communities and new settlements are often characterised as being 'stand-alone', in practice this is often not the case. For example, under the Government's Garden Communities programme, some rely on existing services of a neighbouring settlement either as 'linked' new settlements, or can be considered as 'urban extensions' rather than self-contained communities or 'standalone settlements'. Lichfields found that 22 of 49 garden communities are standalone settlements not functionally linked or directly adjacent to existing settlements, eight were major new settlements clearly linked to nearby towns, and the remaining 19 were urban extensions, on the edge of existing towns and cities such as Basingstoke, Bicester, Taunton and Wellingborough.

²³ Footpaths and cycleways have not been included in this list as it has been assumed these can be designed into all scales of development

The standalone projects accounted for approximately one third of homes in the programme (35%), the linked new settlements another third (32%), and the urban extensions the final third (33%). On average, the largest of these were the linked new settlements, around 16,000 homes each, while standalone settlements and urban extensions were on average around 6,300 and 7,000 homes respectively²⁴.

3.18 Experience from Europe highlights that there is substantial benefit in being near an existing urban conurbation that can share access to jobs and services, particularly in the early stages of developing a new settlement²⁵. As such, some settlements could be considered sustainable with a lower level of provision, if they are located with good access to one or more larger towns or cities. Providing there are accessible, frequent and rapid connections to the larger town or city, it may be reasonable for residents to visit the larger town for some day to day needs.

3.19 Alternatively, smaller new settlements could come forward in a way that echoes Ebenezer Howard's proposal of a larger, central garden city, surrounded by smaller cities with good connections into the larger city, or the very similar 'hub and spoke' approach to expanding market towns set out in the Taylor Review²⁶. URBED's proposal to grow central Oxfordshire through 'snowflakes'²⁷ is a similar idea. This involves a central city, in this case Oxford, surrounded by towns/urban extensions (sub-neighbourhoods), each in turn surrounded by smaller neighbourhoods. For each settlement, the highest density development and best transport connections are in the centre, maximising access to these. On the other hand, larger new settlements may benefit from being more remote from existing towns and cities, in order to encourage self-containment. If residents have to travel further, and perhaps by less convenient modes/routes to work, shop and spend leisure time in other towns, they are more likely to carry out these activities in the settlement where they live.

²⁴ Lichfields (December 2019) How does your garden grow? A stock take on planning for the Government's Garden Communities programme

²⁵ PRP, URBED and Design for Homes (2008), Beyond Eco-towns: Applying the Lessons from Europe, PRP Architects Ltd.

²⁶ Matthew Taylor (2008) Living Working Countryside, The Taylor Review of Rural Economy and Affordable Housing

²⁷ The URBED Trust (2019) Oxfordshire Futures 2050, Achieving smarter growth in Central Oxfordshire

3.20 The Inspector's report for the Harrogate Local Plan, discussed in Chapter 2, asserts that settlements cannot expand indefinitely, due to the capacity of existing infrastructure or due to environmental limitations, such as unacceptable harm to landscape or the historic environment. Similarly, the TCPA suggested that, whilst it may seem efficient to continue to add housing estates, business parks or urban extensions etc. to existing towns, towns will reach a limit. This could be a physical limit, such as a motorway or river, or a sense that 'the expansion is so removed from the heart of the place that it might as well not be part of the place'²⁸. No existing evidence on the extent to which a settlement can expand has been identified; this is likely to depend on a case by case basis and is a matter of planning judgement. The extract from Urban form and infrastructure: a morphological review²⁹ in Appendix B states that both peripheral development and new settlements can provide access to services and facilities if adequate new services are provided or there is capacity at existing services and facilities nearby.

Defining 'good access'

- 3.21 Central to planning for new communities, whether new settlements or not, is to have a good understanding of what 'good access' means, as this is a fundamental ingredient of sustainability.
- 3.22 URBED's 'snowflake' model is based each sub-neighbourhood having a central public transport stop that is never more than 15 minutes from the town centre³⁰ (although these are urban extensions, rather than new settlements, which would likely be further away).
- 3.23 Various guidance documents, such as Providing for Journeys on Foot³¹ and Shaping Neighbourhoods³² set standards and thresholds for acceptable walking distance to services and facilities. These are presented in Table 3.3: Providing for Journeys on Foot gives 'desirable', 'acceptable' and 'preferred maximum' distances, whereas Shaping Neighbourhoods suggests different thresholds

²⁸ TCPA (2007), Best Practice in Urban Extensions and New Settlements, London: TCPA.

²⁹ Williams, Katie (2014), Urban form and infrastructure: a morphological review. Future of cities: working paper. Foresight, Government Office for Science.

²⁹

³⁰ URBED (2014), Uxchester Garden City: Submission for the 2014 Wolfson Economics Prize. Available at: [URBED Wolfson submission](#)

³¹ Institution of Highways and Transport (2000) Guidelines for Providing for Journeys on Foot ³² Barton, Grant and Guise (2010) Shaping

Neighbourhoods for Local Health and Global Sustainability

3.24 based on population density. The shortest ('desirable') and longest ('preferred maximum') recommended distances are included in Table 3.3:. Whilst walking distances are most relevant to provision of services and facilities within a settlement, the time such journeys would take can be used to estimate likely acceptable travel times by other modes of transport. For example, it takes about 5 minutes to walk 400m, therefore if 400m is the acceptable walking distance it can be assumed that 5 minutes would be an acceptable travel time by other modes. As such, Table 3.3: converts each distance threshold into a travel time as well. However, this can only be used as a rough guide as there are likely to be other considerations when travelling by other modes of transport.

Table 3.3: Example accessibility standards

Service / facility	Desirable walking distance / time	Preferred maximum walking distance / time
Providing for Journeys on Foot standards ³³		
Town centres	200m / 2.5 minutes	800m / 10 minutes
Commuting/school Sight-seeing	500m / 6.25 minutes	2km / 25 minutes
Elsewhere	400m / 5 minutes	1,200m / 15 minutes
Shaping Neighbourhoods standards ³⁴		
Nursery/first school	400m / 5 minutes	600m / 7.5 minutes
Primary/middle school	500m / 6.25 minutes	800m / 10 minutes
Secondary school	700m / 8.75 minutes	1,200m / 15 minutes

1.

³³ Institution of Highways and Transport (2000) Guidelines for Providing for Journeys on Foot

³⁴ Barton, Grant and Guise (2010) *Shaping Neighbourhoods for Local Health and Global Sustainability*

- 3.25 When travelling by public transport, there will likely be a short journey to a bus or tram stop, or train station and a period of time waiting at a bus or tram stop, or train station. In addition, people are likely to travel by car or public transport for longer distances and therefore may be prepared to spend more time travelling to reach their destination. WYG used the National Travel Survey to analyse how far people travel to a bus, tram/tube stop or railway station³⁵. They found that the mean distance walked to a bus stop was 580m (7.25 minutes) and the 85th percentile (i.e. the distance within which 85% of journeys are made) was 800m (10 minutes). The average distance walked to a railway station was 1,010m (12.63 minutes) and the 85th percentile was 1,610m (just over 20 minutes).
- 3.26 Table 3.3: suggests that, ideally, all local services and facilities should be within 15 minutes' walk. The preferred maximum walking times for those things residents are likely to be prepared to travel further for, such as employment, a larger centre or leisure centre is generally between 20 and 25 minutes. It is therefore assumed that residents would be willing to travel a similar amount of time via other modes of transport to access such services and facilities. Ideally this would be by sustainable modes of transport and would require minimum travel. For example, if residents are travelling elsewhere for work, they could stop at a supermarket near their workplace on the way home. Taking into account WYG's findings discussed above, that people will walk around 10 minutes to a bus stop and more to a train station, for the purposes of this study, 'good access' to a larger settlement is considered to mean 10-15 minutes travel time on public transport. The door-to-door journey time will be longer than this as it will include travelling to/from the public transport stop/station.
- 3.27 There are a number of other guidance documents setting out standards for the provision, quality and accessibility of local services and facilities, which should be taken into account when considering and planning for new settlements. For example, Natural England's ANGSt³⁶ and Fields in Trust's standards³⁷ should all be referred to when considering provision of open space and recreation facilities.

³⁵ Wakenshaw and Bunn on behalf of WYG (2015) *How far do people walk?*

³⁶ Natural England (2010) *'Nature Nearby': Accessible Natural Greenspace Guidance*

³⁷ Fields in Trust (2015) *Guidance for Outdoor Sport and Play, Beyond the Six Acre Standard*

- 3.28 ANGSt recommends that everyone, wherever they live, should have an accessible natural greenspace:
- of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home;
 - at least one accessible 20 hectare site within two kilometres of home;
 - one accessible 100 hectare site within five kilometres of home; and
 - one accessible 500 hectare site within ten kilometres of home; plus
 - a minimum of one hectare of statutory Local Nature Reserves per thousand population.

3.29 Fields in Trust sets out recommended benchmark guidelines for formal outdoorspace, play space and informal outdoor space as set out in Table 3.4:.

Table 3.4: Fields in Trust recommended benchmark guidelines

	Quantity guidelines (hectares per 1,000 population)	Walking guidelines (metres)	Quality guidelines
Playing pitches	1.2	1,200	<ul style="list-style-type: none"> ■ Quality appropriate to the intended level of performance, designed to appropriate technical standards. ■ Located where they are of most value to the community to be served. ■ Sufficiently diverse recreational use for the whole community. ■ Appropriately
All outdoor sports	1.6	1,200	
Equipped / designated play areas	0.25	Local Area for Play – 100m Locally Equipped Area for Play – 400m Neighbourhood Equipped Area for Play – 1,000m	

Other formal outdoor provision	0.8	700	<p>landscaped.</p> <ul style="list-style-type: none"> ■ Maintained safely and to the highest possible condition with available finance. ■ Positively managed taking account of the need for repair and replacement over time as necessary. ■ Provision of appropriate ancillary facilities and equipment. ■ Provision of footpaths. ■ Designed so as to be free of the fear of harm or crime.
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	Quantity guidelines (hectares per 1,000 population)	Walking guidelines (metres)	Quality guidelines
			<ul style="list-style-type: none"> Local authorities can set their own quality benchmark standards for playing pitches, taking into account the level of play, topography, necessary safety margins and optimal orientation.
Parks and gardens	0.8	710	<ul style="list-style-type: none"> Parks to be of Green Flag status. Appropriately landscaped. Positive management. Provision of footpaths. Designed so as to be free of the fear of harm or crime.
Amenity green space	0.6	480	
Natural and semi-Natural	1.8	720	

Identifying thresholds

3.30 There is little guidance available regarding assumptions on the level of growth required to make provision of community services and facilities, such as those listed in Table 3.2:, viable. This may be because this varies depending on local context. For example, Lichfields found that, based on the 40 schemes it identified in the Garden Communities programme, the levels of provision of schools between sites vary enormously, likely due to both existing provision and the use of need assessments by planners to determine education capacity requirements. They found within Garden Communities individual sites as small as 1,500 homes that will provide a secondary school, and a site of 3,300 homes that will provide two secondary schools, but there were also a number of examples of a site of over 2,500 homes providing no secondary school, and three sites providing two secondary schools were all over 2,500 homes.

- 3.31 Lichfields also noted that, in some cases, provision for secondary schools entailed only the land required, rather than full build-cost funding by the scheme³⁸.
- 3.32 We reviewed various documents to draw some general conclusions and compare opinions on the scale of development likely to be required to enable delivery of key services and facilities, as set out below. It is noted that the Garden Communities Prospectus is a political document to encourage bids for new garden communities as part of the Government's aim to increase housebuilding to an average of 300,000 net new homes by the mid-2020s. Furthermore the document does not explain the reasoning behind the figures of 1,500 and 10,000 homes. Whilst Policy Exchange is a right wing think tank (and therefore somewhat politically motivated), it is considered that the points set out below regarding settlement size are based on reasonable assumptions. These documents are not relied on to determine settlement size in this report, but provide a useful starting point for thinking.
- 3.33 The Garden Communities Prospectus suggests a 'new settlement' should be at least 1,500 new homes, as it defines Garden Villages as settlements of 1,500 to 10,000 homes and Garden Towns as settlements of more than 10,000 homes.
- 3.34 Policy Exchange suggests that garden villages would be around 1,500 to 5,000 homes³⁹, although as with the Garden Communities Prospectus, it is not clear what evidence this is drawn from. They include some assumptions about the level of infrastructure that would be viable for such villages, as set out below:
- Around 1,500 homes allows a village built around a hub of primary school, sports hub, and local centre with household recycling facilities. It would hope to attract a café/small shops/a post office; with some live/work opportunities too, but it will clearly function in relation to nearby larger settlements for facilities like hospital healthcare, and main retail shopping.
 - Around 5,000 homes allows a secondary school as well as two primary schools and a small but vibrant village centre (as above), but including an employment area, recreational space and landscaped areas. Whilst it probably won't attract a full range of national retailers, this would operate more as a self-sustaining community than its smaller counterpart.

³⁸ Lichfields (December 2019) How does your garden grow? A stock take on planning for the Government's Garden Communities programme.

³⁹ Policy Exchange (2015) Garden Villages: Empowering localism to solve the housing crisis

- 3.35 The TCPA's guidance on garden cities⁴⁰ suggests that new garden settlements generally consist of around 5,000 homes or more, with garden cities starting at around 15,000. The TCPA's guidance suggests that development should aim to provide at least one job per household. Whilst it is recognised that this guidance is for garden cities and that smaller new settlements may rely more on commuting to other nearby towns, it sets a standard to aim for. The guidance also recognises that no settlement is wholly self-contained and therefore good public transport links should be available to access employment in nearby centres as well.
- 3.36 Viability Testing Local Plans: Advice for planning practitioners⁴¹ draws on the (now withdrawn) 2010 Code for Sustainable Homes Cost Review to suggest that 'strategic' sites (including new settlements and strategic extensions) would be around 5,000 homes and larger.
- 3.37 Both the Garden Communities Prospectus and Policy Exchange document suggest that the starting point for a new dwelling is 1,500 homes, and this would be a village with a more limited range of services and facilities. However, the TCPA's guidance on garden cities and the Viability Testing Local Plans document suggest that around 5,000 homes is a starting point for new settlements (TCPA suggests this is based on provision of a secondary school⁴²). This may suggest that whilst a smaller settlement could meet local needs to an extent through provision of a more limited range of services and facilities, larger settlements are likely to be more viable.
- 3.38 The North Hertfordshire New Settlement Study⁴³ noted that the first garden cities (Letchworth and Welwyn Garden City) consisted for around 15,000 to 20,000 homes. First and second generation new towns, such as Skelmersdale, Peterlee and Hatfield generally consist of around 15,000 to 20,000 dwellings (although some are notably larger, around 40,000 dwellings or up to 59,000 at Telford), whereas third generation new towns, such as Milton Keynes and Peterborough are much larger, at around 70,000 to 90,000 dwellings. These numbers are substantially higher than those discussed in the documents above. This does not mean that smaller new settlements are necessarily unsustainable if they provide the critical mass of population to ensure viable provision of services and facilities. However, the North Hertfordshire New Settlement Study showed that this can vary greatly.

⁴⁰ TCPA (2014) The art of building a garden city: garden city standards for the 21st century

⁴¹ Local Housing Delivery Group (2012) Viability Testing for Local Plans: Advice for planning practitioners

⁴² TCPA (2007), Best Practice in Urban Extensions and New Settlements, London: TCPA.

⁴³ Mott MacDonald, on behalf of ATLAS (2016) North Hertfordshire New Settlement Study.

For example, the study found that in new towns on average, there are around 1,500 dwellings to a primary school, although Skelmersdale has 700 dwellings per primary school and Telford and Peterborough have more than 2,500 dwellings per primary school. Similarly, it found that provision of GP surgeries in new towns varied from one per 4,000 people up to one per 16,000 people. It is noted that the study also highlights that the new towns considered were founded and advanced through an historic context and a different planning environment to today.

3.39 Appendix A sets out thresholds for the services and facilities set out in Table 3.2: from various sources. It also sets out the services and facilities that have been provided, or are planned to be provided at new settlements/communities recently constructed and proposed. This demonstrates that the level provision of services and facilities that can be expected to be provided at new settlements varies from place to place, but there does appear to be a general trend of a lower level of services being provided at settlements or urban extensions of around 1,000 to 2,000 homes and then a higher level of services being provided at larger strategic sites of around 3,000 to 5,000 homes and larger. The examples included in Appendix A do not generally reflect a lower level of services being provided at strategic extensions, when compared to new settlements.

Chapter 4 – Estimating Sustainable Settlement Sizes in Greater Cambridge

The Greater Cambridge context

- 4.1 Comprising Cambridge City and South Cambridgeshire District, Greater Cambridge covers approximately 360 square miles, with a total population of 290,000 people. Cambridge City and South Cambridgeshire have a unique relationship, in that South Cambridgeshire entirely surrounds Cambridge City. Greater Cambridge borders Huntingdonshire and East Cambridgeshire to the north; Central Bedfordshire to the west; North Hertfordshire, Uttlesford and Braintree to the south, and to the east, it borders West Suffolk.
- 4.2 Whilst Cambridge City is distinctly urban, South Cambridgeshire is a mainly rural district. With Cambourne in the west, Histon to the north and Sawston in the south being the most populated settlements in Greater Cambridge, after Cambridge. Greater Cambridge contains a wealth of historic assets, with over 4,000 listed buildings, 32 conservation areas and 24 registered parks and gardens across Cambridge and South Cambridgeshire. There were settlements in the locality of Cambridge in the Bronze Age and Iron Age, but the Romans built the first town at Cambridge. The bridge across the River Cam or Granta, from which the town takes its name, had existed since at least 875. The town is recorded in the Domesday book and by the 1200's it was a thriving commercial town and the University of Cambridge had been founded^{44,45,46}.
- 4.3 Cambridge's internationally renowned university, its world-class reputation for research, science and technology excellence, and its high quality of life, has led to considerable growth pressure over recent decades. Being a historic city surrounded by Green Belt, a number of new settlements have been planned and established in Greater Cambridge in recent years. These are set out in Table 4.1:.

⁴⁴ <https://www.cam.ac.uk/about-the-university/history/early-records>

⁴⁵ <http://www.localhistories.org/cambridge.html>

Table 4.1: New settlements in Greater Cambridge

Settlement	Description
Bar Hill	Bar Hill village was planned in the late 1950s to address a housing shortage in South Cambridgeshire. The first residents moved in in 1967 but the village was not completed until 1989.
Cambourne	Cambourne consists of around 4,250 homes and comprises the villages of Lower, Greater and Upper Cambourne. The first planning permission for Cambourne was given in 1996 and construction started in 1998. Building work began on Upper Cambourne in 2008. Cambourne West, which will be a fourth, linked village is allocated in the adopted South Cambridgeshire Local Plan (Policy SS/8).
Northstowe	Northstowe is a new town based on and around the site of the former RAF Oakington base. Northstowe was allocated in the 2003 Cambridgeshire and Peterborough Structure Plan and the first phase of development was given planning permission in 2012. The first homes were occupied in 2017. The South Cambridgeshire Local Plan 2018 allocates an extension to Northstowe (Policy SS/5), which will contribute to meeting the 10,000 homes already planned for.
Waterbeach New Town	The South Cambridgeshire Local Plan 2018 allocates a new town of 8,000 to 9,000 dwellings on and around the former Waterbeach Barracks (Policy SS/6).
Bourn Airfield	The South Cambridgeshire Local Plan 2018 allocates a new village of around 3,500 dwellings at Bourn Airfield (Policy SS/7).

4.4 In addition to the new settlements set out above, the adopted Cambridge and South Cambridgeshire Local Plans allocated a number of other strategic sites, namely Orchard Park, Land Between Huntingdon Road and Histon Road, Cambridge East and North East Cambridge (previously referred to as 'Cambridge Northern Fringe East'). North East Cambridge in particular, will be of a scale equivalent to a new settlement, providing over 8,000 new homes and 28,000 jobs, and will provide a range of infrastructure to meet the needs arising from development and existing local needs.

Defining a sustainable settlement size in the Greater Cambridge context

4.5 Drawing on the information presented in Chapter 3 and Appendix A, we have identified reasonable assumptions regarding the amount of housing required to enable viable provision of local services and facilities in new communities in Greater Cambridge. These assumptions are set out in Table 4.2:. In order to ensure these are relevant to a Greater Cambridge context, locally specified standards have been used as the threshold, where available, as there is greater certainty and precedent in this being required (and it is assumed, delivered) locally (i.e. the standards for early years provision, a primary school, a secondary school and a library in Table 4.2: reflect Cambridgeshire County Council Standards). The basis for all standards are set out in Table 4.2:. It has been assumed that a smaller settlement of 1,500 homes would provide a number of services and facilities and this has been taken as a starting point for the rows in Table 4.2: with more limited local evidence. This has been applied for those services and facilities that the Policy Exchange document⁴⁷ assumed would be provided at this size, if this is in line with what is proposed to be provided at East of Biggleswade, which is the smallest case study included, at 1,500 homes.

Table 4.2: Amount of housing required to enable viable provision of local services and facilities in new communities

Services and facilities required to meet daily needs	Approximate minimum number of new dwellings required to enable provision	How threshold has been determined
Local shops / local/town centre (preferably including a post office)	1,500	Even a small new settlement would be expected to provide some local shops. This is somewhat corroborated by the examples given in Table A.2: Houlton in Rugby and Former Alconbury Airfield and Grange Farm in Huntingdonshire are both expected to provide a main/district centre or local centre per 1,550 people and 1,666 people respectively. The new village East of Biggleswade, the smallest example in Appendix A (1,500 homes) is expected to provide 'a mix of retail' ⁴⁸ .
Early years provision	1,000	Cambridgeshire County Council requirement (to be integrated into/provided alongside primary school).
Primary school	1,000	Cambridgeshire County Council requirement.
Secondary school	3,000	Cambridgeshire County Council requirement.

⁴⁸ https://www.centralbedfordshire.gov.uk/info/45/planning_policy/468/local_plan_-_overview/4

Services and facilities required to meet daily needs	Approximate minimum number of new dwellings required to enable provision	How threshold has been determined
Employment opportunities	3,500	<p>All examples in Table A.2 are expected to provide employment opportunities, except the new village East of Biggleswade (1,500 homes). There is little guidance or policy on this matter, but it is noted that the second smallest case study, Bourn Airfield at 3,500 homes, is expected to provide employment land, hence the 3,500 homes figure. It is noted that the Policy Exchange document⁴⁹ suggests a settlement of around 5,000 homes would provide an employment area, but as this is not well evidenced in the document it has not been relied on.</p>
Publicly accessible green/open space	450	<p>All examples in Table A.2 are expected to provide publicly accessible green/open space. Standards in the existing Local Plans are set out per population, rather than giving threshold of the number of homes that would trigger the need for new open space. Nevertheless, the 450 homes figure here is based on the approximate number of homes that the existing local plan standard thresholds relate to (see Appendix A). It is anticipated that any new settlement will be larger than 450 dwellings and will provide publicly accessible green/open space.</p>

Services and facilities required to meet daily needs	Approximate minimum number of new dwellings required to enable provision	How threshold has been determined
Community meeting space	1,500	<p>Shaping Neighbourhoods suggests development of around 1,670 homes would warrant a new community hall or similar. Standards in the adopted South Cambridgeshire Local Plan give a floorspace figure per population, which is difficult to translate to facilities per number of homes.</p> <p>All examples in Table A.2 are expected to provide new community meeting space, often with an emphasis on multifunctional space. Given that this includes the smallest case study, East of Biggleswade (1,500 homes), which is similar to the Shaping Neighbourhoods threshold, 1,500 homes is considered an appropriate threshold.</p>

Services and facilities required to meet daily needs	Approximate minimum number of new dwellings required to enable provision	How threshold has been determined
Public transport stop(s) (train or bus) ⁵⁰	1,500	<p>It is essential that any new settlement is served by public transport, in order for it to be sustainable. All examples in Table A.2 are expected to include public transport links (although this wasn't discussed in the information regarding Houlton).</p> <p>Documents considered in Table A.1 gave little information on this, although it is noted that the North Essex SA assumed a new community of a minimum 2,000 homes would include transport links. Given this and that even the smallest of the new community case studies considered (East of Biggleswade) included public transport links, 1,500 homes is considered a suitable threshold.</p>
GP surgery or health centre	4,500	<p>With regards to the case studies in Table A.2, Bourn Airfield at 3,500 homes is not expected to include a GP surgery, whereas the next largest example in Huntingdonshire, at 5,000 homes, is expected to provide one.</p>

⁵⁰ Footpaths and cycleways have not been included in this list as it has been assumed these can be designed into all scales of development

Services and facilities required to meet daily needs	Approximate minimum number of new dwellings required to enable provision	How threshold has been determined
		<p>The North Essex SA used a threshold of 4,500 homes, informed by discussions with the North Essex and Mid Essex Clinical Commissioning Groups (CCGs), which is between the examples above and is also close to the Shaping Neighbourhoods figure of 4,167 homes, As such, 4,500 is considered a suitable threshold.</p> <p>We were advised by NHS England and the Cambridgeshire and Peterborough Clinical Commissioning Group that a local threshold has not been identified at this time. However, the Councils will continue to work with healthcare infrastructure providers as the Local Plan progresses, in order to ensure suitable provision of healthcare facilities for all scales of new residential development.</p>
Recreation and leisure facilities	1,500	<p>All examples in Table A.2 are expected to provide new recreation and leisure facilities, including East of Biggleswade (1,500 homes) (Bourn Airfield may rely on larger facilities elsewhere ie. Cambourne).</p> <p>Standards identified in Table A.1 are generally for specific types of facility. It is expected that smaller new settlements (taken to be 1,500 homes) would provide some level of recreation and leisure facilities, as reflected in proposals for East of Biggleswade.</p>

Services and facilities required to meet daily needs	Approximate minimum number of new dwellings required to enable provision	How threshold has been determined
Library (could be mobile library stop, access point or full library)	All	Cambridgeshire County Council advised that any new settlement would be required to provide some kind of library provision. This could be a full library (larger settlements), satellite library, access point or a mobile library stop (smaller settlements). Information regarding library provision was not available for many of the new community case studies in Table A.2.

4.6 What constitutes a sustainable settlement size will depend on a number of factors, including the location and pattern of development. In order for a new settlement to provide all of the services and facilities set out in Table 4.2:, it would have to consist of at least 4,500 homes. This 4,500 homes threshold relates to the threshold for GP surgeries. This is because this is the largest minimum threshold for all services considered, i.e. 4,500 homes would be expected to provide all of the services and facilities listed in Table 4.2:), but a smaller number of homes may not provide for a GP surgery (but may provide other services listed in Table 4.2:).

4.7 A smaller settlement size may be acceptable for a new settlement, where other services and facilities in a larger centre can be easily accessed nearby (as discussed in Chapter 3, such services and facilities should be within around 15 minutes travel time on public transport time, excluding travel to/from public transport stops). It should be noted that the need to provide the services and facilities set out in Table 4.2: will depend on local circumstances. For example, if the new settlement has good access to an existing employment area, but none of the other amenities listed, then just the amount of employment land provided within the new settlement itself could perhaps be reduced. This is explored further below.

Location and pattern of new development

- 4.8 In terms of existing access to significant services and facilities the only relevant larger settlement with a substantially higher level of services and facilities within Greater Cambridge is the city of Cambridge. When considering access to Cambridge, the focus is likely to be on the city centre, where retail and leisure uses are focused and is likely to be most accessible by public transport. The Cambridge City Centre Capacity Study⁵¹ also recognised that the city centre is an increasingly important location for office development. As Cambourne, Northstowe and Waterbeach continue to expand, they could play a future role in serving surrounding settlements as well. It is noted that the planned new settlement at Bourn Airfield is expected to deliver a slightly lower level of infrastructure provision compared to other new settlements considered in Table A.2, due to its proximity to Cambourne. For example, it is likely that the Bourn Airfield site will include a satellite library, with residents having access to a larger library in Cambourne if needed and the larger recreation facilities at Cambourne are expected to be used by Bourn Airfield residents.
- 4.9 It is recognised that reliance on existing services and facilities in Cambridge depends on the capacity of these. New development can make contributions to expanding the capacity of existing services and facilities, but there will also be a physical limit to their expansion. For example, the 2013 Retail and Leisure Study⁵² noted limited scope for expansion of retail and leisure opportunities in the City Centre. As such, it is recommended that all facilities set out in Table 4.2: are provided at any new settlement, regardless of its proximity to Cambridge.
- 4.10 New settlements located at the edge of Greater Cambridge may be able to rely on existing services and facilities in larger towns and cities beyond the South Cambridgeshire boundary, such as Letchworth Garden City and Huntingdon, and possibly also smaller settlements, such as Haverhill and Royston. This would require close cross-boundary working with neighbouring authorities to establish where existing services and facilities have capacity and the extent of contributions required from development to improve or expand these.
- 4.11 Closely linked to the issue of access to existing centres, services and facilities is the issue of the pattern of new development, which will have implications for the level of service provision. For example, it could be sustainable to create a new community on the edge of Cambridge itself, much like the regeneration of North East Cambridge, which can both make use of existing services and facilities within the city as well as providing new and improved facilities to serve the development and the wider area

⁵¹ ARUP (2013) Cambridge City Centre Capacity Study

⁵² GVA (2013) Cambridge Retail and Leisure Study Update 2013

Similarly, new settlements could grow around Cambridgeshire using the 'hub and spoke' approach to expanding market towns set out in the Taylor Review⁵³, and URBED's proposal of growing towns in a 'snowflake' pattern⁵⁴, as set out in Chapter 3. Such expansions to Cambridge would likely need to provide a lower level of new infrastructure, and could focus on provision of services and facilities that are currently at or over-capacity, or that the location is deficient in.

- 4.12 Similarly, new strategic developments could adjoin existing settlements in order to both utilise and bolster their service provision. For example, this could include further growth at an existing settlement, such as one of the villages, further growth at Northstowe or Waterbeach, or an additional village at Cambourne. This could be particularly valuable where a smaller settlement could be brought to a critical mass for provision of new infrastructure, such as a railway station or other form of rapid transit. In 2014, URBED claimed that it was not possible to build a new city from scratch in the economic context of the report, and promoted the idea that new cities should grow from an existing, mature town⁵⁵. This would be somewhere with good rail connections, educational facilities, cultural facilities and a thriving town centre, which are considered unachievable in the early years of a new settlement. Whilst a smaller, existing village may not include all these amenities, the principle can be carried across. Expanding an existing village will enable development to capitalise on existing infrastructure, particularly in the early years when there would otherwise not be enough residents to render some infrastructure viable. New development may also help support and expand existing services and facilities. In addition, expanding a village may help ensure a sense of place and a central hub for the community from the beginning. However, as URBED noted, one of the key challenges in expansion of existing settlements is gaining local support⁵⁶. This is often related to a somewhat inevitable change in character of the settlement and actual or perceived impacts on the environment. There may also be fears that new development will not invest sufficiently in the infrastructure needed to support the expansion.
- 4.13 Rather than physical proximity to a larger settlement, a new settlement could share services with another if it is linked by frequent and rapid public transport links. As discussed above, around 10-15 minutes travel time on public transport (excluding travel to/from public transport stops) is considered 'good' access, although this transport must also be frequent, reliable and have sufficient capacity. This approach to development could result in a single new settlement with links to Cambridge. Alternatively, a string of smaller settlements could be created along a public transport corridor, such as the planned Cambridgeshire Autonomous Metro or the Cambridgeshire Guided Busway.

⁵³ Matthew Taylor (2008) Living Working Countryside, The Taylor Review of Rural Economy and Affordable Housing

⁵⁴ The URBED Trust (2019) Oxfordshire Futures 2050, Achieving smarter growth in Central Oxfordshire

⁵⁵, ⁵⁶ URBED (2014), Uxcester Garden City: Submission for the 2014 Wolfson Economics Prize. Available at: [URBED Woldson submission](#)

Additional considerations

- 4.14 The sustainability and success of new settlements depends on factors beyond the infrastructure they provide. Appendix B reproduces a table from Williams (2014) that summarises the 'conditions for achieving successful new places to 2065', and includes consideration of new peripheral developments and dispersed development in addition to new settlements. Ultimately the table concludes that, while the 'dispersed development' model raises challenges for creating successful places, both urban extensions and standalone new settlements can become 'successful places' socially, economically and environmentally, provided they are thoughtfully designed, appropriately located, and well served (at an early stage) with adequate infrastructure.
- 4.15 URBED⁵⁷ suggests that new garden cities are most successful when based on an existing settlement with good rail connections, infrastructure, services and facilities, or at least within proximity to growing urban conurbations so that they can share access to infrastructure, jobs and services in the early stages⁵⁸. In particular, high quality sustainable transport is required to create behaviour change from the start. In other European countries, amenities such as shops and restaurants have been encouraged to move into new communities early through low or rent-free periods and use of temporary space⁵⁹. URBED's 2014 Wolfson Prize submission⁶⁰ advocated substantial growth of an existing town through a 'hub and spoke' model, with urban extensions spaced out around the existing urban area but only joining to it at a small point. Whilst Greater Cambridge is not necessarily looking for new cities, it is worth bearing in mind these considerations when establishing any new settlement 'from scratch'.
- 4.16 As mentioned in Chapter 3, there are many more aspects to sustainability than what services and facilities are provided on-site. New settlements should seek to be as self-contained as possible. For example, there should be a variety of employment provision and this should be of a type to meet local need. New settlements should maximise the green infrastructure network, seek opportunities for community food growing and implement sustainable technologies that would be more challenging to retrofit into existing settlements, such as district heating networks, in order to be truly sustainable.
- 4.17 Other design factors that will need to be considered include density. Higher densities require less land-take and may therefore help to preserve the natural environment and countryside. However, this may mean lower levels of greenspace within the settlement itself, including fewer and/or smaller parks and gardens. Higher densities are likely to enhance accessibility to services and facilities, as larger numbers of people will be within walking distance of, for example, a school or railway station. However, this needs to be planned alongside the capacity of such infrastructure. Higher density development is

⁵⁷ URBED (2014), Uxcester Garden City: Submission for the 2014 Wolfson Economics Prize. Available at: [URBED Wolfson submission](#)

^{58, 59} PRP, URBED and Design for Homes (2008), Beyond Eco-towns: Applying the Lessons from Europe, PRP Architects Ltd.

⁶⁰ URBED (2014), Uxcester Garden City: Submission for the 2014

Wolfson Economics Prize. Available at: [URBED Wolfson submission](#)

likely to be focused on shared central resources, which offers the potential to generate a more extensive town centre to serve all neighbourhoods, whereas lower density development is likely to depend more heavily on local centres, which may not have as wide a range of services and facilities, or retail choice. Transport infrastructure is also likely to be more centralised and may therefore be more cost efficient as more people can be served by fewer links. However, if behaviour of residents does not take advantage of this, it could lead to congestion in the centre of the settlement⁶¹. Transport for New Homes⁶² suggests that many of the garden villages and towns built through the government's garden communities programme are not delivering modal shift set out in visions for these developments, for example in masterplans, local plans, or funding bids. Transport for New Homes found that the garden communities being built are still car- oriented, often at the expense of front gardens, sufficient and attractive pavements and street trees. It also found that new garden communities were associated with significant transport infrastructure to mitigate the expected increase in cars from the development, seemingly rather than seeking to reduce the increase in car use via modal shift. It was also suggested that some garden communities were located so as to 'unlock' strategic road infrastructure. Funding and accessibility (particularly walking distance and barriers such as busy roads) were recorded as key factors limiting modal shift. The report also linked the lack of high quality walking and cycling infrastructure to wider issues, such as poor performance of local shops (as footfall is low), inactive lifestyles, isolation and discrimination against those who can't drive or struggle to afford to buy and run a car. Whilst it is noted that Transport for New Homes is devoted to advocating for development that does not require reliance on private vehicles, it is helpful to bear in mind that development needs to include robust, practical principles for ensuring modal shift and to ensure this is delivered.

The test of deliverability

- 4.18 Of critical importance in the successful planning and delivery of new settlements are governance arrangements and viability. This is very much evidence in the Inspectors' considerations of new settlement proposals in Local Plans for North Essex, Uttlesford, and Hart District. Realistic and robust assumptions and calculations regarding the costs of land assembly, infrastructure, provision of affordable housing, including contingencies and inflation with regard to both construction costs and sale values are necessary. As Lichfields concluded, a number of garden communities proposals have experienced delay because of insufficient evidence that the schemes are well conceived or deliverable over the plan period. Promoters and local authorities need to be confident they can answer key questions, such as:

⁶¹ Mott MacDonald, on behalf of ATLAS (2016) North Hertfordshire New Settlement Study.

⁶² Transport for New Homes (2020) Garden Villages and Garden Towns: Visions and Reality.

Why is the site's inclusion in the spatial strategy for the area justified when assessed against reasonable alternatives?

- How will the project be implemented in light of relevant information about land ownership, delivery model, and infrastructure requirements?
- Is the scheme viable when taking into account the necessary infrastructure, affordable housing provision, a realistic delivery trajectory and robust cost and value assumptions?
- If external funding is required – e.g. from Government – but not yet secured, how should that uncertainty be factored into its role within the Local Plan housing trajectory?
- How does the planning policy identifying the site actually operate? What further planning tools are required to help unlock the scheme and ensure it delivers in a way that meets core policy requirements governing the quality of design and place?

4.19 If the promoters and local authorities can answer these questions positively, with confidence, and with a sound commercial as well as planning case, then new settlement proposals stand a much better chance of navigating the examination process, and being delivered on the ground.

Chapter 5 – Conclusions

- 5.1 Table 4.2: sets out minimum thresholds for a variety of essential services and facilities. However, the purpose of this document is to identify an overall sustainable settlement size. General consensus from the literature is that new settlements should constitute at least around 1,500 homes, although some sources seem to suggest 5,000 homes is more appropriate.
- 5.2 Overall, we recommend that a settlement of around 4,500 homes would be the minimum to be sustainable in Greater Cambridge and that the most sustainable option is to provide settlements of at least this size even in proximity to Cambridge. This is because a settlement of this size would be able to accommodate everyday services and facilities such as local shops, early years provision, a primary and secondary school, employment, green space, community meeting space, public transport infrastructure, a GP surgery or health centre and recreation facilities, which are required to provide the opportunity to meet needs locally without having to travel elsewhere (i.e. a measure of self-containment). This in turn can help to foster community cohesion and identity. However, it is acknowledged that the location and pattern of development of new communities will influence the appropriate size and smaller developments may be appropriate in certain circumstances. Larger settlements are likely to be more sustainable to an extent, as they are likely to be more self-contained, although the goal of self-containment needs to be approached with a degree of realism.
- 5.3 In practice, sustainable settlement size will vary between locations within Greater Cambridge, due to environmental constraints. In addition, new settlements should maximise sustainability through design, and a key consideration will be the promotion of walking and cycling within new settlements, and excellent public transport connections, particularly with Cambridge, but also with the wider strategic public transport network.
- 5.4 Finally, Cambridge City Council and South Cambridgeshire Council are in the strong position of having the experience of planning for new settlement proposals through the Local Plan process, and implementation in practice. The Councils will be aware of the considerable challenges of delivering new settlements, in terms of funding, securing services, facilities, infrastructure, and job creation, long lead-in times and phasing, as well as creating a genuine sense of community. The Councils will also be aware of the opportunities that new settlements provide, whether stand-alone, or linked to existing settlements, to design-in sustainability considerations, drawing on the lessons learned to date.

LUC

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Appendix A – Thresholds for Provision of New Services and Facilities

Table A.1 below sets out thresholds for provision of various services and facilities as required by the County Council, existing policy or set out in guidance documents. County Council requirements are expected to have a strong chance of being delivered, as the County Council is the local education authority. Whilst new requirements should be based on up to date evidence and not be solely based on existing local plan requirements, standards set out in current local plans are included, as these are locally specific and have been tested and found sound through the Examination process.

The North Essex SA assumptions are included because they were drawn from an exercise in which a number of parties were consulted to identify reasonable threshold assumptions. For the SA, assumptions regarding thresholds for delivery of healthcare services were drawn from discussions with the North Essex and Mid Essex Clinical Commissioning Group (CCG). Other assumptions were drawn from extensive liaison with site promoters and a local interest group.

Table A.2 sets out case studies of relatively recently constructed or proposed new communities and what infrastructure has been or is proposed to be delivered at these sites.

Table A.1: Approximate thresholds for provision of new services and facilities

Service/facility	Local shops / town/local centre	Early years provision	Primary school	Secondary school	Employment provision	Publicly accessible green/ open space	Community meeting space	Public transport services	GP surgery or health centre	Recreation and leisure facilities	Library
Cambridgeshire County Council ⁶³		1,000 homes (to be provided alongside primary school)	1,000 homes	3,000 homes							Required (more detail on case-by-case basis)
Cambridge Local Plan ⁶⁴						2.2 ha informal open space per 435 homes				1.2 ha outdoor sport per 435 homes people. 1 sports hall per 5,652 homes.	

⁶³ Communicated in a phone call between LUC and Cambridgeshire County Council

⁶⁴ The figures in this row were presented in the source as standards per population. They have been converted to standards per household (using an average household size of 2.3 people (Cambridgeshire Insight, Census 2011 Profile: Cambridge, available at:

Service/facility	Local shops / town/local centre	Early years provision	Primary school	Secondary school	Employment provision	Publicly accessible green/ open space	Community meeting space	Public transport services	GP surgery or health centre	Recreation and leisure facilities	Library
										1 swimming pool per 21,739 homes.	
South Cambridgeshire Local Plan (2018) ⁶⁵						1.2 ha informal open space per 417 homes	111m ² per 417 homes			1.6 ha outdoor sport per 417 homes	
Shaping Neighbourhoods for Local Health	Local centre per 2,500 homes District centre/ superstore	2,000 homes	1,667 homes	3,333 homes			1,667 homes		4,167 homes	Leisure centre per 10,000 homes	

⁶⁵ The figures in this row were presented in the source as standards per population. They have been converted to standards per household (using

Source	Local shops / town/local centre	Early years provision	Primary school	Secondary school	Employment provision	Publicly accessible green/ open space	Community meeting space	Public transport services	GP surgery or health centre	Recreation and leisure facilities	Library
and Global Sustainability ^{66,67}	e per 10,000 homes										
North Essex SA Assumptions	≥2,000 homes	≥2,000 homes	≥2,000 homes	≥4,500 homes	Assumed	≥2,000 homes	≥2,000 homes	≥2,000 homes	≥4,500 homes		
(note 2,000 homes was considered starting point for new community)				(≥2,000 homes would contribute to expanding existing schools					(>2000 homes) Would contribute to expanding existing facilities off-site		

⁶⁶ Barton, Grant and Guise (2010) Shaping Neighbourhoods for Local Health and Global Sustainability

⁶⁷ The figures in this row were presented in the source as standards per population. They have been converted to standards per household (using an average household size of 2.4 people) Cambridgeshire Insight, Census 2011 Profile: South Cambridgeshire, available at: <https://cambridgeshireinsight.org.uk/population/census-2011/>) to ensure they are comparable with other standards presented

Table A.2: Examples of service and facility provision at new settlements/ new communities ('Y' indicates that this type of facility is provided at the new community)

Service/ facility	Shops / town/local centre	Early Years Provision	Primary school	Secondary school	Employment provision	Publicly accessible green space	Community meeting space	Public transport services	GP surgery or health centre	Recreation and leisure facilities	Library
Current South Cambridgeshire Local Plan											
Waterbeach New Town (8,000-9,000 homes) ⁶⁸	Y	Y	Y (x5)	Y (x2)	Y	Y	Y (111 sqm per 417 homes)	Y	Y	Y	Y
New Village at Bourn Airfield (3,500 homes) ⁶⁹	Y	Y	Y (x2)	Y	Y	Y	Y (x2 multifunctional buildings)	Y		Y (possibly off-site)	Y (satellite)

⁶⁸ South Cambridgeshire District Council (2019) Waterbeach New Town SPD, Available at: <https://www.scambs.gov.uk/media/13057/waterbeach-new-town-spd-low-res-feb-2019.pdf>, Accessed: 05/06/2020

⁶⁹ South Cambridgeshire District Council (2019) Bourn Airfield New Village SPD, Available at: <https://www.scambs.gov.uk/media/14163/bourn-airfield-spd-adopted-2-10-2019.pdf>, Accessed: 05/06/2020

Service/ facility Case Study	Shops / town/local centre	Early Years Provision	Primary school	Secondary school	Employment provision	Publicly accessible green space	Community meeting space	Public transport services	GP surgery or health centre	Recreation and leisure facilities	Library
Northstowe (10,000 homes) ⁷⁰	Y (town and local centres)	Y	Y (x7)	Y (x1)	Y	Y	Y	Y	Y	Y	Possi bly
Cambourne (4,250 homes in Lower Great and Upper Cambourne)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Few Settlements/ Communities across the County											
Houlton, Rugby (6,200 homes) ⁷¹	Y (district centre and 3 local centres)		Y (x3)	Y	Y	Y	Y	?	Y	Y	

⁷⁰ Gallagher and Homes & Communities Agency (2012) Northstowe Development Framework Document

⁷¹ Planning application R11/0699 to Rugby Borough Council.

Service/ facility Case Study	Shops / town/local centre	Early Years Provision	Primary school	Secondary school	Employment provision	Publicly accessible green space	Community meeting space	Public transport services	GP surgery or health centre	Recreation and leisure facilities	Library
Former Alconbury Airfield and Grange Farm, Huntingdonshire (5,000 homes) ⁷²	Y (main centres and up to two secondary centres)	Y	Y (x3)	Y	Y	Y	Y	Y	Y	Y	
Cranbrook, East Devon (7,770 homes) ⁷³	Y	Y	Y (x3)	Y (all-through)	Y	Y	Y	Y	Y	Y	Possibly
East of Biggleswade, Central Bedfordshire (1,500 homes) ⁷⁴	Y	Y	Y	(contributions towards off-site facilities)		Y	Y	Y	(contributions towards off-site facilities)	Y	

⁷² Huntingdonshire District Council (2019) Huntingdonshire's Local Plan to 2036, Available at: <https://www.huntingdonshire.gov.uk/media/3872/190516-final-adopted-local-plan-to-2036.pdf>, Accessed: 8/6/2020

⁷³ East Devon District Council (2017) The Cranbrook Plan: Preferred Approach, Available at: <https://eastdevon.gov.uk/media/2271420/d-170928-masterplan-document-title-update.pdf>, Accessed: 8/6/2020

⁷⁴ Central Bedfordshire (date not available) Local Plan – overview, One new village east of Biggleswade, Available at: https://www.centralbedfordshire.gov.uk/info/45/planning_policy/468/local_plan_-_overview/4, Accessed: 8/6/2020

Appendix B – Conditions for Achieving Successful New Places

Table B.1: Conditions for achieving successful new places to 2065 (reproduced from Williams, 2014⁷⁵)

Characteristics of successful urban forms in the UK	New peripheral developments	New settlements	Dispersed development
Successful urban forms are ones that:	Can this be achieved?	Can this be achieved?	Can this be achieved?
Environmental characteristics			
Make sustainable use of the UK's land resource (accommodating demographic change without loss of valued land)	Yes, if sited in appropriate locations: e.g. not on land of high ecologically/landscape value.	Yes, if sited in appropriate locations i.e. well connected enough, not on land of high ecological/landscape value	Not usually, although individual developments might not be problematic, in aggregate, continued <i>ad hoc</i> dispersal would develop valued open land.
Make sustainable use of the UK's environmental resources (including protecting and enhancing biodiversity)	Yes, if planned sensitively. But there may be some inevitable loss if developing on greenfield sites.	Yes, if delivered using sustainable planning and design principles, including best practices (e.g. in Sustainability Impact Assessment, responsible sourcing, and integrated infrastructure – such as waste to energy). But there may be some inevitable loss if	Partly, small scale changes may not be problematic, but in aggregate are inefficient and may damage biodiversity.

⁷⁵ Williams, Katie (2014), Urban form and infrastructure: a morphological review. Future of cities: working paper. Foresight, Government Office for Science. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/324161/14-808-urban-form-and-infrastructure-1.pdf

Characteristics of successful urban forms in the UK	New peripheral developments	New settlements	Dispersed development
		developing on greenfield sites.	
Are physically adapted for the UK's future climate	Yes, if future climate is considered from the outset in design, planning and construction.	Yes, if adaptation is considered during design and construction.	Partly, if individual developments consider future climate from the outset in design, planning and construction. But harder to plan/manage collective/community scale solutions.
Do not contribute to future climate change (i.e. reduce carbon emissions, exceeding or matching international targets)	Yes, if they are zero/low carbon developments, and do not generate transport emissions. Travel emissions can be minimised by providing a mix of uses in the development and good connections to existing settlement.	Yes, if low/zero carbon design is applied from the outset, and if new physical and virtual connections to existing settlements/destinations are low carbon, and/or reduce travel demand.	Partly, if autonomous (micro) energy generation solutions are used. But likely to result in significant transport emissions (car travel).
Improve (or do not worsen) air quality	Yes, if development is designed as zero emission from the outset, and good connections are made to adjacent settlement. But are likely to inevitably generate some emissions from increased car use.	Yes, if development is designed as zero emission from the outset and good connections are made to existing destinations. But are likely to inevitably generate some emissions from increased car use.	Unlikely, due to few alternatives to car travel for dispersed development, so continued emissions likely (unless major change to electric vehicles).

Characteristics of successful urban forms in the UK	New peripheral developments	New settlements	Dispersed development
Facilitate efficient water management (systems and behaviours)	Yes, if new, efficient water infrastructure is provided (e.g. sustainable urban drainage systems) and connections are made to supply infrastructure in adjacent settlement (to maximise use of any 'spare' capacity). And if new development promotes water efficient behaviours (e.g. By using water meters, providing water butts etc.). But there may not be enough water for populations in some areas (given regional disparities and climate change).	Yes, if new, efficient water infrastructure is provided (e.g. sustainable urban drainage systems) and connections are made to supply infrastructure in adjacent settlement maximising use of any 'spare' capacity. And if new development promotes water efficient behaviours (e.g. by using water meters, providing water butts etc.). But there may not be enough water for populations in some areas (given regional disparities and climate change).	Partly, can facilitate localised water harvesting and recycling (at the level of a dwelling or group of dwellings). But is not efficient for mains water provision, and waste water processing

Facilitate efficient energy management (systems and behaviours)	Yes, if new efficient energy supply systems are provided (e.g. renewable) and/or the new development links to and makes use of spare capacity from adjacent supply sources. But new population may breach existing supply.	Yes, if new efficient energy supply systems are provided (e.g. renewable) at the outset.	Partly, can facilitate localised energy generation (at the level of a dwelling or group of dwellings). But is not efficient for provision from the grid/pipelines.
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Characteristics of successful urban forms in the UK	New peripheral developments	New settlements	Dispersed development
Facilitate efficient transport management (systems and behaviours)	Yes, if new efficient transport infrastructure is provided to adjacent settlement and wider destinations. And if peripheral development is large enough to provide mix of uses and facilitate walking/cycling.	Yes, if new efficient transport infrastructure is provided. And if the new settlement is large enough to provide mix of uses and facilitate walking/cycling.	No, dispersed development is difficult to service with public transport, and low carbon travel (walking and cycling) levels tend to be lower.
Facilitate efficient waste (solid and water) management (systems and behaviours)	Yes, if new efficient waste infrastructure is provided, and/or linked to any spare capacity in adjacent settlement	Yes, if waste management systems are well planned and infrastructure provided.	Partly, can facilitate localised waste management, e.g. there may be space for compositing. But, inefficient for general waste collection, recycling services etc.
Facilitate the efficient integration of different infrastructure systems	Partly. Where new infrastructure is required there may be the opportunity to introduce new integrated systems (e.g. energy to waste). But where infrastructure is connecting to existing systems, there may be lock-in.	Yes, if best practice in integrated systems (e.g. energy to waste, smart transport) are planned and provided.	Partly, if it facilitates small scale integrated infrastructure systems (e.g. within autonomous housing). But is inefficient and costly for mainstream systems (e.g. transport, energy, waste).
Social characteristics			
Adapt to future changes (social, economic and environmental) in a socially equitable way	Partly, if designed/developed to be flexible to future changes.	Partly, if designed/developed to be flexible to future changes.	Partly, provides some small scale flexibility. But not responsive to major social changes, e.g. does not provide enough affordable housing.

Characteristics of successful urban forms in the UK	New peripheral developments	New settlements	Dispersed development
Are desirable to the population	Yes, if high quality extensions, with a mix of house sizes and types, are provided at affordable costs. And if the adjacent settlement is desirable.	Yes, if the development is high quality, and provides a mix of house sizes and types at affordable costs.	Partly, very desirable, particularly to more affluent householders seeking larger homes/more space, for second home owners, and to rural residents, seeking to remain in their home towns/villages. Not desirable for those unable to afford it.
Provide a range of housing types and tenures to meet needs and be affordable	Yes, if designed to accommodate a variety of household types.	Yes, if designed to accommodate a variety of household types.	No, dispersed development has tended to provide housing at the higher end of the market, with affordability a problem.
Are accessible for all	Yes, if good connections to the adjacent settlement and to wider destinations are provided.	Yes, if good connections within the development and to wider destinations are provided.	No, accessibility is a key problem for dispersed developments (in terms of distance, range of nearby destinations, and car dependency).
Provide access to health/ education/ culture/ leisure services for all	Partly, if residents can access existing provision in adjacent settlement (and there is capacity). Or, if adequate new services are provided within the extension.	Partly, if the new settlement provides adequate services, or if they are provided in other settlements nearby.	No, accessibility to services is a key problem for dispersed developments (in terms of distance, provision of nearby services, and car dependency).

Are healthy	Yes, if planned and designed according to healthy urban planning principles. Can provide significant opportunities for good peripheral design where people can thrive. But, if they are not	Yes, if planned and designed according to healthy urban planning principles. Can provide significant opportunities for good design. But, if	Partly, if they support an active, rural life. But can become car-dominated, with inhabitants relying on inactive travel.
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Characteristics of successful urban forms in the UK	New peripheral developments	New settlements	Dispersed development
	well connected, can become car dominated dormitories characterised by inactive travel.	they are not well connected, can become car-dominated dormitories characterised by inactive travel.	
Economic Characteristics			
Do not cause land/property price shocks/instability	Partly, this depends on how much land is released and how this affects local/regional supply and demand.	Partly, this depends on how much land is released and how this affects local/regional supply and demand.	Partly, incremental process so does not usually have dramatic impact. But demand for this type of development by more affluent, and by those buying second homes has changed the rural housing market.
Enable efficiencies in infrastructure costs	Yes, if extensions are relatively high density then new infrastructure can connect to existing infrastructure in the adjacent city (where there is capacity), and be provided cost effectively. And, new infrastructure (such as combined heat and power systems) can be provided to serve the new population.	Yes, if well planned, and if new infrastructure systems are integrated. If densities and mix of use are well planned then low per capita costs.	No, it is costly to service dispersed developments. Per capita costs are high because of spatial distribution.

Enable efficiencies in public service (e.g. schools) costs	Yes, if extensions are relatively high density then the development can use services already provided in the adjacent	Yes, if populations are large enough then services can be provided at efficient per capita	No, public services are costly per capita in dispersed developments,
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Characteristics of successful urban forms in the UK	New peripheral developments	New settlements	Dispersed development
	development (i.e. where there is capacity), or new services can be provided (e.g. schools) cost effectively to the new community.	costs. However, there are different population thresholds for different services (e.g. primary schools, hospitals), so some costs may be borne by adjacent towns/cities.	because of spatial distribution (e.g. waste collection, social care).
Enable efficiencies in transport costs (for suppliers and residents)	Yes, if connections to adjacent settlement (transport interchanges and hubs) are optimised.	Partly, if developments are large enough, and well planned, then per capita costs can be low for supplying transport services, and residents will have options to walk/cycle. However, there will be infrastructure costs connecting to other hubs.	No, transport infrastructure is costly to provide to dispersed developments.
Support local economies and economic diversity	Yes, if the development is large/mixed enough and its population is economically active within the adjacent settlement, or in the new extension.	Yes, if the development is large/mixed enough to enable residents to be economically active within the settlement.	Partly, may support rural economies through diversification/modernisation.

Attract inward investment	Yes, if a high quality development, and if it provides	Yes, if a high quality development, and if provides buildings/	No, investment in dispersed locations tends to be small scale and piecemeal.
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Characteristics of successful urban forms in the UK	New peripheral developments	New settlements	Dispersed development
	buildings/ services/ connections desirable to investors	services/ connections desirable to investors.	
Facilitate innovation and creativity	Yes, if attracts creative/skilled population, and supports capacity in adjacent or nearby creative clusters.	Yes, if attracts creative/skilled population, and supports capacity in adjacent or nearby creative clusters.	Partly, there can be small scale innovation, but most innovation/ creativity is associated with clusters/ hubs of skilled people/businesses.
Facilitate efficient ICT provision	Yes, if links to provision in adjacent development, and is part of a connected city region.	Yes, if it is part of a connected city region.	No. dispersed developments are difficult and costly to service with ICT.

Appendix 5: Establishing the Baseline

Introduction

Before identifying new locations for jobs and homes in Greater Cambridge, it is important to establish the baseline amount and location of existing population, jobs and homes in the area.

Amount and Location of Existing Population, Dwelling Stock and Jobs

Cambridgeshire County Council prepare population and dwelling stock estimates, that are published on Cambridgeshire Insight. Employment (jobs) figures are published on NOMIS and are taken from the Business Register and Employment Survey.

Cambridge

Ward	2018 Population	2018 Dwelling Stock	Employment / Jobs	% of Population	% of Dwelling Stock	% Employment / Jobs
Abbey	10,300	4,420	4,000	7.5	8.1	3.7
Arbury	9,420	4,140	1,750	6.9	7.6	1.6
Castle	10,550	2,730	9,000	7.7	5.0	8.3
Cherry Hinton	9,140	3,850	4,500	6.7	7.1	4.1
Coleridge	10,010	4,220	4,000	7.3	7.7	3.7
East Chesterton	9,510	4,220	8,000	6.9	7.7	7.3
King's Hedges	9,470	4,060	1,500	6.9	7.5	1.4
Market	8,170	2,230	22,000	6.0	4.1	20.2
Newnham	8,030	1,870	8,000	5.9	3.4	7.3
Petersfield	8,720	3,710	6,000	6.4	6.8	5.5
Queen Edith's	9,570	3,900	21,000	7.0	7.2	19.3
Romsey	10,050	4,200	2,250	7.3	7.7	2.1
Trumpington	14,930	6,840	14,000	10.9	12.6	12.8

Ward	2018 Population	2018 Dwelling Stock	Employment / Jobs	% of Population	% of Dwelling Stock	% Employment / Jobs
West Chesterton	8,990	4,090	3,000	6.6	7.5	2.8
Total	136,850	54,460	109,000	100	100	100

South Cambridgeshire

Parish	2018 Population	2018 Dwelling Stock	% of Population	% of Dwelling Stock	Settlement Hierarchy
Abington Pigotts	150	70	0.1	0.1	Infill
Arrington	410	170	0.3	0.3	Infill
Babraham	320	140	0.2	0.2	Infill
Balsham	1,580	680	1.0	1.0	Group
Bar Hill	3,870	1,750	2.5	2.6	Minor Rural Centre
Barrington	1,100	480	0.7	0.7	Group
Bartlow	110	50	0.1	0.1	Infill
Barton	830	380	0.5	0.6	Group
Bassingbourn-cum-Kneesworth	2,920	1,350	1.9	2.0	Minor Rural Centre
Bourn	1,050	440	0.7	0.7	Group
Boxworth	220	100	0.1	0.2	Infill
Caldecote	1,780	680	1.1	1.0	Group
Cambourne	11,290	4,230	7.2	6.4	Rural Centre
Carlton	190	90	0.1	0.1	Infill
Castle Camps	650	290	0.4	0.4	Group
Caxton	590	250	0.4	0.4	Infill
Childerley	30	10	0.0	0.0	Infill
Comberton	2,360	990	1.5	1.5	Minor Rural Centre
Conington	160	60	0.1	0.1	Infill
Coton	910	390	0.6	0.6	Group
Cottenham	6,160	2,630	3.9	4.0	Rural Centre
Croxton	160	70	0.1	0.1	Infill
Croydon	220	100	0.1	0.2	Infill
Dry Drayton	660	270	0.4	0.4	Group
Duxford	1,890	790	1.2	1.2	Group

Parish	2018 Population	2018 Dwelling Stock	% of Population	% of Dwelling Stock	Settlement Hierarchy
Elsworth	650	280	0.4	0.4	Group
Eltisley	410	170	0.3	0.3	Group
Fen Ditton	750	370	0.5	0.6	Group
Fen Drayton	910	370	0.6	0.6	Group
Fowlmere	1,280	520	0.8	0.8	Group
Foxton	1,280	530	0.8	0.8	Group
Fulbourn	4,910	2,010	3.1	3.0	Minor Rural Centre
Gamlingay	3,810	1,630	2.4	2.4	Minor Rural Centre
Girton	4,710	1,870	3.0	2.8	Minor Rural Centre
Grantchester	510	270	0.3	0.4	Infill
Graveley	230	90	0.1	0.1	Infill
Great Abington	880	370	0.6	0.6	Group
Great and Little Chishill	630	280	0.4	0.4	Infill
Great Eversden	250	100	0.2	0.2	Infill
Great Shelford	4,460	2,070	2.8	3.1	Rural Centre
Great Wilbraham	680	290	0.4	0.4	Group
Guilden Morden	960	410	0.6	0.6	Group
Hardwick	2,550	1,040	1.6	1.6	Group
Harlton	310	130	0.2	0.2	Infill
Harston	1,820	780	1.2	1.2	Group
Haslingfield	1,620	710	1.0	1.1	Group
Hatley	190	80	0.1	0.1	Infill
Hauxton	970	440	0.6	0.7	Group
Heydon	240	100	0.2	0.2	Infill
Hildersham	200	100	0.1	0.2	Infill
Hinxton	330	150	0.2	0.2	Infill
Histon	4,760	1,990	3.0	3.0	Rural Centre
Horningsea	330	160	0.2	0.2	Infill
Horseheath	470	210	0.3	0.3	Infill
Ickleton	720	320	0.5	0.5	Infill

Parish	2018 Population	2018 Dwelling Stock	% of Population	% of Dwelling Stock	Settlement Hierarchy
Impington	4,360	1,810	2.8	2.7	Rural Centre
Kingston	240	110	0.2	0.2	Infill
Knapwell	90	50	0.1	0.1	Infill
Landbeach	850	390	0.5	0.6	Infill
Linton	4,650	1,920	3.0	2.9	Minor Rural Centre
Litlington	840	360	0.5	0.5	Infill
Little Abington	520	250	0.3	0.4	Group
Little Eversden	580	240	0.4	0.4	Infill
Little Gransden	310	140	0.2	0.2	Infill
Little Shelford	850	340	0.5	0.5	Infill
Little Wilbraham	440	200	0.3	0.3	Infill
Lolworth	150	60	0.1	0.1	Infill
Longstanton	3,810	1,580	2.4	2.4	Group
Longstowe	210	90	0.1	0.1	Infill
Madingley	200	100	0.1	0.2	Infill
Melbourn	4,750	2,080	3.0	3.1	Minor Rural Centre
Meldreth	2,020	820	1.3	1.2	Group
Milton	4,880	2,120	3.1	3.2	Minor Rural Centre
Newton	370	170	0.2	0.3	Infill
Oakington & Westwick	1,570	650	1.0	1.0	Group
Orchard Park	2,650	1,000	1.7	1.5	n/a
Orwell	1,070	470	0.7	0.7	Group
Over	2,880	1,160	1.8	1.7	Group
Pampisford	360	160	0.2	0.2	Infill
Papworth Everard	3,840	1,560	2.4	2.3	Minor Rural Centre
Papworth St Agnes	60	30	0.0	0.0	Infill
Rampton	470	200	0.3	0.3	Infill
Sawston	7,300	3,090	4.6	4.6	Rural Centre
Shepreth	780	330	0.5	0.5	Infill

Parish	2018 Population	2018 Dwelling Stock	% of Population	% of Dwelling Stock	Settlement Hierarchy
Shingay-cum-Wendy	120	50	0.1	0.1	Infill
Shudy Camps	330	130	0.2	0.2	Infill
South Trumpington	450	220	0.3	0.3	n/a
Stapleford	1,970	840	1.3	1.3	Rural Centre
Steeple Morden	1,170	500	0.7	0.8	Group
Stow-Cum-Quy	550	250	0.3	0.4	Infill
Swavesey	2,570	1,060	1.6	1.6	Minor Rural Centre
Tadlow	190	70	0.1	0.1	Infill
Teversham	2,810	1,290	1.8	1.9	Group
Thriplow	1,180	510	0.7	0.8	Group
Toft	550	240	0.3	0.4	Infill
Waterbeach	4,840	2,260	3.1	3.4	Minor Rural Centre
West Wickham	430	180	0.3	0.3	Infill
West Wrating	480	200	0.3	0.3	Infill
Weston Colville	460	190	0.3	0.3	Infill
Whaddon	530	230	0.3	0.3	Infill
Whittlesford	1,890	690	1.2	1.0	Group
Willingham	4,170	1,810	2.6	2.7	Minor Rural Centre
Wimpole	320	120	0.2	0.2	Infill
Total	157,470	66,540	100	100	

Ward	Employment / Jobs	% Employment / Jobs
Balsham	800	0.9
Bar Hill	3,500	4.1
Barton	1,000	1.2
Bassingbourn	1,500	1.8
Bourn	4,500	5.3
Caldecote	1,000	1.2
Comberton	400	0.5
Cottenham	3,000	3.5
Duxford	1,750	2.1
Fowlmere and Foxton	900	1.1

Fulbourn	3,500	4.1
Gamlingay	1,250	1.5
Girton	1,000	1.2
Hardwick	400	0.5
Harston and Hauxton	1,250	1.5
Haslingfield and The Eversdens	450	0.5
Histon and Impington	5,000	5.9
Linton	1,500	1.8
Longstanton	1,500	1.8
Melbourn	3,500	4.1
Meldreth	1,250	1.5
Milton	11,000	12.9
Orwell and Barrington	700	0.8
Papworth and Elsworth	4,000	4.7
Sawston	2,500	2.9
Swavesey	2,000	2.3
Teversham	2,500	2.9
The Abingtons	10,000	11.7
The Mordens	500	0.6
The Shelfords and Stapleford	3,000	3.5
The Wilbrahams	1,750	2.1
Waterbeach	5,000	5.9
Whittlesford	1,750	2.1
Willingham and Over	1,500	1.8
Total	85,150	100

Amount and Location of Committed Housing

Amount

The amount of housing committed in Greater Cambridge is set out in the Greater Cambridge housing trajectory (April 2020). The housing trajectory records annual housing completions anticipated from adopted allocations, sites with planning permission and the windfall allowance from 1 April 2019 to 31 March 2033. The housing trajectory also highlights the number of remaining dwellings that will be

delivered post 2033 from the adopted allocations and sites with planning permission, where the site is not wholly completed at 31 March 2033.

Anticipated housing completions are only included in the housing trajectory for those sites that have been assessed as either deliverable and / or developable based on the definitions in the glossary of the National Planning Policy Framework (NPPF, February 2019). The housing trajectory also applies lapse rates for non-delivery to some types of site, and maximum annual delivery rates to other types of site.

Using anticipated housing completions from the housing trajectory to estimate the amount of housing committed in Greater Cambridge therefore provides a more conservative estimate of housing commitments than simply adding up the number of dwellings committed on extant allocations and planning permissions.

The Greater Cambridge housing trajectory (April 2020) records that 25,325 dwellings (net) are anticipated to be completed in Greater Cambridge between 1 April 2019 and 31 March 2033 on adopted allocations and sites with planning permission, with 1,528 dwellings anticipated to be completed in 2019-2020.

Anticipated completions for 1 April 2033 to 31 March 2041 from adopted allocations and sites with planning permission can be predicted from existing information. It can be assumed that the delivery rates of each site not wholly completed by 31 March 2033 will continue as anticipated for pre-2033, until the site is wholly delivered. This results in the following anticipated annual completions:

	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	TOTAL: 2033-2041
Cambridge allocations, post 2033	216	0	0	0	0	0	0	0	216
Northstowe	250	250	250	250	250	250	250	250	2,000
Waterbeach New Town	250	250	250	250	250	250	250	250	2,000

Bourn Airfield New Village	150	150	150	150	150	150	150	150	1,200
Cambourne West	150	150	150	150	150	80	0	0	830
Total	1,016	800	800	800	800	730	650	650	6,246

Using these assumptions, 6,246 dwellings (net) are therefore anticipated to be completed in Greater Cambridge between 1 April 2033 and 31 March 2041 on adopted allocations and sites with planning permission.

The new plan period will start on 1 April 2020, and therefore the housing completions for 2019-2020 need to be deducted from the commitments. The Councils have assumed that housing completions for 2019-2020 will be 1,528 dwellings as anticipated in the Greater Cambridge housing trajectory (April 2020).

Therefore for the plan period of 2020-2041, it is anticipated that 30,043 dwellings (net) will be delivered in Greater Cambridge from housing commitments consisting of adopted allocations and sites with planning permission.

However, within this, there are twelve adopted allocations in Cambridge¹³ that are anticipated to deliver 736 dwellings as they have been assessed as being developable, but which have not yet shown any real progress towards delivery. A review of all the adopted allocations that have not made progress towards delivery will be undertaken as part of the preparation of the Greater Cambridge Local Plan.

Also, this does not take account of any dwellings from the outline planning application (with a planning committee resolution to grant planning permission) for up to 1,500

¹³ The Paddocks Trading Estate (site R7, 123 dwellings), 379-381 Milton Road (site M1, 95 dwellings), BT telephone exchange and car park, Long Road (site R14, 76 dwellings), Willowcroft (site R2, 78 dwellings), Travis Perkins (site R9, 43 dwellings), Henry Giles House (site R4, 48 dwellings), Camfields Resource Centre and Oil Depot (site R5, 35 dwellings), 149 Cherry Hinton Road and Telephone Exchange (site R8, 33 dwellings), Horizon Resource Centre (site R11, 40 dwellings), Cambridge Professional Development Centre (site R16, 67 dwellings), 82-88 Hills Road and 57-63 Bateman Street (site M5, 20 dwellings), and 315-349 Mill Road and Brookfields (site R21, 78 dwellings)

dwellings at the Wellcome Genome Campus, as the Councils did not have sufficient evidence to assess this as deliverable or developable for the housing trajectory.

For the purposes of testing options through the plan-making process it is considered appropriate to rely upon (and therefore include in the baseline for all options) commitments that have reasonable certainty of delivery. In this context, there would seem to be uncertainty of delivery within the plan period for the 736 allocated dwellings that have made little progress and there would seem to be reasonable certainty of delivery within the plan period for the 1,500 dwellings at the Wellcome Campus with a resolution to grant planning permission.

As a result, and for the purposes of considering the strategic spatial options for testing, the Councils have excluded the anticipated delivery from the adopted Cambridge allocations where no progress has been made and included the anticipated delivery from the Wellcome Genome Campus development in the commitments. This results in the following anticipated housing delivery:

Anticipated Completions 2020-2033	Anticipated Completions 2033-2041	Cambridge allocations, with no progress towards delivery	Wellcome Genome Campus	TOTAL
23,797	6,246	-736	1,500	30,807

Distribution

The distribution of housing committed in Greater Cambridge is as set out in the table below, based on the Greater Cambridge Housing Trajectory (April 2020) and assumed delivery from sites not wholly completed by 31 March 2033 but committed and anticipated to continue delivering until 2041 (as outlined above).

The housing trajectory includes a discount for non-delivery on certain types of sites of 9 dwellings or less. Therefore where this discount has been applied to the total of these sites in the housing trajectory, for the purposes of this paper, the discount has

been applied to the total of each type of site for each village / parish, and the numbers rounded up or down where necessary to ensure that the overall total matches the housing trajectory.

From the housing trajectory, it is anticipated that 1,528 dwellings will be completed in 2019-2020. The anticipated completions for each of the specified sites in the housing trajectory are based on a survey in February 2020, and therefore have been taken to be the total completions anticipated for 2019-2020. For the small sites anticipated to be completed in 2019-2020, for the purposes of this paper, the same proportion of anticipated completions compared to overall completions for that source of supply has been applied to the total from each source for each parish / village, and the numbers rounded up or down where necessary to ensure that the overall total matches the housing trajectory.

	Commitments – 10 or more dwellings	Commitments – 9 or less dwellings	Of which, assumed completions 2019-2020	Additions and Subtractions of Sites compared to Housing Trajectory (April 2020)	Therefore, total for 2020-2041
Cambridge Urban Area	2,413	485	204	-736 ¹⁴	1,958
North West Cambridge (University Site)	2,163		22		2,141
NIAB (Darwin Green)	2,578		100		2,478
Cambridge East - North of Newmarket Road	1,300		0		1,300

¹⁴ This relates to the twelve adopted Cambridge allocations which have not yet shown any real progress towards delivery, as outlined above.

	Commitments – 10 or more dwellings	Commitments – 9 or less dwellings	Of which, assumed completions 2019-2020	Additions and Subtractions of Sites compared to Housing Trajectory (April 2020)	Therefore, total for 2020-2041
Cambridge East - North of Cherry Hinton	1,200		0		1,200
Cambridge East - Land at Coldhams Lane	22		22		0
North of Worts Causeway	200		0		200
South of Worts Causeway	230		0		230
Bell School	32		32		0
Clay Farm	244		93		151
Trumpington Meadows	374		72		302
Northstowe	5,750		246		5,504
Waterbeach New Town	4,900		0		4,900
Bourn Airfield New Village	2,630		0		2,630
Cambourne West	2,590		0		2,590
Arrington		6	2		4
Babraham		3	0		3
Balsham	63	4	30		37
Bar Hill	40		0		40
Barrington	220	14	3		231
Bartlow		2	0		2
Barton		5	2		3

	Commitments – 10 or more dwellings	Commitments – 9 or less dwellings	Of which, assumed completions 2019-2020	Additions and Subtractions of Sites compared to Housing Trajectory (April 2020)	Therefore, total for 2020-2041
Bassingbourn-cum-Kneesworth	69	25	26		68
Bourn		5	0		5
Caldecote	176	33	60		149
Cambourne	93	3	34		62
Carlton		3	0		3
Castle Camps	10	7	2		15
Caxton		14	2		12
Comberton ¹⁵	90	3	0		93
Conington		5	2		3
Coton		3	0		3
Cottenham	508	29	56		481
Croydon		6	3		3
Dry Drayton	10	8	1		17
Duxford		4	2		2
Elsworth		4	0		4
Eltisley		2	0		2
Fen Ditton		1	0		1
Fen Drayton		29	6		23
Fowlmere		11	3		8
Foxton	22	8	2		28
Fulbourn	337	9	16		330
Gamlingay	88	35	8		115
Girton	8	13	1		20
Graveley		1	0		1
Great Abington	52	23	42		33

¹⁵ This includes the allocation at Bennell Farm that is in the parish of Toft

	Commitments – 10 or more dwellings	Commitments – 9 or less dwellings	Of which, assumed completions 2019-2020	Additions and Subtractions of Sites compared to Housing Trajectory (April 2020)	Therefore, total for 2020-2041
Great and Little Chishill		5	0		5
Great Eversden		3	1		2
Great Shelford & Stapleford		36	10		26
Great Wilbraham		2	0		2
Guilden Morden	0	9	2		7
Hardwick	242	5	53		194
Harlton		9	3		6
Harston		13	8		5
Haslingfield		5	0		5
Hatley		1	0		1
Hauxton	50	3	52		1
Hinxton	0		0	+1,500 ¹⁶	1,500
Histon & Impington	73	18	5		86
Horningsea		2	0		2
Horseheath		3	0		3
Ickleton		1	-1		2
Kingston		5	1		4
Knapwell		1	0		1
Landbeach		4	1		3
Linton	97	19	4		112
Litlington	21	6	1		26
Little Abington		0	0		0

¹⁶ This relates to the Wellcome Genome Campus development.

	Commitments – 10 or more dwellings	Commitments – 9 or less dwellings	Of which, assumed completions 2019-2020	Additions and Subtractions of Sites compared to Housing Trajectory (April 2020)	Therefore, total for 2020-2041
Little Eversden		3	0		3
Little Gransden		7	2		5
Little Shelford		1	0		1
Little Wilbraham		4	2		2
Lolworth		2	0		2
Longstanton	0	15	4		11
Longstowe		4	0		4
Melbourn	256	9	79		186
Meldreth	40	34	4		70
Milton		11	1		10
Newton		2	2		0
Oakington and Westwick		9	2		7
Orwell	49	10	18		41
Over	99	18	7		110
Papworth Everard	61	1	0		62
Rampton		4	0		4
Sawston ¹⁷	471	17	50		438
Shepreth	25	9	2		32
Shingay-cum- Wendy	10	0	0		10
Shudy Camps		5	2		3
Steeple Morden		6	0		6
Stow-cum-Quy		3	0		3

¹⁷ This includes the two allocations north and south of Babraham Road that are in the parish of Babraham

	Commitments – 10 or more dwellings	Commitments – 9 or less dwellings	Of which, assumed completions 2019-2020	Additions and Subtractions of Sites compared to Housing Trajectory (April 2020)	Therefore, total for 2020-2041
Swavesey	201	19	18		202
Tadlow		2	0		2
Teversham		4	-1		5
Thriplow		3	0		3
Toft		3	0		3
Waterbeach	38	26	27		37
West Wickham		7	2		5
West Wrating		3	0		3
Weston Colville		4	1		3
Whaddon		1	0		1
Whittlesford	0	10	6		4
Willingham	180	33	65		148
Wimpole		4	1		3
TOTAL	30,325	1,246	1,528	764	30,807

	Percentage of Commitments	Percentage of Commitments (with additions and subtractions)
Cambridge Urban Area	9.0%	6.4%
Edge of Cambridge	26.6%	26.0%
New Settlements and Cambourne West	52.0%	55.6% (including Wellcome Genome Campus development)
Rural Area	12.4%	12.1%

Appendix 6: Delivery assumptions for housing

Introduction

In preparing the [Greater Cambridge Housing Trajectory and Five Year Housing Land Supply – Main Document and Annex \(November 2019\)](#), the Councils developed typical assumptions for lead-in times and build-out rates of different sites based on their location and size.

A Housing Delivery Study is being commissioned to independently review and where necessary provide updates / revisions to the Councils’ typical assumptions for lead-in times and build out rates.

The following sections provide detailed information on the lead-in times, build out rates and delivery assumptions used for this paper.

Lead-In Times

The typical assumptions for lead-in times as set out in the Greater Cambridge Housing Trajectory and Five Year Housing Land Supply – Main Document and Annex (November 2019) were developed based on the planning application process (outline and reserved matters, full or prior approval) chosen for the site and the type of site (strategic site or non-strategic site). These typical assumptions do not work for this paper, as at this stage the planning application process that will be chosen is not known.

Strategic Sites – New Settlements

For the purposes of this paper, the Councils have considered the actual and proposed lead-in times of the existing committed five new settlements.

	Northstowe	Waterbeach New Town	Bourn Airfield New Village	Cambourne	Cambourne West
Dwellings	up to 10,000	8,000-9,000	approximately 3,500	3,000 plus 10%	up to 2,350
Allocated	Jul-07	Sep-18	Sep-18	Feb-04	Sep-18

Outline planning application submitted	Feb-12	Feb-17	Sep-18	Jan-92	Dec-14
Outline planning application resolved to grant	Oct-12	May-19			Aug-17
Outline planning application granted (decision notice issued)	Apr-14	Sep-19		Apr-94	Dec-17
First RM planning application for housing submitted	Jun-16	Dec-20		Mar-98	Dec-19
First RM planning application for housing granted	Sep-16			Jul-98	Jun-20
First dwelling(s) under construction	Mar-17	Apr-21	Jun-21		Sep-20
First dwelling(s) completed	Mar-17	Jun-21	Jan-22	Jun-99	Mar-21
Allocated to first completion (in years)	9.7	2.8	3.3	n/a	2.5
Outline planning application submitted to first completion (in years)	5.1	4.3	3.3	7.4	6.3

When considering all five new settlements collectively, and also the average of from allocation to first completion and outline planning application to first completion (as for some the planning application was submitted ahead of adoption of the allocation), this analysis concludes that the typical lead-in time for a new settlement from allocation to first completions on site is 5 years (rounded to the nearest half year).

Strategic Sites – Edge of Cambridge sites

For the purposes of this paper, the Councils have considered the actual and proposed lead-in times of the existing committed eight strategic sites on the edge of Cambridge.

	North West Cambridge	NIAB / Darwin Green	Cambridge East - North of Newmarket Road	Cambridge East - North of Cherry Hinton	Bell School	Clay Farm	Glebe Farm	Trumpington Meadows
Dwellings	up to 3,000	1,593	up to 1,300	max of 1,200	max 347	up to 2,300	286	approximately 1,200
Allocated	Oct-09	Jul-06	Feb-08	Sep-18	Jul-06	Jul-06	Jul-06	Jul-06
Outline planning application submitted	Sep-11	Dec-06	Dec-13	Mar-18	Aug-06	Jun-07		Dec-07
Outline planning application resolved to grant	Aug-12	Jul-10	Apr-16	May-20	Jun-08	May-08		Feb-08
Outline planning application granted (decision notice issued)	Feb-13	Feb-15	Nov-16		Dec-10	Aug-10		Oct-09
First RM planning application for housing submitted	Dec-13	Sep-15	Mar-19	Oct-21	Dec-13	Feb-11	Dec-09	Jan-11
First RM planning application for housing granted	Feb-14	May-16	Sep-19	Mar-22	Apr-14	Jul-11	Aug-10	Jul-11
First dwelling(s) under construction	Mar-16	Mar-19	Mar-20		Mar-15	Mar-12		Mar-12
First dwelling(s) completed	Mar-18	Mar-19	Sep-20	Mar-23	Mar-16	Mar-13	Mar-13	Mar-13
Allocated to first completion (in years)	8.4	12.7	12.6	4.5	9.7	6.7	6.7	6.7

Outline planning application submitted to first completion (in years)	6.5	12.3	6.8	5.0	9.6	5.8	3.3	5.3
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When considering all eight edge of Cambridge sites collectively, and also the average of from allocation to first completion and outline planning application to first completion (as for some the planning application was submitted ahead of adoption of the allocation), this analysis concludes that the typical lead-in time for a strategic edge of Cambridge site from allocation to first completions on site is 7.5 years (rounded to the nearest half year).

Non-Strategic Sites

For the purposes of this paper, the Councils have used the data on lead-in times from the 43 non-strategic sites across Greater Cambridge (as listed in the Greater Cambridge Housing Trajectory – Main Document (November 2019)), to develop an overall lead-in time for any non-strategic site from validation of planning application to first completions on site. The data was not sufficiently different between Cambridge and South Cambridgeshire to need two separate typical assumptions.

This analysis concludes that the typical lead-in time for a non-strategic site from validation of its planning application to first completions on site is 3 years.

Analysis of the lead-in time from allocation of a site to a planning application being submitted does not allow a typical assumption for this lead-in time to be developed. Some Cambridge allocations have been adopted in more than one plan before coming forwards, and on a number of South Cambridgeshire allocations the planning application was submitted ahead of the Local Plan being adopted.

Within a 21 year plan period, with hopefully at least 15 years remaining from adoption of the Local Plan, it is reasonable to assume that any non-strategic sites will be wholly delivered within the plan period.

Build-out Rates

Strategic Sites

For the strategic sites, the Councils published evidence relating to average annual housing completions for new settlements during the preparation and examination of the recently adopted Local Plans. This evidence was used to inform the Greater Cambridge housing trajectory included in the adopted Local Plans. The Inspectors concluded in their reports that the “Council’s assessment of supply is reasonable and evidence-based” and in relation to Waterbeach New Village and Bourn Airfield New Village, the Inspectors concluded in their reports that “the Council is correct to assume a modest delivery rate for the purposes of the housing trajectory”.

For the housing trajectory in the adopted Local Plan, the Councils used an annual completion rate for new settlements of up to 250 dwellings for Waterbeach New Town and Northstowe, and a slightly higher combined annual completion rate of up to 300 dwellings for Bourn Airfield New Village and Cambourne West, given their scale and separation but also proximity to each other.

The Councils have since applied these typical assumptions on build out rates to the strategic sites on the edge of Cambridge, with each of the strategic sites being anticipated to deliver up to 250 dwellings a year, unless the developer / housebuilder has indicated a lower build out rate.

However, higher annual completions have been recorded on the edge of Cambridge, in particular at Cambridge Southern Fringe across the developments of Trumpington Meadows, Glebe Farm, Clay Farm and Bell School. These developments include a mixture of flats and houses.

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Trumpington Meadows	2	141	141	67	103	89	123	148
Clay Farm	0	16	271	393	149	467	539	109

Bell School	0	0	0	0	21	122	45	50
Glebe Farm	0	55	112	86	34	30	0	0
TOTAL	2	212	524	546	307	708	707	307

During the last eight years, Cambridge Southern Fringe has delivered over 250 dwellings in six of those years, and over 500 dwellings in four of those years. To deliver a high housing requirement for Greater Cambridge and a sustainable development strategy by 2041, higher build out rates than previously used as typical assumptions will be needed. The Councils have therefore assumed for the purposes of this paper that build out rates on strategic sites and new settlements can be doubled from the historic assumptions of up to 250 dwellings a year to up to 500 dwellings a year. The Housing Delivery Study will confirm whether this is a reasonable assumption and whether these levels of completions can be achieved on all strategic sites.

Non-strategic Sites

Typical assumptions for build out rates for non-strategic sites were developed as set out in the Greater Cambridge Housing Trajectory and Five Year Housing Land Supply – Main Document and Annex (November 2019) and are as follows:

	Size	Peak dwellings per year	Average dwellings per year	Number of years of completions
Cambridge	10-49	40	12	1
	50-99	99	90	1
	100-199	150	82	2
South Cambridgeshire	10-49	39	15	1
	50-99	80	38	2
	100-199	90	60	3

Delivery Assumptions

New Sites / Broad Locations

The Greater Cambridge Local Development Scheme (July 2020) sets out two alternative timetables for the submission of the Greater Cambridge Local Plan, depending on whether it is submitted alongside / including the North East Cambridge Area Action Plan, or ahead of the Area Action Plan. The latest anticipated submission date is spring 2024. The timetable for the examination of the Greater Cambridge Local Plan and the receipt of the Inspector’s Report is subject to the Inspector’s own timetable, and therefore a date of adoption for the Local Plan is not provided. For the purposes of working out anticipated delivery within the plan period for this paper, it has been assumed that the Greater Cambridge Local Plan will be adopted in autumn 2025.

Using the lead-in times and build out rates set out above, and assuming the Greater Cambridge Local Plan is adopted in autumn 2025, results in the following delivery assumptions for any new settlements and edge of Cambridge sites:

	Lead-In Time	First Completions	Annual Completion Rate	Total Completed by 2041
Cambridge Airport	7.5 years	Spring 2033 (2033-2034)	Up to 250 dwellings, historic delivery rates	1,935 dwellings (rounded down to 1,900 dwellings)
Cambridge Airport	7.5 years	Spring 2033 (2033-2034)	Up to 500 dwellings, higher delivery rates	3,870 dwellings (rounded down to 3,800 dwellings)
Edge of Cambridge site / broad location of up to 3,900 dwellings	7.5 years	Spring 2033 (2033-2034)	Up to 250 dwellings, historic delivery rates	1,935 dwellings (rounded down to 1,900 dwellings)
Edge of Cambridge site / broad location of	7.5 years	Spring 2033 (2033-2034)	Up to 500 dwellings, higher delivery rates	3,870 dwellings (round down to 3,800 dwellings)

up to 3,900 dwellings				
New Settlement	5 years	Autumn 2030 (2030-2031)	Up to 250 dwellings, historic delivery rates	2,560 dwellings (rounded down to 2,500 dwellings)
New Settlement	5 years	Autumn 2030 (2030-2031)	Up to 500 dwellings, higher delivery rates	5,120 dwellings (rounded down to 5,100 dwellings)

North East Cambridge as an area does not fit within the categories for which the Councils have developed lead-in times and build-out rates. There are no other similar sites completed or committed within Cambridge Urban Area from which to develop assumptions, and therefore as a strategic site within the urban area but at its edge, the Councils consider it reasonable to apply the lead-in times and build out rates for strategic sites on the edge of Cambridge. This results in the first delivery assumption set out in the table below.

An Area Action Plan is being prepared for the North East Cambridge area, and the draft plan (July 2020) includes a housing trajectory for the area. This housing trajectory in the draft Area Action Plan assumes much higher annual build out rates than historically assumed for strategic sites and assumes delivery soon after adoption of the Area Action Plan. The draft Area Action Plan explains that it takes account of ongoing engagement with landowners / developers, current expectations of the housing and employment market, efficient building processes such as modular housing, the housing types to be delivered, and housing tenures which support quick delivery such as build to rent. The draft Area Action Plan also highlights that the Councils are not advocating the housing trajectory as set out, but are instead seeking comments on it. Using this housing trajectory and making some assumptions for 2040-2041 results in the second delivery assumption set out in the table below.

	Lead-In Time	First Completions	Annual Completion Rate	Total Completed by 2041
North East Cambridge	7.5 years	Spring 2033 (2033-2034)	Up to 250 dwellings, historic delivery rates	1,935 dwellings (rounded down to 1,900 dwellings)

North East Cambridge	as per housing trajectory in Draft Area Action Plan (July 2020)	assumed to be 2025-2026	as per housing trajectory	8,070 dwellings ¹⁸ (rounded down to 8,000 dwellings)
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Existing New Settlements

As the Councils consider that it is reasonable to assume for the purposes of this paper that any new strategic sites and new settlements will be able to deliver up to 500 dwellings a year, the Councils also consider that these build out rates will be able to be achieved on existing committed new settlements. Assuming higher annual build out rates of double existing anticipated completions¹⁹ on each of the new settlements, after the end of the current (2020-2025) five year period, results in the following additional capacity:

	Already included in Commitments	ADDITIONAL capacity from Existing Commitments, if higher build out rates
Northstowe	5,750 [phase 1 = 1,069 dwellings, phases 2 & 3 = 4,681 dwellings]	3,819 [phases 2 & 3 only]
Waterbeach New Town	4,900	4,000
Bourn Airfield New Village	2,630	870
Cambourne / Cambourne West	2,590	0
Total	15,870	8,689 (rounded down to 8,600)

¹⁸ The housing trajectory in the draft Area Action Plan only considers a plan period to 2040 and indicates that 8,000 dwellings could be delivered by then. For the purposes of this paper, it has been assumed that the 2040+ anticipated dwellings are delivered evenly over the five years from 2040 to 2045 and therefore that a further 70 dwellings could be delivered in 2040-2041, resulting in 8,070 dwellings anticipated by 2041.

¹⁹ Existing anticipated completions of up to 250 dwellings a year each for Northstowe (phases 2 & 3) and Waterbeach New Town, therefore double to up to 500 dwellings a year each. Existing anticipated completions of up to 150 dwellings a year each for Bourn Airfield New Village and Cambourne West, therefore double to up to 300 dwellings a year each.

Existing Strategic Sites on Edge of Cambridge

The Councils do not consider that it is reasonable to assume that build out rates for existing strategic sites on the edge of Cambridge can be increased. This is because there is already more than one strategic site being delivered with anticipated completions of up to 250 dwellings a year in each edge of Cambridge broad location²⁰, and therefore each broad location is already anticipated to deliver high annual completions.

²⁰ For example, in north west Cambridge, there are two sites - the university site and the NIAB / Darwin Green development, and in east Cambridge, there are two sites - land north of Newmarket Road and land north of Cherry Hinton.

Appendix 7: Identifying the number and location of jobs for modelling purposes

Introduction

The Greater Cambridge Employment Land Review & Economic Evidence Base Study (GL Hearn, with SQW, Cambridge Econometrics, and Icen Projects, November 2020) (the ELR) explores in detailed the committed employment land supply, and quantitative and qualitative issues regarding land for different types of employment.

For the plan period of 2020-2041, it is anticipated that 459,319 sqm (net) of business floorspace will be delivered in Greater Cambridge from business floorspace commitments consisting of adopted allocations and sites with planning permission. Adding the anticipated increase in business floorspace of 150,000 sqm from the outline planning application (with a planning committee resolution to grant planning permission) at the Wellcome Genome Campus results a baseline of 609,319 sqm (net) business floorspace for 2020-2041.

For the purposes of transport modelling, it is important that each modelled scenario includes the same total number of jobs and homes, in order that they can be directly comparable. It is also necessary to consider the distributions of jobs.

Allocations for employment land in Local Plans only account for a relatively small proportion of overall jobs – employment allocations are for jobs in the 'B' use classes (covering office, research and development and industrial uses). These don't currently account for the very significant proportion of jobs arising in other population-driven sectors such as shops, leisure and education, although as of September 2020 there has been a reorganisation of use classes including the introduction of Use Class E replacing Use Class B.

Establishing a baseline

As a first step, guided by the ELR, the split between ‘B’ use jobs and non ‘B’ use jobs was identified.

Requirement	Minimum	Medium	Maximum
Total jobs requirement	45,800	58,500	79,500
Jobs requirement in ‘B’ Uses	10,765	20,625	26,735

The non-B Jobs are largely guided by population growth, these were therefore left to the transport modelling team to consider as the model runs were developed.

The Councils have provided distributions of ‘B’ use jobs for each spatial option to the transport modelling team, for them to apply alongside standard assumptions for population driven non ‘B’ use job sectors. Due to the significant level of existing commitments, the Councils have largely distributed jobs to those locations, however for all growth level options and all spatial options a small number of jobs have been distributed to the new locations specific to the spatial option that is being tested.

The Councils do not have a trajectory for completions of business land or floorspace in the same way as they do for housing. Many strategic sites take a number of years to come forward, including crossing into subsequent plan periods. This can particularly be the case for new settlements. The housing trajectory anticipates that a number of the existing new settlements will continue to develop beyond 2041. For the purposes of transport modelling we have also assumed that not all the business land and floorspace will be delivered by that time either.

For the purposes of distributing ‘B use’ jobs, officers were guided by site by site information in the ELR, and as a starting point a list of 22 strategic sites were identified, with potential job numbers guided by planning application information or using floorspace to jobs densities. Initial assumptions on delivery were then applied to each site in terms of the amount of jobs anticipated in 2020-2041:

- the number of jobs anticipated at Waterbeach New Town, Northstowe (phases 2 & 3) and Bourn Airfield New Village is based on the proportion of homes anticipated,
- the change in the number of jobs anticipated at Clifton Road Industrial Estate is considered to be neutral as although the site is allocated for redevelopment, there are 'B' use jobs anticipated within the resulting mixed use development,
- the number of jobs anticipated at Cambridge Research Park, Landbeach, assumes delivery of the vacant plots that are subject to a pending outline planning application, and
- the number of jobs anticipated at Northstowe is based on the Economic Development Strategy submitted with the phase 3 outline planning applications, which includes updated 'B' use assumptions for the whole development.

This created a 'B' use jobs baseline for 2020-2041. As this number of 'B use' jobs was higher than that forecast for either the minimum or medium growth levels, and was only a few thousand jobs less than the maximum growth levels, and it is expected that new housing allocations or new settlements necessary to deliver the housing growth levels being considered would be accompanied by 'B' use jobs in new locations, officers have amended the anticipated delivery from these 22 sites for each growth level. However, these 22 sites are anticipated to deliver the same number of jobs for each of the 8 spatial options within a growth level.

For the maximum growth level, in addition to the assumptions already considered, a further reduction in anticipated new jobs delivery of 20% (from the baseline for 2020-2041) has been assumed on all sites except for on developments: within the North East Cambridge area; with the most recent permissions; and where an overall loss of jobs is anticipated. For the medium growth level, the same approach has been taken, however, a reduction in anticipated new jobs delivery of 40% (from the baseline for 2020-2041) rather than 20% has been assumed.

For the minimum growth level, more significant reductions to jobs delivery for each of the 22 sites have been assumed to enable jobs to be distributed alongside the new

locations for housing growth in each of the 8 spatial options. For those developments that have outline planning permission, an outline planning application pending or are allocated in the adopted Local Plans but do not yet have planning permission, a reduction in anticipated new jobs delivery of 60% (from the baseline for 2020-2041) has been assumed. For those developments with full planning permission or a prior approval permission, a reduction of 30% (from the baseline for 2020-2041) has been assumed. No reduction has been applied to any anticipated loss of existing jobs.

These assumptions result in the jobs distribution across existing commitments as set out in the table below:

Site / location	'B' use Jobs – baseline (all time)	'B' use Jobs – baseline (2020-2041)	'B' use Jobs – maximum (2020-2041)	'B' use Jobs – medium (2020-2041)	'B' use Jobs – minimum (2020-2041)
West Cambridge	6,000	2,000	2,000	2,000	800
Wellcome Trust Genome Campus, Hinxton	4,000	4,000	3,200	2,400	1,600
Cambourne Business Park	800	800	640	480	320
North West Cambridge (Eddington)	1,500	1,500	1,200	900	600
Former Spicers Site, Sawston (Huawei)	350	350	350	350	245
East of Peterhouse Technology Park, Cambridge (South Cambridgeshire Local Plan, Policy E/3)	1,600	1,600	1,280	960	640
Cambourne West	1,145	1,145	1,145	1,145	460
Waterbeach New Town	2,100	1,100	1,100	1,100	440
Cambridge East – North of Newmarket Road (Wing / Marleigh)	-465 (+85, -550)	-465 (+85, -550)	-465 (+85, -550)	-465 (+85, -550)	-515 (+35, -550)
Grant Park, Great Abington	1,200	1,200	960	720	480
Addenbrooke's Hospital and Biomedical Campus (including South	1,500	1,500	1,500	1,500	600

Site / location	'B' use Jobs – baseline (all time)	'B' use Jobs – baseline (2020- 2041)	'B' use Jobs – maximum (2020- 2041)	'B' use Jobs – medium (2020- 2041)	'B' use Jobs – minimum (2020- 2041)
Cambridgeshire Local Plan, Policy E/2)					
Cambridge Research Park, Landbeach	1,100	1,100	880	660	440
Northstowe	Phase 1 = 670, Phases 2 & 3 = 1,200	Phase 1 = 670, Phases 2 & 3 = 660	Phase 1 = 670, Phases 2 & 3 = 660	Phase 1 = 670, Phases 2 & 3 = 660	Phase 1 = 270, Phases 2 & 3 = 265
Bourn Airfield New Village	1,200	900	900	900	360
Clifton Road Industrial Estate area, Cambridge	0	0	0	0	-330
West of London Road, Pampisford	1,070 (+1,195, - 125)	1,070 (+1,195, - 125)	830 (+955, -125)	590 (+715, -125)	355 (+480, -125)
Station Road area, Cambridge	-370	-370	-370	-370	-370
Fulbourn Road West, Cambridge (Cambridge Local Plan, sites GB3 and GB4)	790	790	630	470	315
Cambridge Science Park	2,690	2,690	2,690	2,690	1,880
Nuffield Road Industrial Estate, Cambridge	-5	-5	-5	-5	-5
St Johns Innovation Centre, Cambridge	235	235	235	235	165
Cowley Road Industrial Estate, Cambridge	880	880	880	880	615
TOTAL	29,190	23,350	20,910	18,470	9,630

Delivery assumptions

The Councils do not have typical assumptions for anticipated delivery of 'B use' jobs from different types of developments (e.g. new settlements, edge of Cambridge sites). The following sections therefore provide information on the delivery

assumptions used for 'B use' jobs in the new locations for growth identified in each of the 8 spatial options in this paper.

Additional jobs from existing new settlements

For the maximum growth level, each of the 8 spatial options assumes that additional dwellings will be delivered by 2041 from the existing new settlements based on a higher (doubled) annual delivery rate. In the jobs baseline (as set out in the table above), the proportion of jobs anticipated on these existing new settlements by 2041 has been assumed based on the proportion of dwellings anticipated. Therefore, for the maximum growth level, in each of the 8 spatial options additional jobs need to be assumed to be consistent with the dwelling assumptions.

For the purposes of this paper and for the maximum growth level only, 1,840 additional jobs (in addition to those jobs already included in the table above) are anticipated by 2041 from the existing new settlements based on the assumption that each of these new settlements will be wholly completed by 2041:

- Northstowe (phases 2 & 3): 540 additional jobs
- Waterbeach New Town: 1,000 additional jobs
- Bourn Airfield New Village: 300 additional jobs

For the medium and minimum growth levels, the number of jobs assumed in the table above is the same proportion as the number of dwellings assumed at the existing annual delivery rates.

Jobs at new settlements

For any additional new settlements included in a spatial option, officers have assumed that a similar jobs provision will be provided at these new developments as is expected to be provided at the existing new settlements, with differing amounts based on the size of the new settlement.

Northstowe is anticipated to deliver 10,000 new homes and up to approx. 2,100 jobs in 'B uses'. Waterbeach New Town is anticipated to deliver 9,000 new homes and approx. 2,100 jobs in 'B uses', with Cambridge Research Park at Landbeach across the A10. Bourn Airfield New Village is anticipated to deliver 3,500 new homes and

approx. 1,200 jobs. Cambourne West is anticipated to deliver 2,350 new homes and approx. 1,145 jobs in 'B uses', with Cambourne Business Park and the existing settlement of Cambourne to the east.

For the purposes of this paper, a new settlement of 9,000 new homes is anticipated to deliver 2,500 new jobs in 'B uses' and a new settlement of 4,500 new homes is anticipated to deliver 1,500 new jobs in 'B uses'. The proportion of new jobs assumed at each new settlement by 2041 has been anticipated for each spatial option and each growth level (where they are included as a location for development) based on the proportion of new homes anticipated by 2041. However, a delay in the provision of jobs compared to homes is included as on new developments new business floorspace and therefore 'B use' jobs tend to be delivered after the first new homes have been completed and occupied.

Officers have assumed that 'B use' jobs provided at new settlements will largely be B1 uses, with a small proportion of B2 and B8 uses. For the purposes of this paper, the following split across the 'B uses' has been applied to new 'B use' jobs in new settlements:

- B1 use: 85% of the overall 'B use' jobs.
- B2 and B8 uses: 15% of the overall 'B use' jobs, with 75% of these jobs being B2 use and 25% being B8 use.

Jobs at Cambridge Airport

Officers had assumed that the 2,000 existing 'B use' jobs would be lost, and that 5,000 new 'B use' jobs will be re-provided within the new development (based on the adopted Cambridge East Area Action Plan). However, only 675 'B use' jobs are recorded on this site in the transport model, and therefore for the purposes of this paper this site is assumed to lose up to 675 'B use' jobs and re-provide up to 5,000 'B use' jobs.

For all spatial options and for all growth levels, where Cambridge Airport is included as a location for development, it is assumed that all existing jobs will be lost, even where only some new jobs are assumed. This is because it is assumed that the

existing airport uses on the site will all need to be removed before any new development can take place.

The proportion of new jobs assumed at Cambridge Airport by 2041 has been anticipated for each spatial option and each growth level (where it is included as a location for development) based on the proportion of new homes anticipated by 2041. However, a delay in the provision of jobs compared to homes is included as on new developments new business floorspace and therefore 'B use' jobs tend to be delivered after the first new homes have been completed and occupied.

Officers have assumed that 'B use' jobs provided at Cambridge Airport will largely be B1 uses, with a small proportion of B2 and B8 uses. For the purposes of this paper, the following split across the 'B uses' has been applied to new 'B use' jobs at Cambridge Airport:

- B1 use: 85% of the overall 'B use' jobs.
- B2 and B8 uses: 15% of the overall 'B use' jobs, with 75% of these jobs being B2 use and 25% being B8 use.

Jobs at North East Cambridge

For North East Cambridge, officers have assumed that this site can deliver the jobs anticipated by the draft North East Cambridge Area Action Plan (July 2020). The draft Area Action Plan anticipates that 20,000 jobs will be provided within the development from the 234,500 sqm of B1 floorspace anticipated. This is in addition to the existing commitments on the Cambridge Science Park and other industrial estates that fall within the Area Action Plan boundary, which are included in the jobs baseline as set out in the table above.

In order for the jobs numbers to balance in each of the spatial options, the anticipated level of jobs from this site has been reduced more than for other locations given the significant number of jobs anticipated at North East Cambridge, and the long term nature of this site. A delay in the provision of jobs compared to homes is included as on new developments new business floorspace and therefore 'B use' jobs tend to be delivered after the first new homes have been completed and occupied.

Officers have assumed that 'B use' jobs provided at North East Cambridge will be all B1 uses, based on the draft North East Cambridge Area Action Plan (July 2020). The area will include B2 and B8 uses, but no additional jobs will be provided, although existing businesses may be re-located within the area.

Jobs at Green Belt broad locations

For spatial option 3 (Edge of Cambridge: Green Belt), where all new development is proposed in broad locations on the edge of Cambridge and in the Green Belt, officers have assumed that new 'B use' jobs will be provided in these broad locations alongside the new homes. For other spatial options that include these broad locations on the edge of Cambridge and in the Green Belt, officers have assumed that no new 'B use' jobs will be provided alongside the new homes as there are existing 'B use' jobs within Cambridge and on nearby employment sites. However, given the significant level of new homes proposed in these broad locations in spatial option 3, it is anticipated that 'B use' jobs will be provided in the same way as 'B use' jobs are provided in new settlements and will be provided as part of Eddington (North West Cambridge), North East Cambridge, and Cambridge East.

Officers have assumed that 'B use' jobs provided in the broad locations on the edge of Cambridge and in the Green Belt will be all B1 uses, due to the need for any 'B use' developments to be compatible with both the existing and proposed residential uses in these locations. There is not the same scope as within new settlements to locate incompatible 'B uses' (such as B2 and B8 uses) away from residential uses.

Jobs in villages

For spatial option 5 (Villages), where all the development is proposed in new developments within or on the edge of villages, officers have assumed that new 'B use' jobs will be provided in the villages alongside the new homes. For other spatial options that include development in villages, officers have assumed that no new 'B use' jobs will be provided alongside the new homes as there are existing 'B use' jobs within villages and on nearby employment sites. However, given the significant level of new homes proposed in the villages in spatial option 5, it is anticipated that additional 'B use' jobs will be provided either within a development or through new or expanded employment sites.

Officers have assumed that ‘B use’ jobs provided in the villages will largely be B1 uses, with a small proportion of B2 and B8 uses. For the purposes of this paper, the following split across the ‘B uses’ has been applied:

- B1 use: 85% of the overall ‘B use’ jobs.
- B2 and B8 uses: 15% of the overall ‘B use’ jobs, with 75% of these jobs being B2 use and 25% being B8 use.

Distribution of ‘B’ use jobs in the spatial options

The following tables set out the distribution of the ‘B’ use jobs to find in the new growth locations for each of the spatial options, once the existing committed jobs have been deducted as follows:

<i>Calculation / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Medium: 2020-2041</i>	<i>Maximum: 2020-2041</i>
Total ‘B’ use jobs to find	10,765	20,625	26,735
Jobs from already committed locations (see table above)	9,630	18,470	20,910
Committed new settlements - additional delivery (as described above)	N/A	N/A	1,840
Balance to be made in new allocations	1,135	2,155	3,985

Notes:

- Total ‘B’ use jobs to find: this is the ‘B’ use jobs requirement 2020-2041, derived from Greater Cambridge Employment Land Review.
- Jobs from already committed locations: this is the ‘B use’ jobs baseline for each of the growth level options as set out above.
- Committed new settlements - additional delivery: as set out above, when the higher delivery rates assumption is incorporated into the maximum growth

scenario for all options, a further 1,840 jobs could be delivered from the existing committed new settlements by 2041.

- Balance to be made in new allocations: this is the balance of 'B' use jobs that has been distributed to the new growth locations.

Spatial Scenario 1: Focus on Densification of existing urban areas

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	0	0	0	0	0	0
North East Cambridge	1,135	20,000	2,580	20,000	3,910	20,000
Cambridge Airport (safeguarded land)	0	0	-425	4,325	75	4,325
Green Belt Fringe	0	0	0	0	0	0
New settlements	0	0	0	0	0	0
Villages Total	0	0	0	0	0	0
Total	1,135	20,000	2,155	24,325	3,985	24,325

Spatial Scenario 2: Focus on Edge of Cambridge: outside Green Belt

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	0	0	0	0	0	0
North East Cambridge	1,560	20,000	1,680	20,000	2,310	20,000
Cambridge Airport (safeguarded land)	-425	4,325	-425	4,325	575	4,325
Green Belt Fringe	0	0	0	0	0	0
New settlements	0	0	900	3,000	1,100	4,000
Villages Total	0	0	0	0	0	0
Total	1,135	24,325	2,155	27,325	3,985	28,325

Spatial Scenario 3: Focus on Edge of Cambridge: Green Belt

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0
Green Belt Fringe	1,135	1,135	2,155	2,155	3,985	3,985
New settlements	0	0	0	0	0	0
Villages Total	0	0	0	0	0	0
Total	1,135	1,135	2,155	2,155	3,985	3,985

Spatial Scenario 4: Focus on New Settlements

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0
New settlements	1,135	3,000	2,155	8,000	3,985	9,000
Villages Total	0	0	0	0	0	0
Total	1,135	3,000	2,155	8,000	3,985	9,000

Spatial Scenario 5: Focus on Dispersal: Villages

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	0	0	0	0	0	0
North East Cambridge	0	0	0	0	0	0
Cambridge Airport (safeguarded land)	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0
New settlements	0	0	0	0	0	0
Villages Total	1,135	1,135	2,155	2,155	3,985	3,985
Total	1,135	1,135	2,155	2,155	3,985	3,985

Spatial Scenario 6: Focus on Public transport corridors

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	0	0	0	0	0	0
North East Cambridge	655	20,000	1,705	20,000	3,110	20,000
Cambridge Airport (safeguarded land)	0	0	0	0	0	0
Green Belt Fringe	0	0	0	0	0	0
New settlements	480	1,500	450	2,500	875	2,500
Villages Total	0	0	0	0	0	0
Total	1,135	21,500	2,155	22,500	3,985	22,500

Spatial Scenario 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	0	0	0	0	0	0
North East Cambridge	0	0	0	0	2,410	20,000
Cambridge Airport (safeguarded land)	0	0	0	0	575	4,325
Green Belt Fringe	0	0	0	0	0	0
New settlements	1,135	1,500	540	1,500	1,000	2,500
Villages Total	0	0	1,615	1,615	0	0
Total	1,135	1,500	2,155	3,115	3,985	26,325

Spatial Scenario 8: Expanding a growth area around transport nodes

<i>Source of supply / Growth Level</i>	<i>Minimum: 2020-2041</i>	<i>Minimum: All time</i>	<i>Medium: 2020-2041</i>	<i>Medium: All time</i>	<i>Maximum: 2020-2041</i>	<i>Maximum: All time</i>
Cambridge urban area	0	0	0	0	0	0
North East Cambridge	0	0	1,615	20,000	2,410	20,000
Cambridge Airport (safeguarded land)	0	0	0	0	575	4,325
Green Belt Fringe	0	0	0	0	0	0
New settlements	1,135	1,500	540	1,500	1,000	2,500
Villages Total	0	0	0	0	0	0
Total	1,135	1,500	2,155	21,500	3,985	26,325

Appendix 8: Baseline, opportunities and constraints mapping

Strategy options methodology mapping

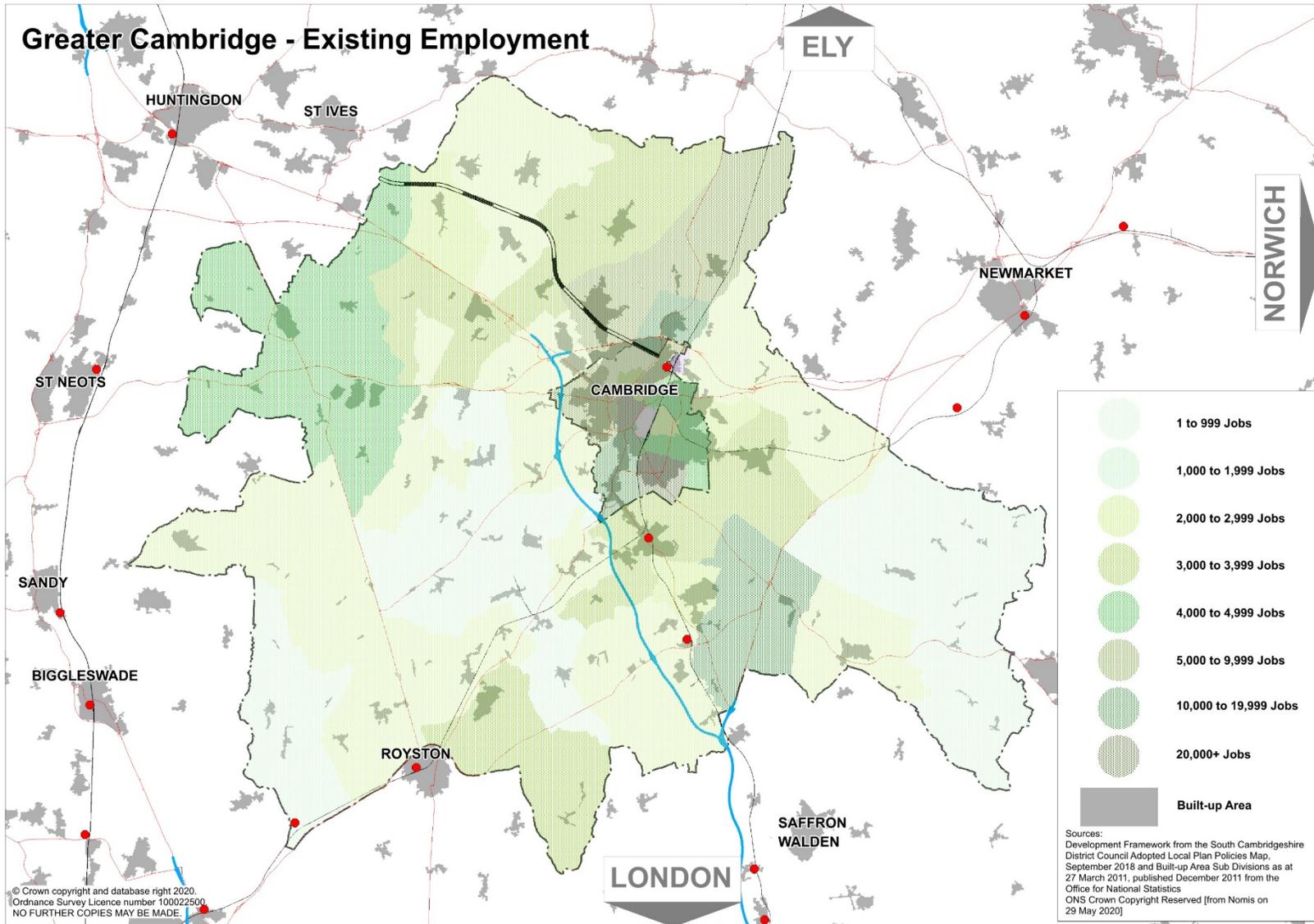
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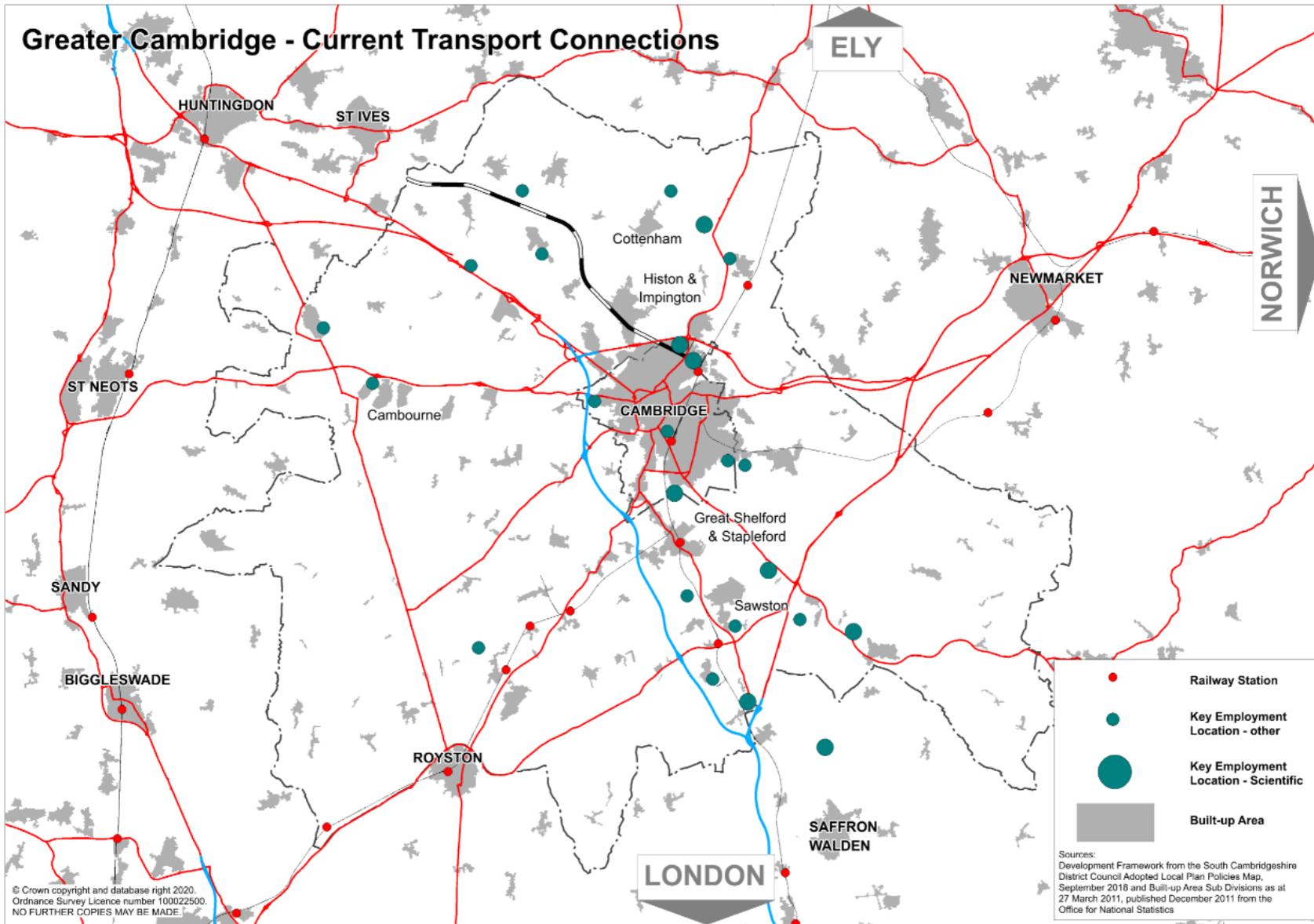
1. Baseline:
 - a) Existing homes
 - b) Existing employment
 - c) Current transport connections, urban areas and employment sites
2. Commitments
 - a) Housing commitments
 - b) Jobs commitments
3. Opportunities and constraints
 - a) Future transport infrastructure
 - b) Rural services proxy – South Cambridgeshire Local Plan 2018 settlement designations

For environmental constraints - See Figures in Greater Cambridge Local Plan Sustainability Appraisal Scoping Report:

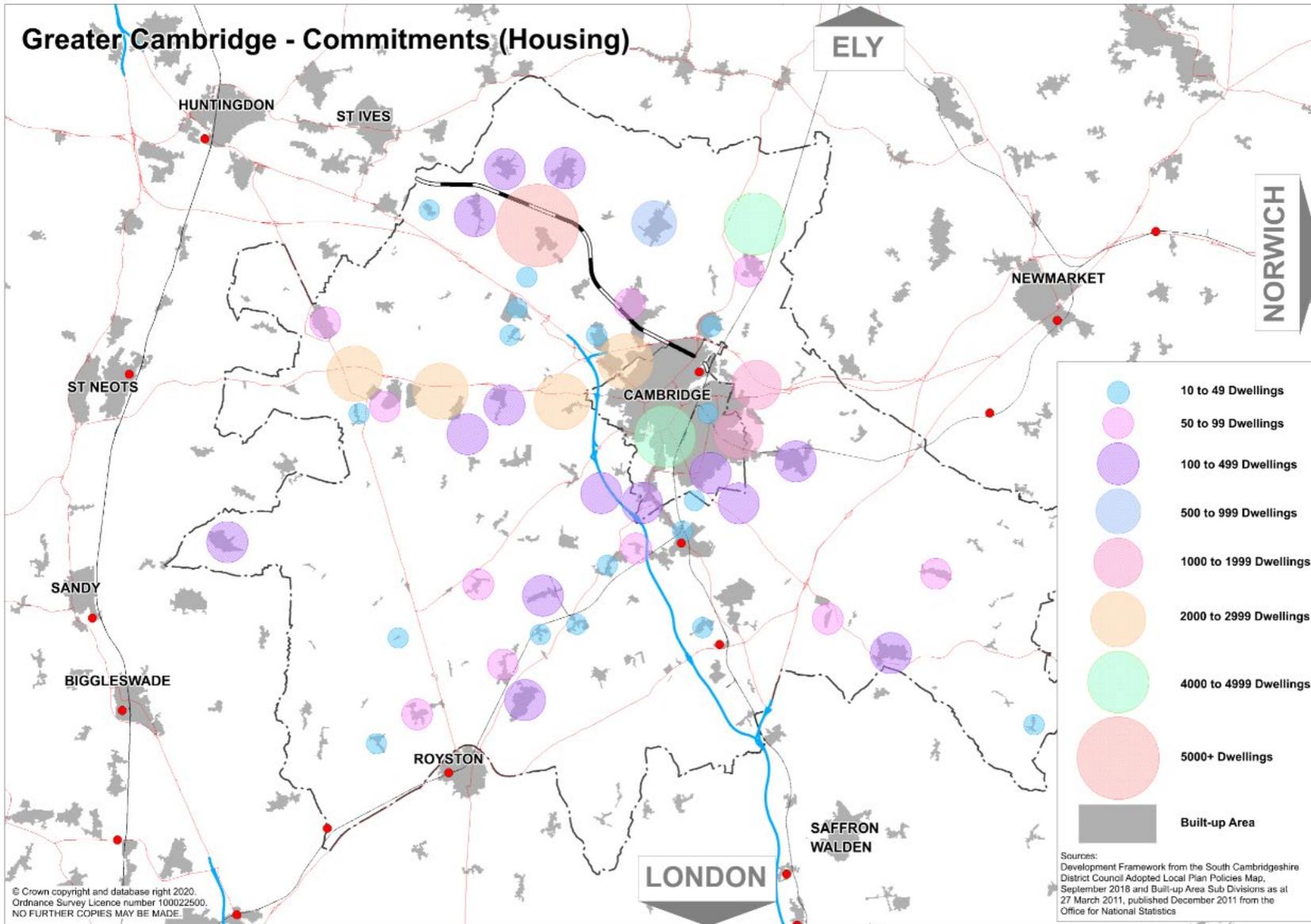
1. Baseline

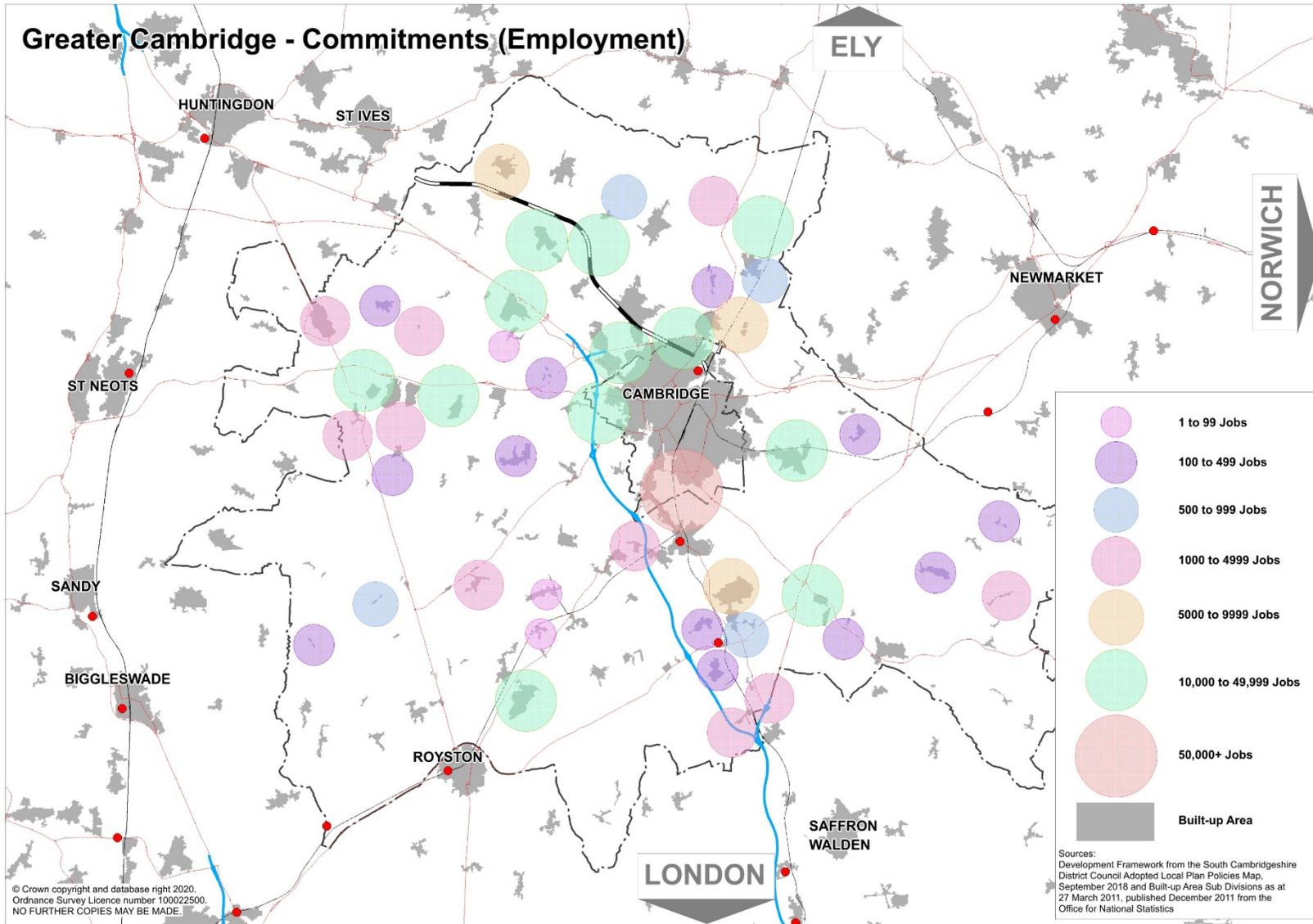






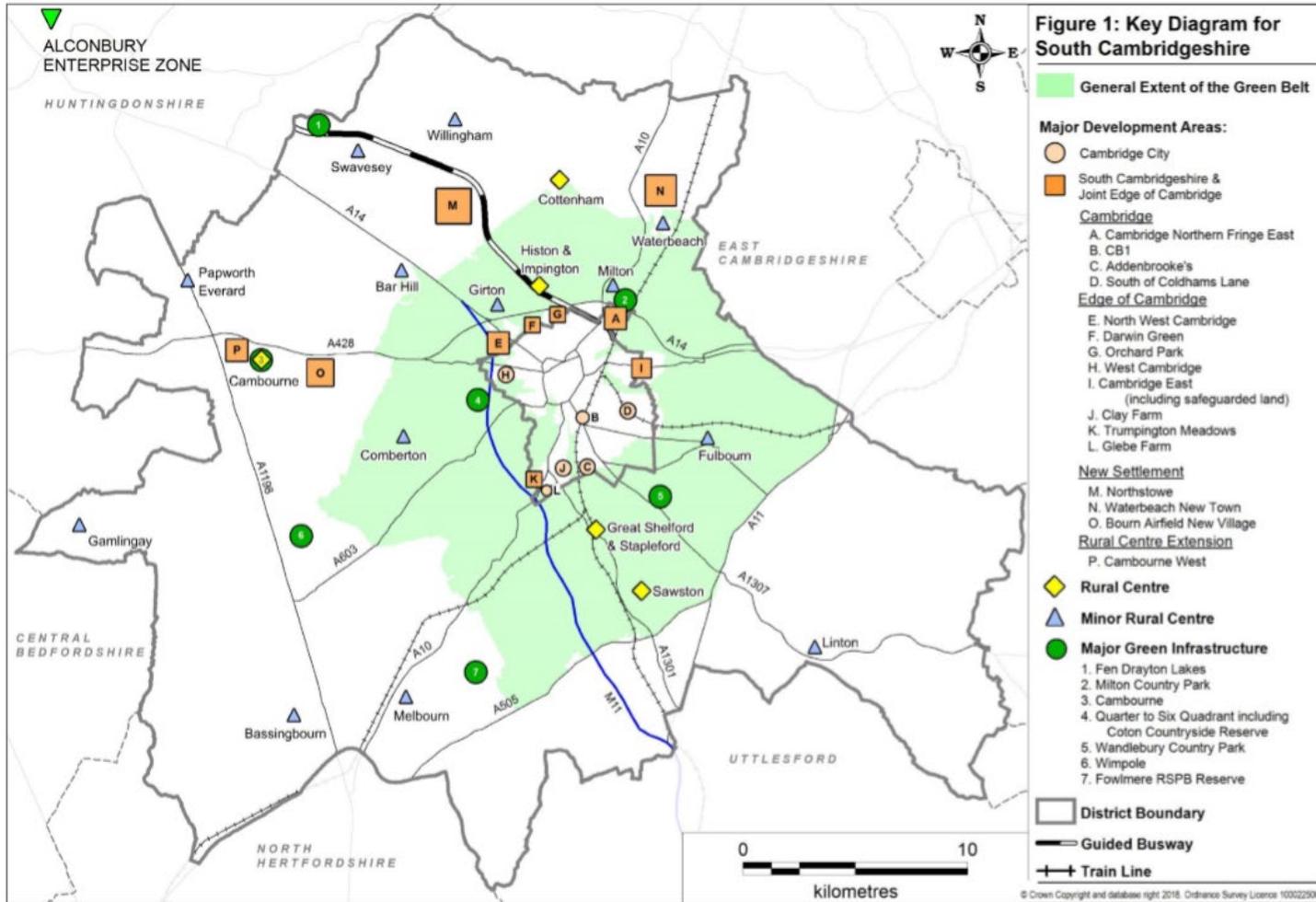
2. Commitments





3. Opportunities and constraints

Rural services proxy – South Cambridgeshire Local Plan 2018 village designations



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Greater Cambridge Employment Land and Economic Development Evidence Study

South Cambridgeshire District Council and Cambridge City Council

November 2020

Prepared by

GL Hearn
65 Gresham Street
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With

Iceni Projects Ltd

Final Report

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Quality Standards Control

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it has been signed by the Originators

DATE

November 2020

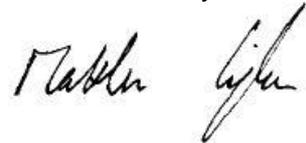
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Limitations

This document has been prepared for the stated objective and should not be used for any other purpose without the prior written authority of GL Hearn; we accept no responsibility or liability for the consequences of this document being used for a purpose other than for which it was commissioned.

EXECUTIVE SUMMARY

- 1.1 GL Hearn with SQW Ltd and Cambridge Econometrics and supported by Icen Projects Ltd and Justin Gardner Consulting was appointed by South Cambridgeshire District Council on behalf of both South Cambridgeshire District Council and Cambridge City Council (represented by the 'Greater Cambridge Shared Planning Service') to review the economic development and employment land needs of South Cambridgeshire District and Cambridge City (the 'Greater Cambridge' area) to 2041.
- 1.2 The data collection and analysis for this report was largely produced in Autumn / Winter 2019 prior to the COVID-19 pandemic. As a result, the underlying data reflects a position prior to any implications of COVID-19. It is recognized that further updates may be required in due course when the medium-term implications, if any, are clearer in relation to employment land and economic development in the Greater Cambridge area.
- 1.3 Furthermore, the implications of the change to the Use Class order including Class E are not considered in detail but this new class is recognised as being necessary to include in the Local Plan making process.
- 1.4 This executive summary considers the key findings and recommendations of the report.

Property Market Offices

- 1.5 The latest data from the Valuation Office Agency (VOA) show that Greater Cambridge has approximately 907,000 sqm of office floorspace. Cambridge has 366,000 sqm of floorspace, or 40% of the Greater Cambridge floorspace. South Cambridgeshire has 541,000 sqm of floorspace, or 60% of the Greater Cambridge floorspace.
- 1.6 Greater Cambridge's office stock saw growth of 41% to 907,000 sqm between 2000/01 and 2018/19. Cambridge experienced a decline of 2% whereas South

Cambridgeshire experienced a 107% increase in office stock, much higher than the national and regional rate.

- 1.7 There are supply pressures for small to mid-sized office occupiers in the city core, particularly between 1,000 to 5,000 sqft (around 100 to 500 sqm). There is also demand for this bracket and larger floorspace in North East Cambridge including the Science Park.

Industrial

- 1.8 Cambridge has 244,000 sqm of industrial floorspace, or 21% of the Greater Cambridge floorspace. South Cambridgeshire has 901,000 sqm of floorspace, or 79%. Since 2000/01, South Cambridgeshire has experienced a 23% increase in industrial stock whereas Cambridge has experienced a decline of 33%. Losses in the city have therefore been offset by gains elsewhere. Overall, Greater Cambridge has seen a 5% growth in industrial floorspace over the 2000/01 to 2018/19 period.
- 1.9 In the city, industrial rents have increased considerably in recent years. This was explained by reduced industrial floorspace meaning supply is unable to meet demand. Trade counters are more likely to achieve higher rents compared with smaller industrial occupiers.

Labs

- 1.10 Across Greater Cambridge, an average of 42,000 sqm of R&D floorspace was transacted annually from 2012-2018, with around 53 deals per annum, mostly in North East Cambridge (29) and South Cambridgeshire (20). Deals in North East Cambridge were concentrated in the lower size bands compared to South Cambridgeshire which included some large floorspace transactions.
- 1.11 Demand is high for wet labs, as space is highly specific, and companies seek flexible high quality floorspace, although the market is bringing forward more floorspace. Dry lab space, as with office, sees high demand in the North East Cambridge area with smaller firms taking space outside of the city in response to high city rents.

Clusters in Cambridge

Life Sciences

- 1.12 Life sciences is a key sector for the study area. Significant concentrations are found at Addenbrooke's Hospital and Cambridge Biomedical Campus on the southern edge of city. Further out, there are major centres across the south and south east of South Cambridgeshire including Babraham Research Campus, Wellcome Trust Genome Campus (Hinxton), Granta Park (Great Abington), Sagentia Research Park (Harston) and Melbourn Science Park. Other key hubs include Cambridge Research Park (Landbeach) to the north of the city, and St John's Innovation Park and Cambridge Science Park at the north east edge of Cambridge.
- 1.13 Whilst there are benefits of connecting directly or being located close to research centres, there is also evidence of businesses operating successfully in new, accessible locations.
- 1.14 The sector should continue to see growth. There are some local challenges to keeping up with demand for both wet and dry lab space, albeit there is additional floorspace coming forward including at the Genome Campus (Hinxton), Cambridge Biomedical Campus, Cambridge Science Park and Granta Park (Great Abington). Leases should be encouraged to be more flexible along with floorplate sizes allowing firms to change and grow as they develop through their life cycle.

ICT

- 1.15 Firms in this sector require office / dry lab space and are distributed either in Cambridge City Centre and near Cambridge Railway Station, or clustered around established business parks, such as Cambridge Business Park and Cambridge Science Park, Cambridge Research Park (Landbeach) and Cambridge Innovation Park (Waterbeach), St John's Innovation Park, and Cambourne Business Park (to the west of Cambridge).
- 1.16 ICT businesses are less likely than those in other sectors to have specific locational requirements, notwithstanding the concentration in North East Cambridge, but they

do benefit from clustering with other like-minded firms and near the railway stations giving access to London.

- 1.17 ICT employment has seen positive growth in recent years through the rise of Artificial Intelligence, big data and other e-services. There has been a period of inward investment in Cambridge, particularly at CB1. A general lack of appropriate labour may be a challenge to future growth.

Professional Services

- 1.18 This sector requires traditional office space and typically follows the same distribution as ICT due to strong linkages with knowledge intensive sectors. Key locations include the area around Cambridge Railway Station, North East Cambridge, Cambridge Research Park (Landbeach) and established research parks across South Cambridgeshire. As with ICT, there are strong growth prospects.

Advanced Manufacturing

- 1.19 Despite a broader decline in manufacturing, the advanced manufacturing sector in Greater Cambridge has stayed competitive due to connections with research and knowledge intensive sectors. Specific clusters are in Waterbeach, Cottenham and Bar Hill, and additionally Sawston, Hinxton, Duxford and Melbourn.
- 1.20 Advanced manufacturing is varied and takes many forms. In life cycle terms, it may only require office space at first but will quickly adapt to requiring dry lab / manufacturing floorspace. Advanced manufacturing has greater emphasis on the type of space required and less on a specific location compared to other sectors.

Employment land supply

- 1.21 Site visits were conducted at 71 employment sites. The purpose of the site visits was to explore the attractiveness to the market, identify available or vacant floorspace and opportunities for development including vacant land and the potential for redevelopment or intensification. Recommendations were provided across the sites. Taking into account these recommendations along with other more recent

developments, the 2018/19 monitoring supply position has been updated. Including all permission and allocations (with some future permitted losses), as below.

Table 1: Employment Land Supply

	B1	B1a	B1b	B1c	B2	B8	Total
South Cambridgeshire	249,035	89,959	109,444	14,031	-46,874	28,392	443,987
Cambridge	34,673	11,161	167,379	2,201	-29,162	-5,930	180,322
Greater Cambridge	283,708	101,120	276,823	16,232	-76,032	22,462	624,310

Source: Greater Cambridge Planning Service – 2018/19 monitoring data adjusted for further gains / losses

- 1.22 South Cambridgeshire’s supply includes 150,000 sqm of anticipated B1 floorspace (with resolution to grant permission) at the expanded Genome Campus of which a large part is expected to be B1b. In addition, there are proposals to bring forward significant B1 employment floorspace across North East Cambridge through the Area Action Plan although this floorspace is not yet included.

Employment forecasting

- 1.23 The process of producing long term future jobs forecasts for Greater Cambridge has been complicated. Different methodologies have been investigated and a range of sources of evidence have been considered to try and generate an informed view. This has included working with data used to inform the Cambridgeshire and Peterborough Independent Economic Review¹. This demonstrated very fast employment growth since 2011 in the Greater Cambridge area. Whilst this has been exceptional, it is important to recognise that the time series is still short in relation to long term forecasting.
- 1.24 The preferred approach involved using the East of England Forecasting Model Framework (EEFM) alongside historic growth rates for specific sectors. Analysis of past trends was compared to future projections generated through EEFM. For most sectors, future growth rates generated by EEFM are reasonably consistent with past

¹ Reference to CPIER does not constitute any endorsement by the originators of this data for the analysis contained within this report or the preferred approach to forecasting future employment

rates of growth. For a few sectors, EEFM's modelled estimates of future growth are (much) lower than observed historic growth

- 1.25 These 'key sectors' align with those identified as Greater Cambridge's most significant local economic clusters (notably Life sciences (comprising Research & Development and Health & care sectors) and Professional Services).
- 1.26 Modelling was undertaken for these key sectors to consider how a continuation of higher growth rates might affect total employment outcomes. Two scenarios were developed:
- Central scenario – most likely outcome taking into account long term historic patterns of employment.
 - Higher scenario – higher outcome placing greater weight on fast growth in the recent past, particularly in key sectors.
- 1.27 A separate exercise was undertaken using population driven employment growth linked to the government's standard methodology for housing. The reason for considering this scenario was to enable the councils, as part of their consideration of reasonable options for plan-making, to explore the employment supported by the government's standard method for housing, alongside the employment modelling referred to above.

Outputs summary

- 1.28 The table below provides a summary of the outcomes of the work. It includes:
- EEFM baseline (with the model updated for more recent data in Greater Cambridge by Cambridge Econometrics).
 - The population driven standard method employment position.
 - Historic annual average jobs change projected forwards, as a sense check, demonstrating the long term and fast recent growth since 2011.
 - The recommended lower and upper forecast range (central and higher growth) to be used for Local Plan purposes.

Table 2: Employment forecast by method, Greater Cambridge 2020-41

	2020-2041 change	Total at 2041
EEFM forecast baseline	40,100	255,600
Standard Method	45,761	257,600
<i>2001-2017 annual average change</i>	<i>55,300</i>	<i>272,300</i>
<i>2011-2017 annual average change</i>	<i>125,200</i>	<i>352,189</i>
Central Growth (KS2)	58,400	277,000
Higher Growth (KS3)	78,700	299,100

Source: GL Hearn, Cambridge Econometrics

Employment floorspace needs

- 1.29 The central, higher and standard method (labour supply) employment growth scenarios were used to generate floorspace requirements to 2041 using assumptions around employment densities. These were compared to historic completion trends projected forward. A recommended future employment floorspace need was derived from the modelling, allowing for a future vacancy margin for churn and choice, and balanced with the supply. In planning positively for growth, it is recommended that the floorspace figure resulting from the 'higher growth' employment scenario is planned for particularly in relation to B1a/b needs, without prejudice to employment outcomes. This ensures a flexible supply, encouraging business growth and inwards investment, and aligns with market feedback and past completions trends.

Table 3: Demand Supply by Use Class, Greater Cambridge (sqm) 2020-2041

Use Class	Need	Inc. vacancy margin 7.5%	Supply	Balance	Comments
B1 *	N/A	-	283,708	+283,708	Includes 150,000 Genome Campus
B1a	103,221	110,963	101,120	-9,861	
B1b	477,902	513,745	276,823	-236,922	Genome Campus likely to include high B1b element
B1c	16,506	17,744	16,232	-1,512	-
B2	-25,074	-25,074 (N/A)	-76,032	-50,958	-
B8	43,659	46,933	22,462	-24,471	-
Total	616,214	664,311	624,313	-39,998	-

Source: GL Hearn

* Blended B1 is not an output of the demand modelling, whilst the B1 supply represents outline permissions / allocations where the final mix is not yet known.

- 1.30 **Offices:** The modelling suggests a small undersupply in B1a type provision before taking into account B1 supply contributions. However, in Greater Cambridge there is a more blended market demand between B1b and offices. Combining B1a/b requirements in the above table identifies a significant shortfall. The North East Cambridge Area Action Plan is therefore considered important in providing employment floorspace and job growth in Cambridge as a whole. It should include both B1a office and B1b higher density dry lab provision potentially alongside more limited wet labs.
- 1.31 **Labs:** Within the B1b category, the modelling points to a shortfall which could be in the order of 50,000 – 100,000 sqm when taking into account the potential contribution of B1 mixed sites. This reflects that much of the future modelled demand in B1b under the higher growth scenario is assumed to be for R&D employment. If the 'higher' growth scenario is achieved over the next two decades, then the current pipeline of supply is likely to be insufficient. This is considered to be the case for higher density labs, where demand manifests particularly around North East Cambridge, and lower density research labs across Greater Cambridge as a whole. It is recommended that the local planning authorities continue to respond positively to proposals that can be considered on their merits, or through a further allocation.

Under the 'central' growth scenario, this additional level of provision is unlikely to be needed.

- 1.32 **Industrial and Warehousing:** The undersupply reported above suggests suitable locations should be identified for these premises, notable small and mid-sized light industrial, general industrial and distribution units. Light industrial premises are required with anticipated losses in the city requiring reprovision in South Cambridgeshire. Some provision should be made for allocations that support general industrial floorspace in order to facilitate traditional industries as well as supporting advanced industries that require operational activities not suited to residential areas.

Policy matters

- 1.33 **Villages** in Greater Cambridge play an important role in providing for local employment and for supporting local clusters, particularly industrial floorspace relocating out of the city in accessible locations. Rural building refurbishment can also play a role in supporting smaller enterprises outside of the city.
- 1.34 **Employment & training and affordable workspace** can be effectively delivered through planning policies. A number of examples, particularly from London Boroughs, provide a useful reference for the policies and their implementation which Greater Cambridge can seek to draw from.
- 1.35 **Homeworking** trends can affect the requirement for employment floorspace. This varies considerably by sector. Office-based sectors achieve 12-13% of jobs 'typically homeworking' and 20-30% 'occasionally' working from home. Evidence until spring 2020 was limited in suggesting this was likely to increase significantly in the future – however COVID-19 is likely to see an ongoing move towards home-working, even when the pandemic subsides.

1 INTRODUCTION

- 1.1. GL Hearn with SQW Ltd and Cambridge Econometrics and supported by Icen Projects Ltd and Justin Gardner Consulting was appointed by South Cambridgeshire District Council on behalf of both South Cambridgeshire District Council and Cambridge City Council (the 'Greater Cambridge Shared Planning Service') to review the economic development and employment land needs of South Cambridgeshire District and Cambridge City (the 'Greater Cambridge' area) to 2041.
- 1.2. This report covers the following matters:
 - Property market dynamics review for Greater Cambridge
 - A review of economic clusters in Greater Cambridge, primarily based on stakeholder engagement
 - Land supply assessment of existing employment areas in Greater Cambridge
 - Testing of employment forecasting models and a preferred employment figure by sector to 2041
 - Employment floorspace requirements emerging from the forecasting models to 2041
 - Balance of quantitative and qualitative needs for employment land
 - Review of economic development policies
- 1.3. The data collection and analysis for this report was largely produced in Autumn / Winter 2019 prior to the COVID-19 pandemic. As a result, the underlying data reflects a position prior to any implications of COVID-19. It is recognized that further updates may be required in due course when the medium-term implications, if any, are clearer in relation to employment land and economic development in the Greater Cambridge area.
- 1.4. Furthermore, 'Class E' was introduced on 1st September 2020, shortly before report publication. It is noted that this may need to be reflected in the approach to land use planning in the Local Plan.
- 1.5. Appendix G sets out how this report complies with the requirements of the National Planning Policy Framework and Planning Practice Guidance.

2 GREATER CAMBRIDGE PROPERTY MARKET

2.1 Greater Cambridge contains several commercial and industrial submarket areas. The analysis (undertaken by GL Hearn in 2019) covers the areas administered by Cambridge City Council and South Cambridgeshire District Council, known as “Cambridge” and “South Cambridgeshire” respectively and when combined known as “Greater Cambridge”.

2.2 This analysis also aims to assess the Greater Cambridge market within its geographical and commercial context of neighbouring local authorities as part of the defined Functional Economic Market Area (FEMA)². The six local authorities within the FEMA include:

- Cambridge City Council
- East Cambridgeshire District Council
- Fenland District Council
- Huntingdonshire District Council
- Peterborough City Council
- South Cambridgeshire District Council

2.3 This chapter conducts an analysis for Greater Cambridge compared to the wider FEMA, further comparators³, and including a more detailed analysis of four key submarkets in Greater Cambridge. The analysis draws upon CoStar and EGi data, commercial property databases with detailed transaction information, and expert local agent consultations to deliver a more nuanced picture of the market in terms of take-up, availability and supply in the office, R&D and industrial markets.

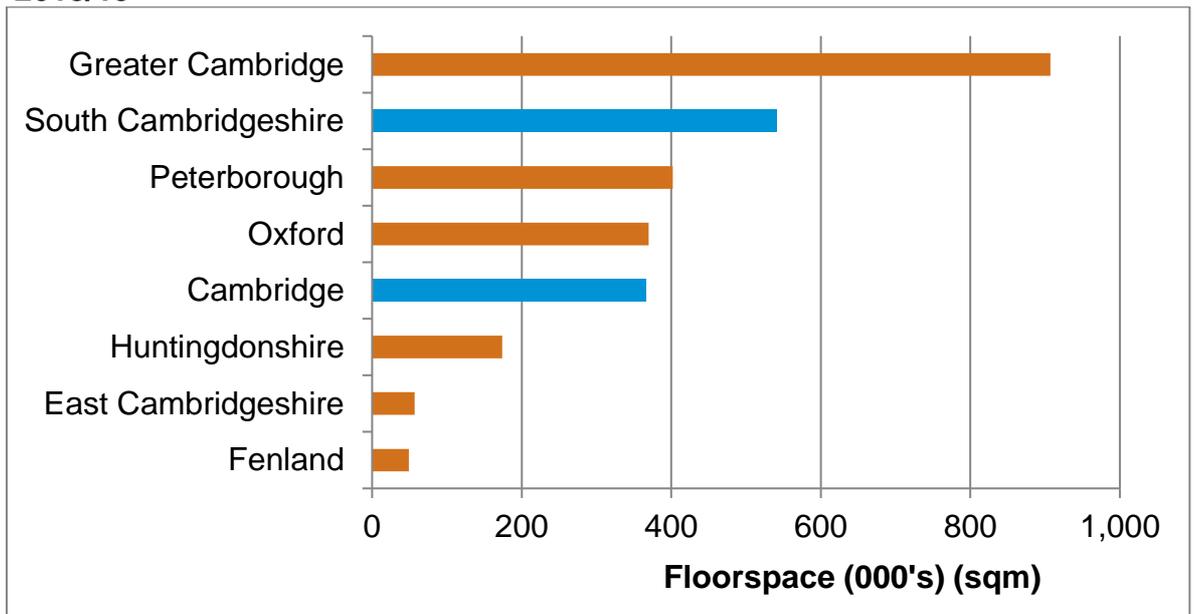
² <https://www.cambridge.gov.uk/media/3533/devolution-proposal-governance-review.pdf>

³ Oxford City Council has been added for comparison to Cambridge due to its similar nature as a knowledge-based city

Office Analysis Stock

2.4 The latest data from the Valuation Office Agency (VOA) shows that Greater Cambridge has approximately 907,000 sqm of office floorspace. Cambridge has 366,000 sqm of floorspace, or 40% of the Greater Cambridge floorspace. South Cambridgeshire has 541,000 sqm of floorspace, or 60% of the Greater Cambridge floorspace. South Cambridgeshire has 541,000 sqm of floorspace, or 60% of the Greater Cambridge floorspace. Peterborough has a similar amount of floorspace to Cambridge. East Cambridgeshire and Fenland have a very low quantum of office floorspace reflecting their more rural nature. Overall, South Cambridgeshire has the greatest quantum of office floorspace relative to its comparators, as illustrated in the figure below.

Figure 1: Office Stock, Greater Cambridge and Nearby Local Authorities, 2018/19



Source: GLH analysis of VOA data

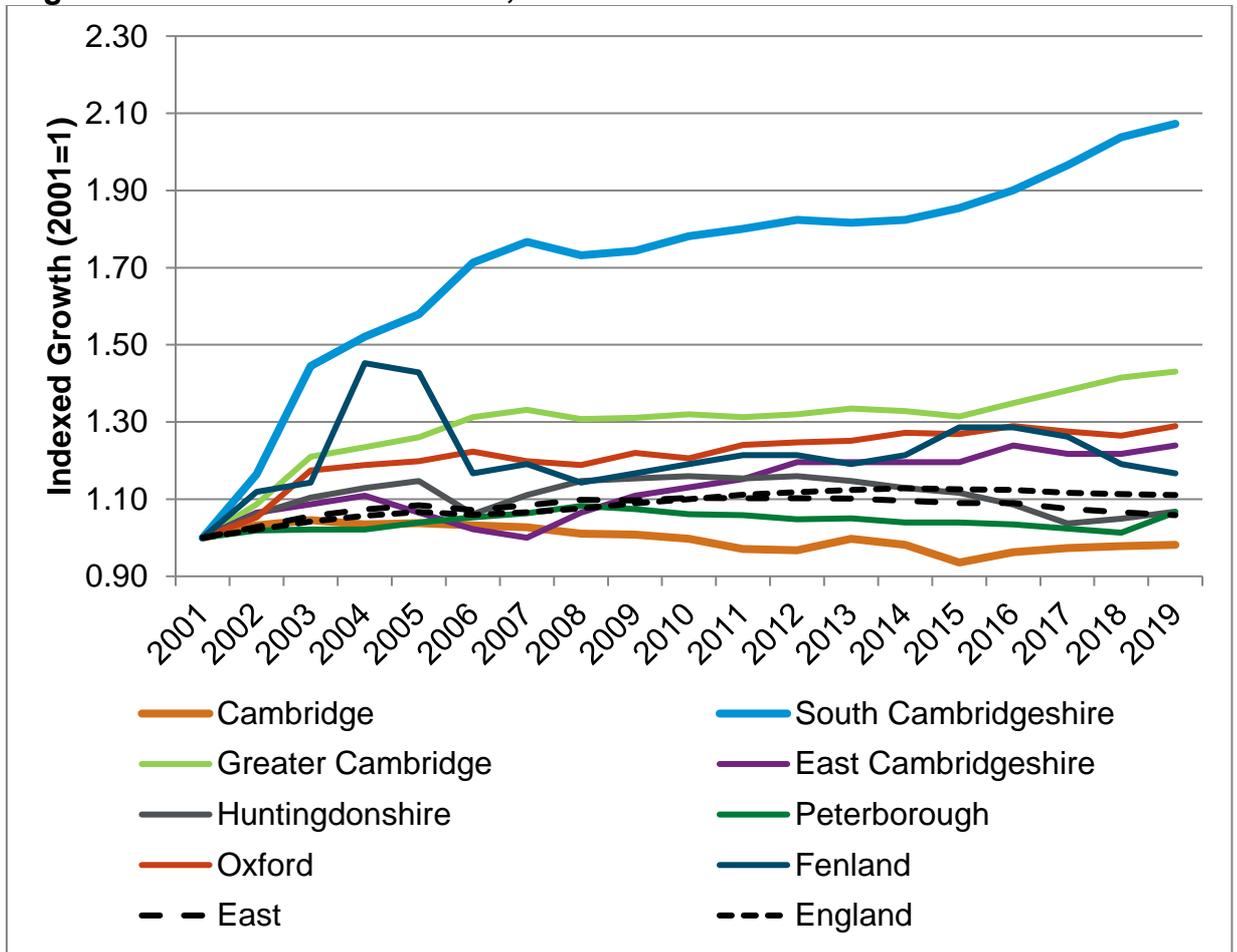
- 2.5 Over the past 17 years, Greater Cambridge’s office stock has seen strong growth from 634,000 sqm in 2000/01 to 907,000 sqm in 2018/19. This represents a 41% growth over this period and an annual growth rate of 2%.
- 2.6 There are significant differences between Cambridge and South Cambridgeshire. South Cambridgeshire experienced a 107% increase in office stock whereas Cambridge experienced a slight decline by 2%. Thus, office employment floorspace growth had all but stalled within the City but has experienced large gains across

South Cambridgeshire. Since 2016, however, recent developments within Cambridge such as CB1 have added to the overall office stock in the city. There was a net gain of 63,133 sqm of office floorspace in 2017/18 in Cambridge, and 14,766 sqm of office floorspace in 2016/17.⁴

- 2.7 The figure below shows the relative growth of the office stock in the local authorities and Greater Cambridge compared to the East Region and England. South Cambridgeshire experienced a sharp increase in office floorspace from 2000/01 to 2007/8 but more muted growth from 2007/08 to 2015/16 following the recession. From 2000/01 to 2004/05, Cambridge also experienced a growth of 5%, but then continued a steady decline of floorspace until 2015, with office construction like the CB1 development contributing to some net gains until 2018/19. Ultimately, Cambridge has 2% less office floorspace than it had in 2000/01.
- 2.8 Compared to England as a whole, South Cambridgeshire experienced significantly more growth in the past 15 years whereas Cambridge diverged and experienced a decline. South Cambridgeshire has shown the highest increases in floorspace out of all nearby local authorities since 2000/01 and has driven the Greater Cambridge supply. In particular, the rate of growth increased again in South Cambridgeshire since 2014/15 whilst other authorities have had either no growth in floorspace or a slight decrease. Oxford has seen relatively strong office floorspace growth over the period outperforming the study area FEMA with the exception of South Cambridgeshire.

⁴ Council-provided data from monitoring of completions of planning permissions.

Figure 2: Office Stock Trend, 2001-18/19



Source: GLH analysis of VOA data

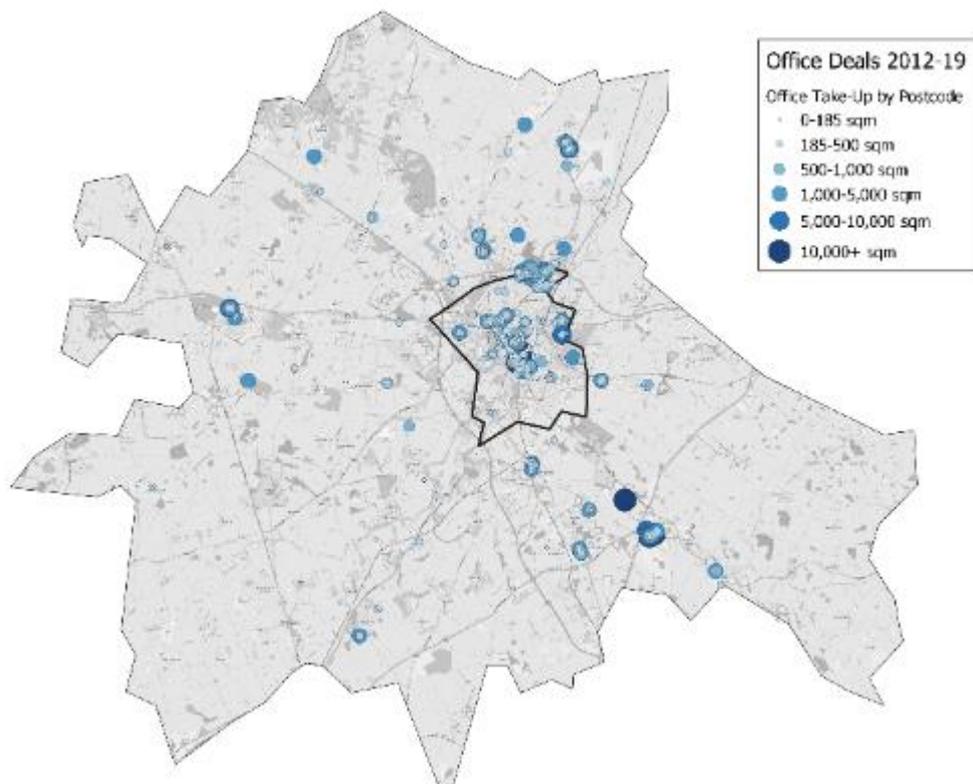
Take-Up

2.9 “Take-up” is defined as lease or owner-occupancy purchase transactions of floorspace, recorded in CoStar or EGi. The data was gathered across Greater Cambridge from 2012 to 2019. Take-up is not the build-out of new office space, but rather the term for a relevant and recorded market transaction on either new or existing stock.

2.10 The figure below shows the office take-up across Greater Cambridge mapped by total take-up per postcode. The size of circle (with a larger circle indicating a greater total quantum of floorspace) depicts the total space taken within a postcode over the period. Often multiple deals will occur in the same postcode, thus the circles according to size band are stacked with larger circles at the bottom.

2.11 The map shows the areas of greatest activity for office uses across the area and clearly shows the focus of activity being Cambridge city centre, North East Cambridge, and along key transport corridors such as the A11, A14 and M11. Larger deals tend to be standalone near motorway junctions as opposed to smaller deals which cluster in urban areas or in industrial parks., particularly in areas such as Granta Park, Cambourne Business Park, Cambridge Research Park (Landbeach) and Vision Park (Histon). Further deals and a more detailed map for individual areas is explored under the detailed submarket analysis.

Figure 3: Office Deals, Greater Cambridge, 2012-19



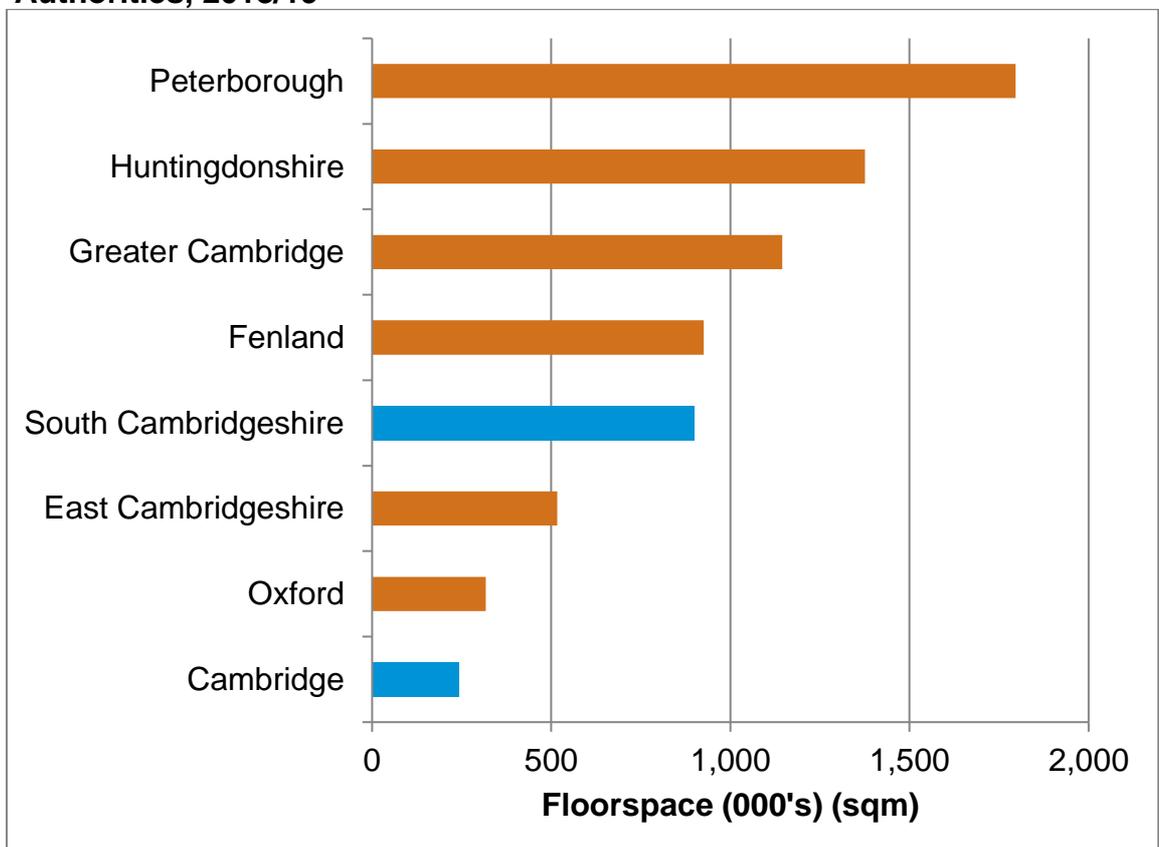
Source: GLH analysis of CoStar data

Industrial Analysis

2.12 The latest data from the Valuation Office Agency (VOA) shows that the Study Area has approximately 1,145,000 sqm of industrial floorspace. Cambridge has 244,000 sqm of floorspace, or 21% of the Greater Cambridge floorspace. South

Cambridgeshire has 901,000 sqm of floorspace, or 79%. Compared to the office market, Cambridge and South Cambridgeshire have a lower quantum in terms of overall floorspace compared to nearby local authorities. Peterborough has the highest amount of industrial floorspace. The Cambridgeshire and Peterborough Independent Economic Review (CPIER) 2018 notes that Peterborough has a strong manufacturing history and that Peterborough also has a manufacturing and distribution base on the A1, which has attracted distributors such as Amazon.

Figure 4: Industrial Stock, Greater Cambridge and Nearby Local Authorities, 2018/19



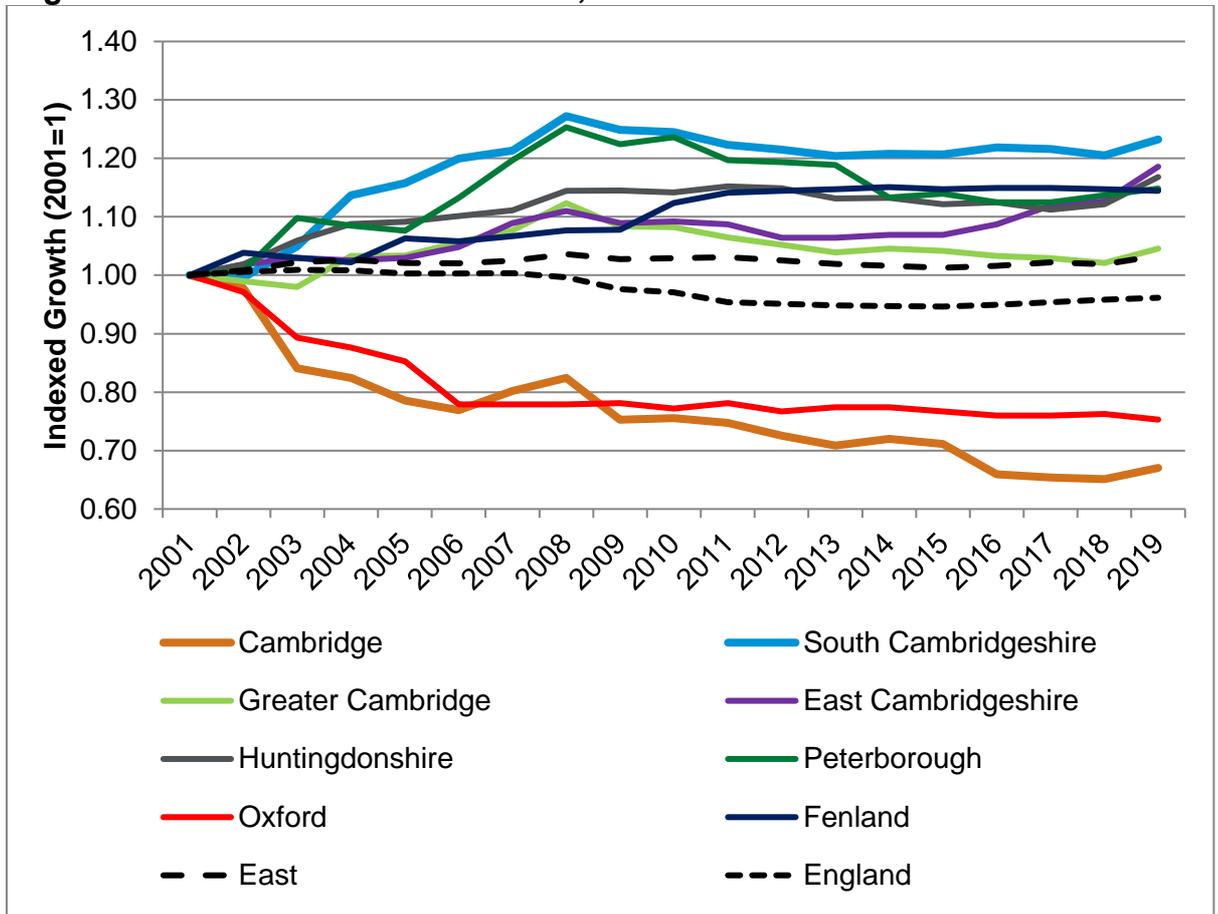
Source: GLH analysis of VOA data

- 2.13 Over the past 17 years the Greater Cambridge industrial stock has seen slight growth from 1,095,000 sqm in 2000-01 to 1,145,000 sqm in 2018-19. This represents a 5% growth over this period and an annual growth rate of 0.2% per annum.
- 2.14 South Cambridgeshire experienced a 23% increase in industrial stock whereas Cambridge experienced a significant decline of 33%. Thus, industrial employment

floorspace is depleting within Cambridge but has experienced gains across South Cambridgeshire. As a combined Greater Cambridge area, losses in Cambridge are counteracted by gains in South Cambridgeshire, which are larger in absolute terms, leading to a Greater Cambridge industrial floorspace growth of 5% over the 2000/01-2018/19 period.

- 2.15 The figure below shows the relative growth of the industrial stock in the local authorities compared to England. South Cambridgeshire experienced a sharp increase in industrial floorspace from 2000/01 to 2007/08 but then lost some floorspace from 2007/08 to 2014/15 post recession, a trend which has now levelled off. From 2015/16 floorspace began to increase again. From 2000/01 to 2005, Cambridge experienced a decline of 20% in industrial floorspace, rebounding until 2007/8, where it then continued to lose floorspace. Overall, Cambridge has 33% less industrial floorspace than in 2000/01. Compared to England as a whole, which lost about 5% of its industrial floorspace since 2000/01, South Cambridgeshire experienced significantly more growth whereas Cambridge diverged and experienced a steep decline. Cambridge was also the only district in the FEMA to have such a decline in floorspace whereas Oxford has seen a similar level of industrial floorspace contraction.

Figure 5: Industrial Stock Trends, 2000-18/19



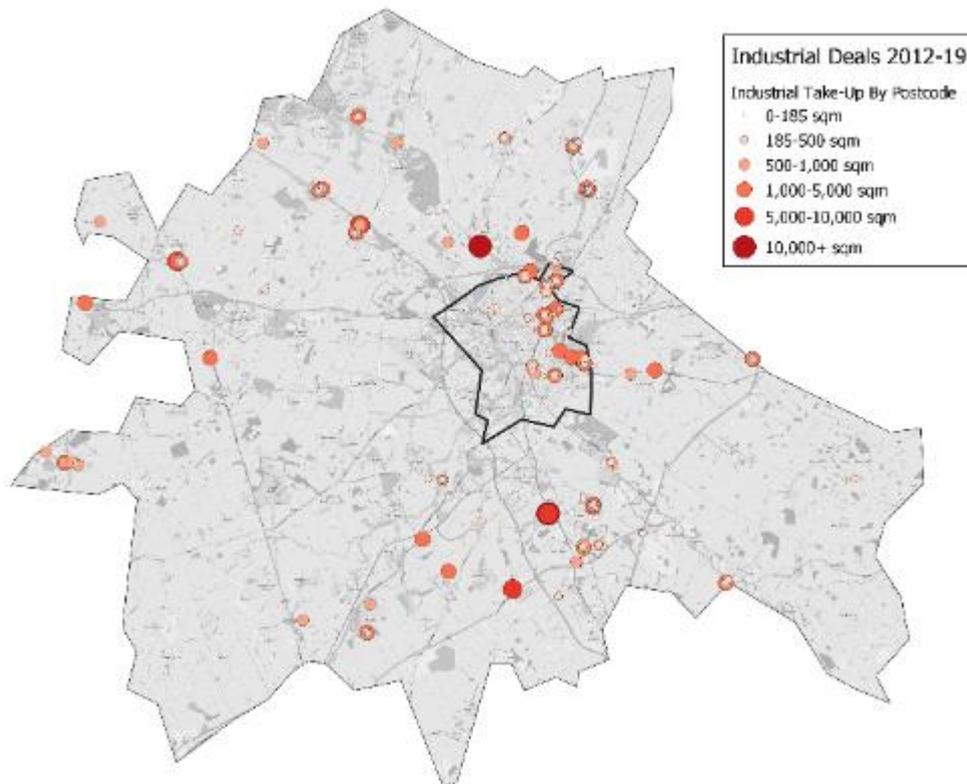
Source: GLH analysis of VOA data

2.16 The figure below shows the industrial take-up across Greater Cambridge mapped by total take-up per postcode. The size of circle (with a larger circle indicating a greater total quantum of floorspace) depicts the total space taken within a postcode over the period. Often multiple deals will occur in the same postcode, thus the circles according to size band are stacked with larger circles at the bottom.

2.17 The map shows the areas of greatest activity for industrial uses. While office activity was focused more with small deals in Cambridge city centre and with larger deals in out-of-town office parks along key roads, industrial deals are primarily further away from the city centre and along key transport corridors such as the A11, A14 and M11. Industrial deals within Cambridge are concentrated mostly in the North and East such as at Cowley Road and Nuffield Road Industrial Estates near Cambridge North Station. Larger deals tend to be more prevalent in specific parks in South

Cambridgeshire, particularly in areas such as Cambridge Research Park (Landbeach), The Chivers Factory in Histon, Bar Hill, Buckinghamway Business Park (Swavesey) and Duxford Airfield.

Figure 6: Industrial Deals, Greater Cambridge, 2012-19



Source: GLH analysis of CoStar data

2.18 Further examples of industrial deals and analysis are undertaken in the detailed submarket analysis.

R&D Analysis

2.19 For the purposes of the study, Research and Development floorspace comprises floorspace classified as B1b in the EGi database (this is not recorded in CoStar).

2.20 The figure below shows the R&D take-up across Greater Cambridge mapped by total take-up per postcode. The map shows the areas of greatest activity for R&D uses across the area. R&D has the highest concentrations in specific parks such as:

- Cambridge Science Park
- Cambridge Business Park

- St Johns Innovation Park
- Peterhouse Technology Park
- Capital Business Park, Fulbourn
- Vison Park / Chivers Way (Histon)
- Cambridge Research Park (Landbeach)
- Cambourne Business Park
- Granta Park
- Castle Park

2.21 Deals classified within EGi as B1b tend to not be scattered, and agent consultation revealed that R&D tends to congregate with other like-minded businesses in established parks with specific R&D clauses.

2.22 R&D floorspace requirements are noted to be split into three types inside a Science Park. The first type involves activities that are typically more technology, design, and artificial-intelligence orientated. Sometimes these uses fall under general office activities and there can be a blurring between these classifications in the data.

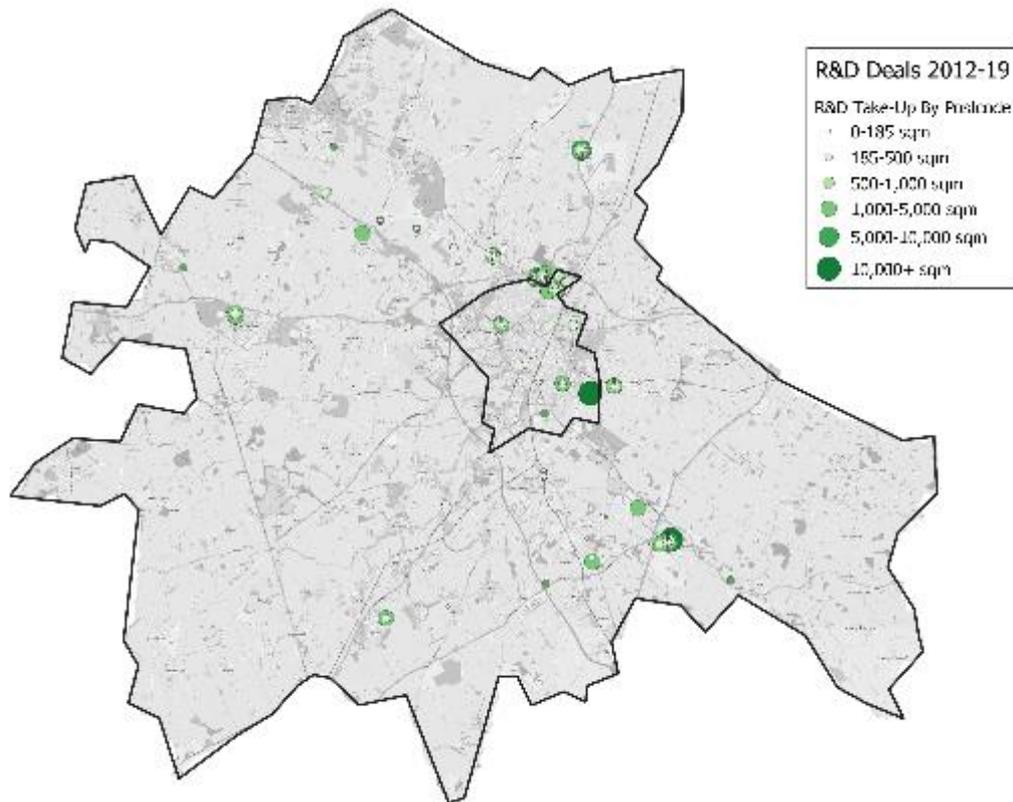
2.23 Business requirements are very similar to office spaces in Cambridge. Typically, this means that floorspace densities are between 80 (7.4) to 100 sqft (9.2 sqm) per person, which includes facilities like meeting rooms and breakout spaces. 80 sqft (7.4 sqm) requirements come from companies with a lot of hot desking and less meeting rooms, whereas 100 sqft (9.2 sqm) is for companies that require individual desks.

2.24 These types of companies typically congregate around the city centre and Science Park, as their labour force requirements for public transport and connections to London via the train are paramount.

2.25 The second type of R&D activities have a more extensive dry lab space. Their desk requirements are like the former group, but also include the addition of an additional shared storage space or workshop. Thus, space requirements tend to be around 120 sqft (11.1 sqm) per person but can be higher.

- 2.26 The third type of R&D floorspace is the wet lab (a type of laboratory where it is necessary to handle various types of chemicals and potential "wet" hazards). Historically, wet lab space was separate from the desk. Such an example could be an office in Cambridge Science Park taking on an additional lab space outside of the park. Analysis of local data indicates that wet labs maintain higher densities at around 25-30 sqm per employee.
- 2.27 In terms of locational requirements, lab occupiers prefer high profile parks such as Cambridge Science Park, but areas such as Granta Park are less expensive in terms of rents and suitable for companies looking for more value, according to agents.
- 2.28 Recently, however, agents noted that more companies are utilising lab space on the ground floor with a mezzanine, warehousing, or first floor office addition. Examples of this type include Cambridge Research Park (Enterprise) and the Evolution Business Park in Impington, where various types of floorspace are mixed in one unit. If there is mixing of floorspace on one site, space requirements could go up to 140 sqft (13 sqm) per person or more.
- 2.29 The figure below shows the R&D take-up across Greater Cambridge mapped by total take-up per postcode. As is the case for the maps shown for industrial and commercial office floorspace, the relative size of each green circle (with a larger circle indicating a greater total quantum of floorspace) shows the total space taken within a postcode over the period. Multiple deals sometimes occur in the same postcode, thus the circles according to size band are stacked with larger circles at the bottom. R&D Deals as presented in the map below tend to congregate in existing research parks across South Cambridgeshire and in North East Cambridge.

Figure 7: R&D Deals, Greater Cambridge, 2012-19



Source: GLH analysis of EGi data

2.30 Further examples of R&D deals and analysis will be undertaken in the detailed submarket analysis, but the map of Greater Cambridge helps to reveal broad distributions of activity for the two local authorities.

Submarket Analysis

2.31 CoStar, as part of their data gathering and analysis, reports geographic regions as “markets”. Markets are defined in CoStar through metropolitan area definitions, which broadly equate to county or district boundaries. Submarkets are often classified through local authority districts.

2.32 Smaller submarkets however are noted by CoStar to be more specialised, and CoStar has worked alongside “key agents” within the markets to search for

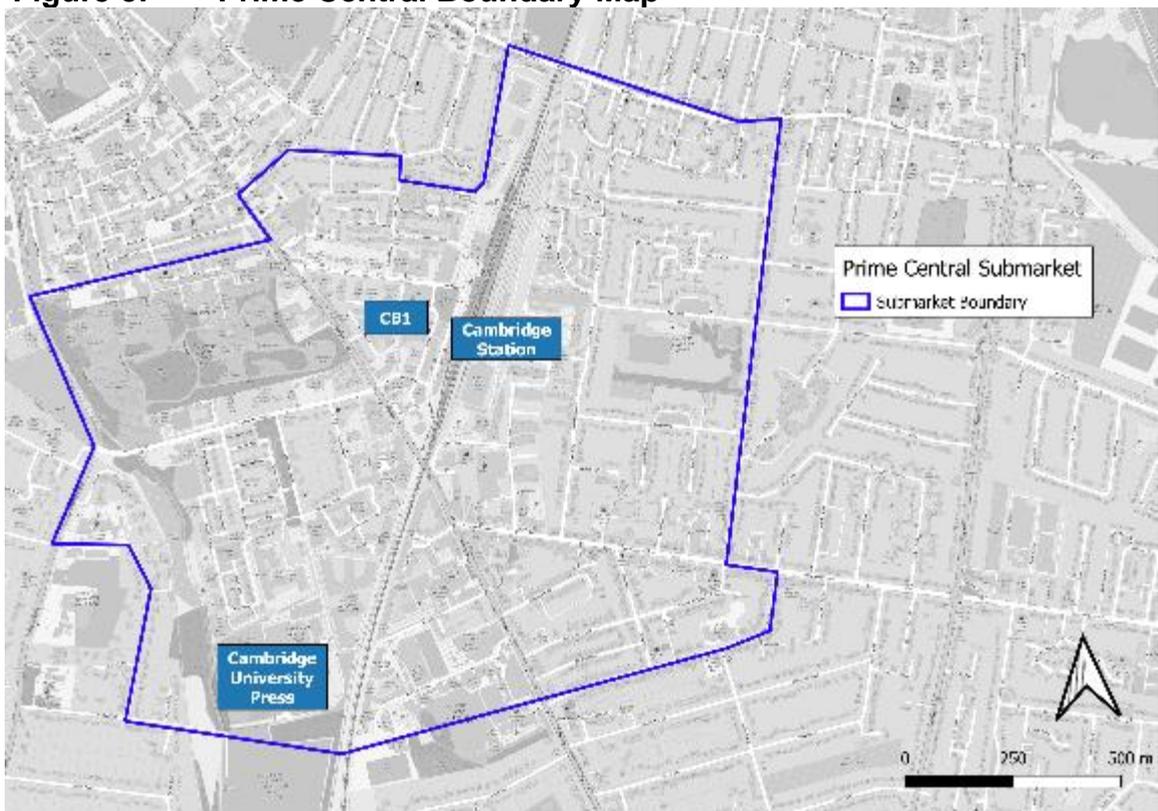
commonly agreed submarkets within larger cities such as London, Birmingham and Cambridge.

2.33 CoStar identified four office submarkets within the Greater Cambridge Market. They are: “Prime Central”, “City Centre Periphery”, “Northern Cluster”, and “South Cambridgeshire”.

2.34 In response to agent and stakeholder consultation, these submarkets remain useful for analysis, but have been amended in some instance for ease of analysis.

2.35 ‘Prime Central’ lies in the centre of the Cambridge City local authority area. Its borders have been unchanged from the CoStar boundaries.

Figure 8: Prime Central Boundary Map

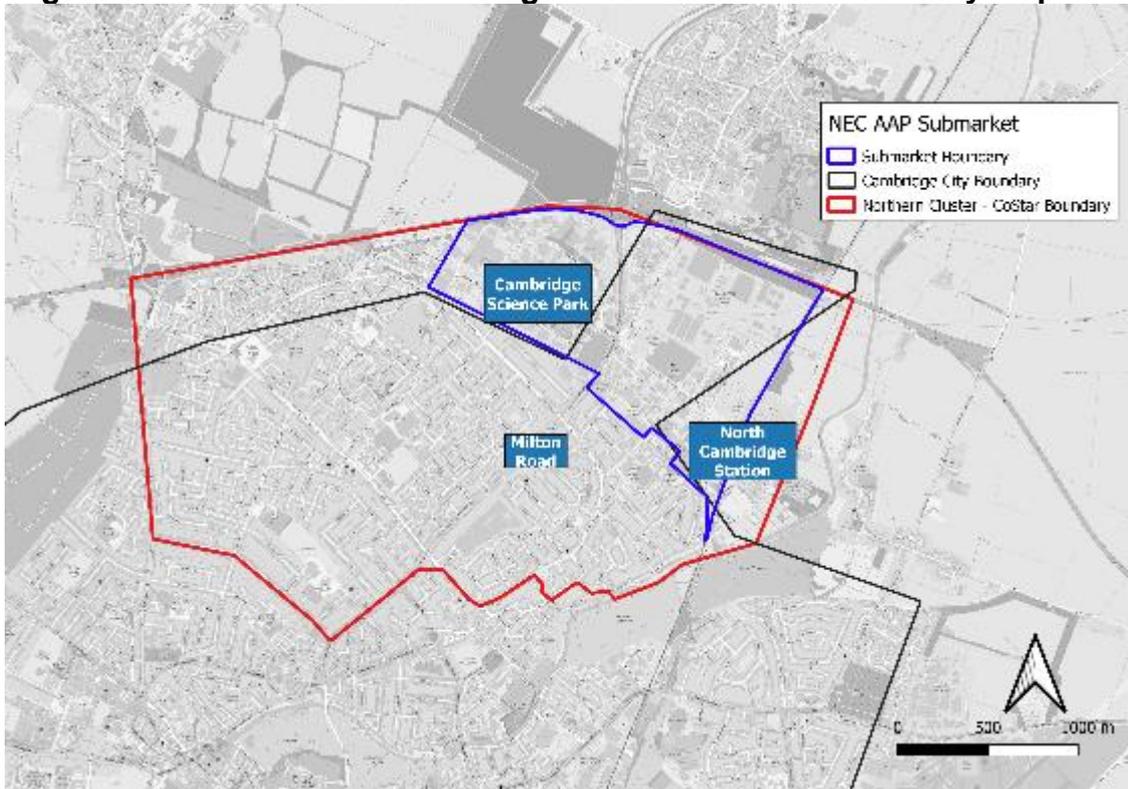


Source: CoStar and GLH Analysis

2.36 CoStar identified an area in the general vicinity of the North East Cambridge Area Action Plan (AAP) area, which includes areas further south and east of the AAP area (in red below). In this instance the CoStar submarket boundary has been confined

to the boundary of the NEC AAP to better understand the transactions occurring directly in line with that area (in blue).

Figure 9: North East Cambridge Area Action Plan Boundary Map

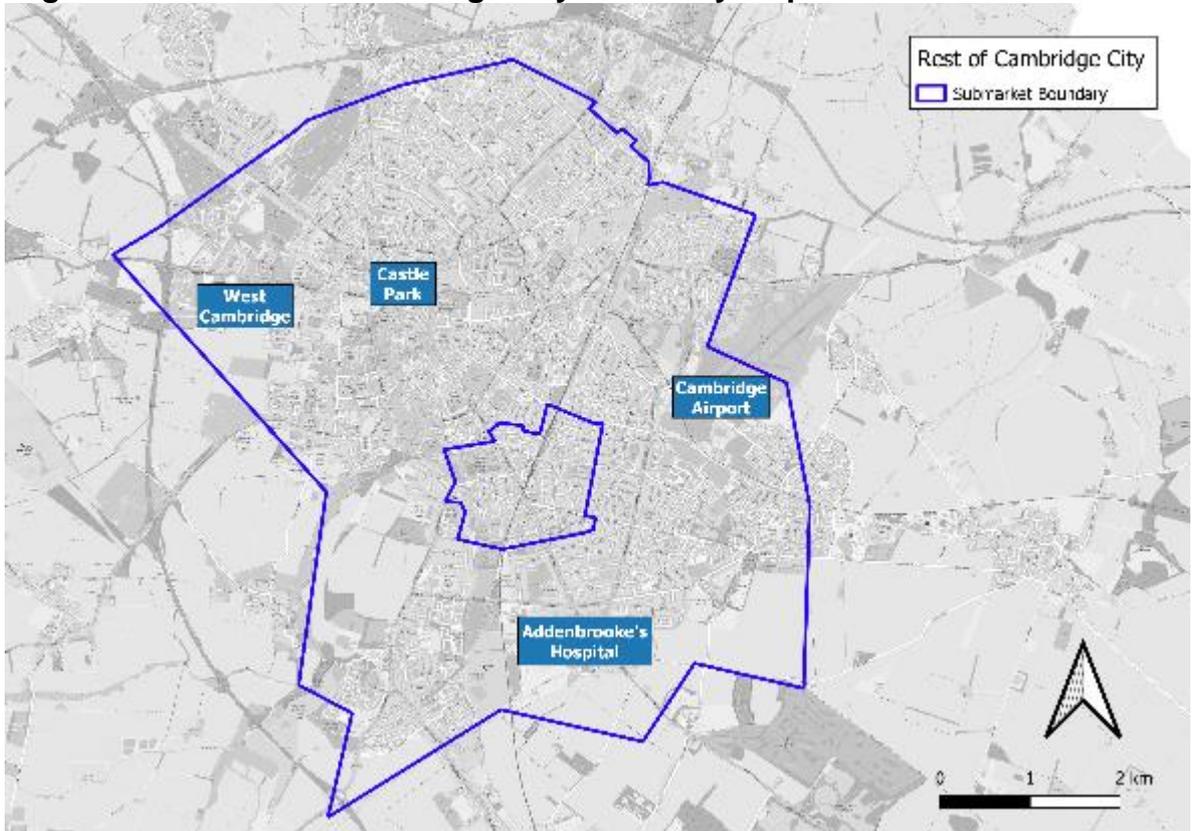


Source: CoStar and GLH Analysis

*Note that Local Authority Boundaries are generalised and for reference

- 2.37 The 'Rest of Cambridge City' boundary broadly reflects the boundaries of Cambridge, with the removal of the Prime Central and the North East Cambridge AAP areas.

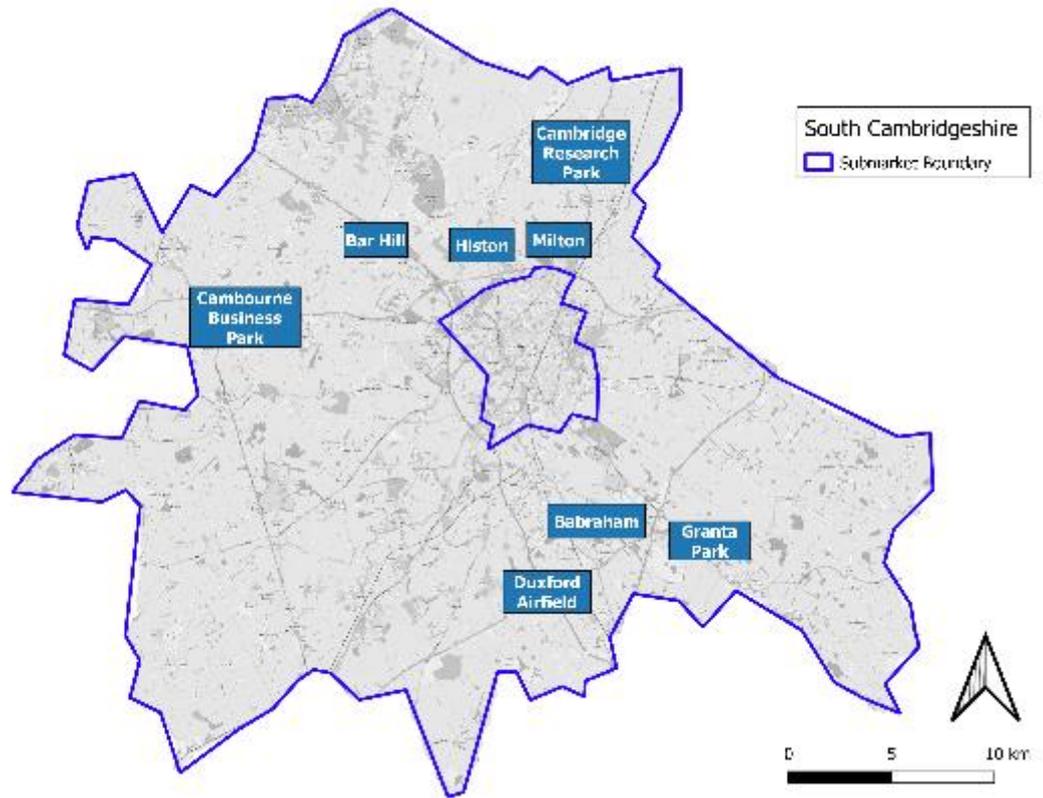
Figure 10: Rest of Cambridge City Boundary Map



Source: CoStar and GLH Analysis

- 2.38 The South Cambridgeshire District boundary reflects the South Cambridgeshire submarket boundary, with the notable exception of Cambridge Science Park and St. John's House being included in the North East Cambridge AAP area as opposed to South Cambridgeshire.

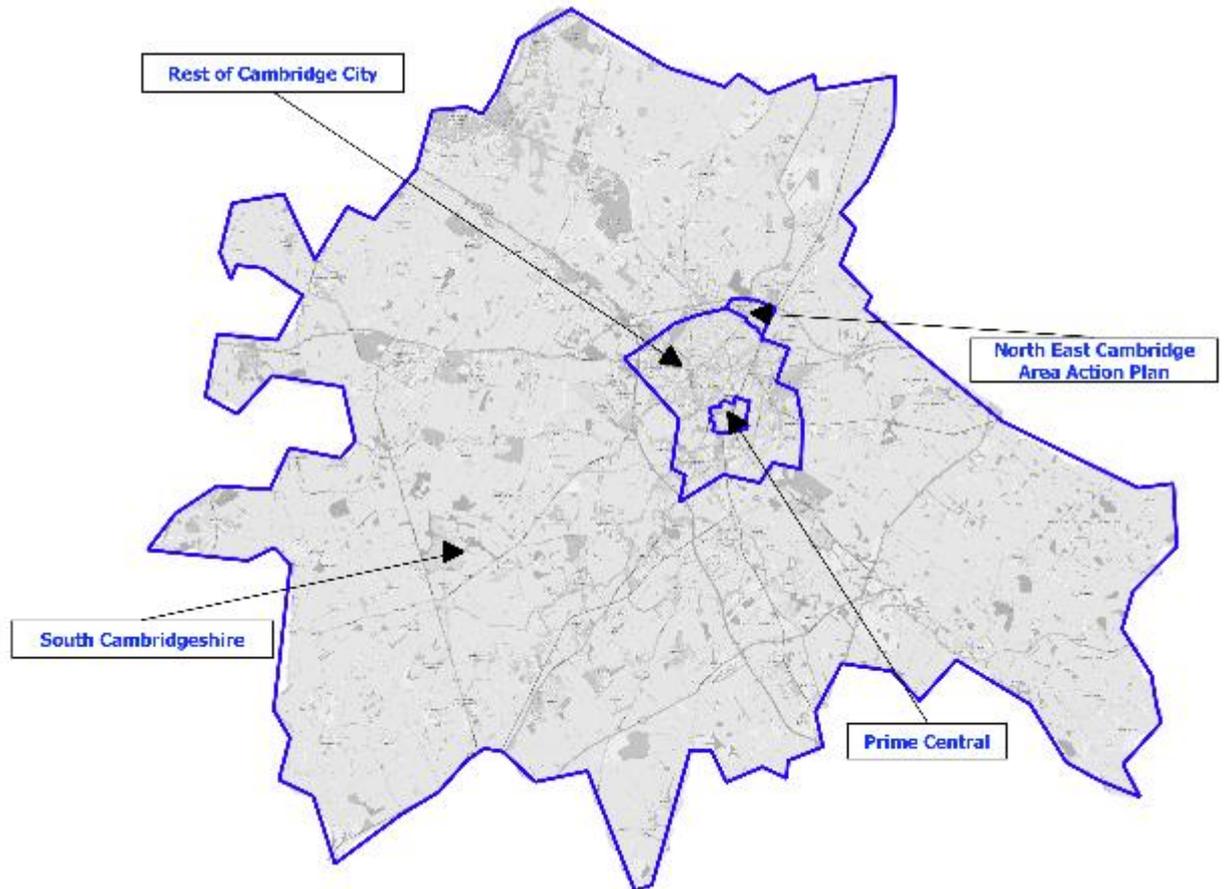
Figure 11: South Cambridgeshire Submarket Boundary Map



Source: CoStar and GLH Analysis

2.39 The boundaries of these submarkets for this study have been mapped as shown in the figure below.

Figure 12: Submarkets Map – Greater Cambridge



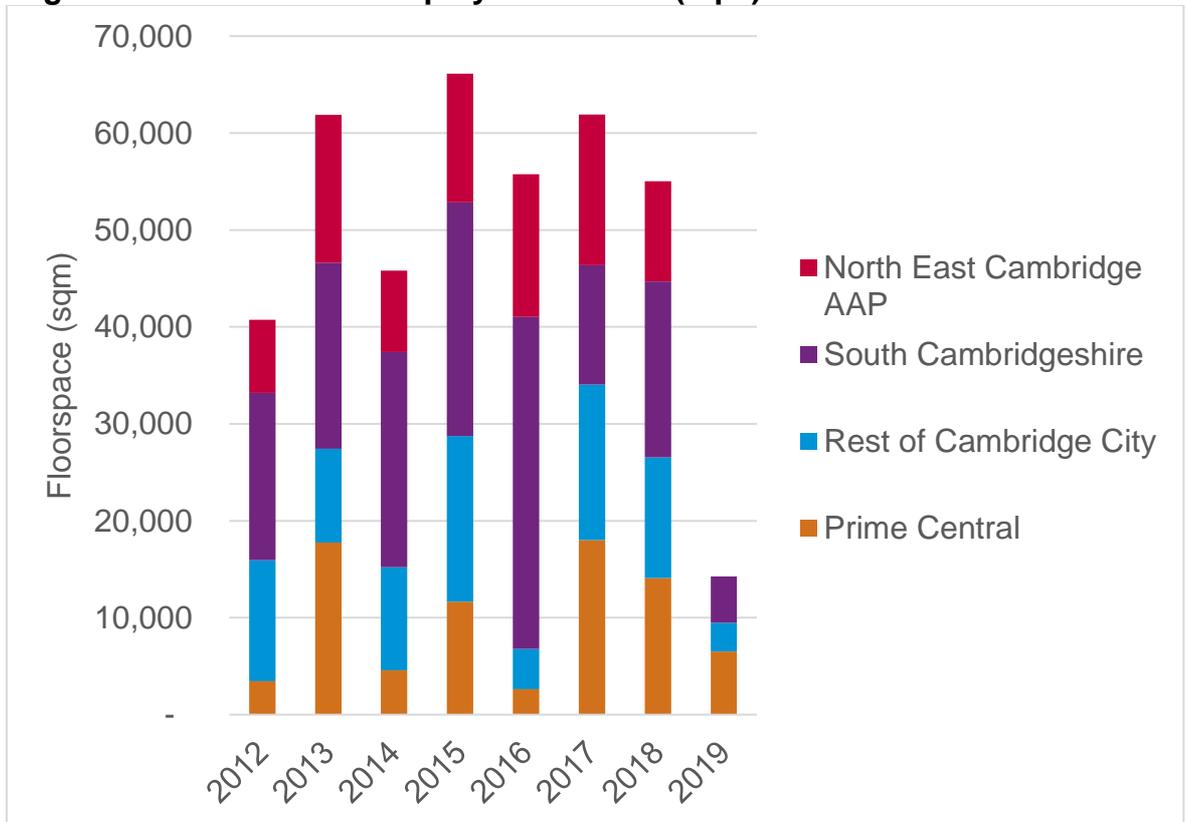
Source: GLH, 2019

2.40 Firstly, the office, industrial and R&D markets were analysed in terms of floorspace take-up, availability and supply. Subsequently, agent analysis and coverage of key deals and supply pressures were used to help to underscore the key market differences in each submarket. For the sake of comparison, consistent submarket boundaries were used.

Office Market – Submarket Analysis

2.41 Across the four submarkets, an average of 55,000 sqm of office floorspace was transacted per annum from 2012-2018 (as 2019 is not a complete year). In comparing the various submarkets, South Cambridgeshire sees the greatest overall amount of take up as compared to the other submarkets. An average of 21,000 sqm of floorspace is transacted per annum.

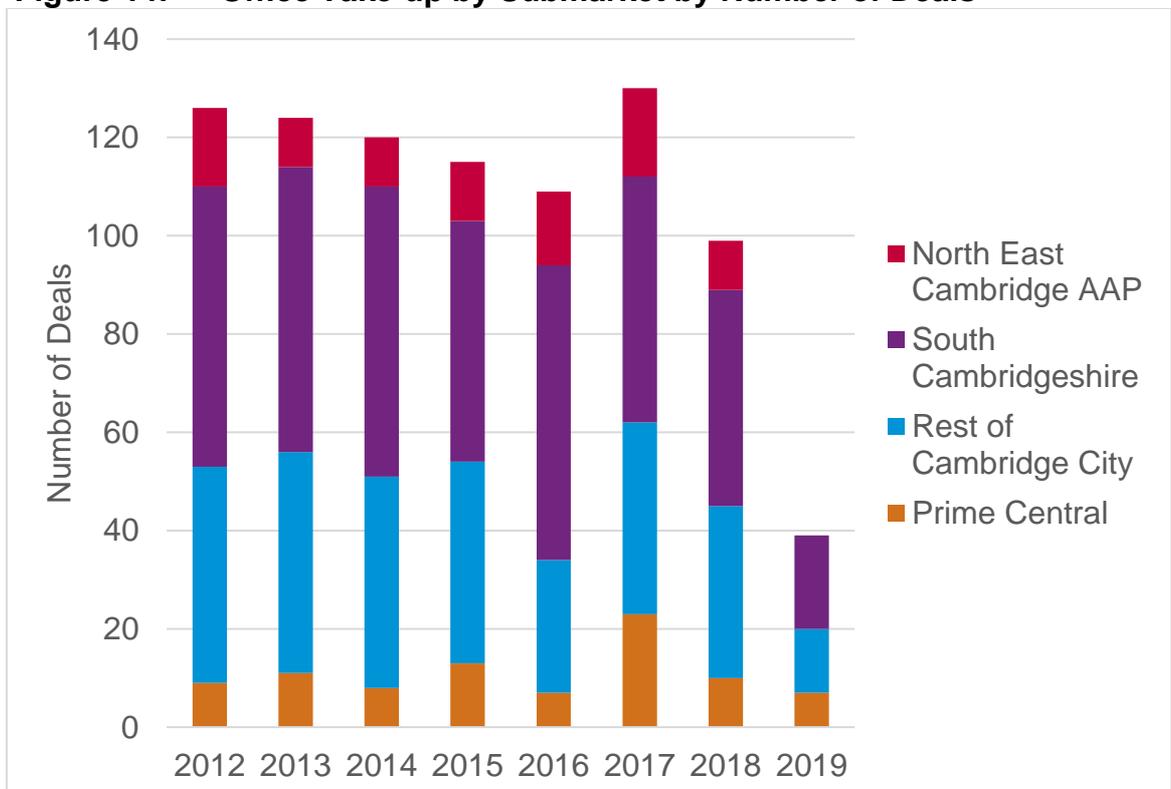
Figure 13: Office Take-up by Submarket (sqm)



Source: CoStar with GLH Analysis (2019 data incomplete)

2.42 Across the four submarkets, an average of 118 deals per annum between 2012 and 2018 took place for offices, with South Cambridgeshire having the highest average of 54 deals per annum, however these deals were highly concentrated in the lower size bands.

Figure 14: Office Take-up by Submarket by Number of Deals



Source: CoStar with GLH Analysis (2019 data incomplete)

2.43 As noted in the table below, deals tend to be much more evenly distributed across various size bands in both Prime Central and North East Cambridge, although overall deal counts were much lower. Typical occupiers in the Prime Central include high tech and other high-value businesses that require large prime floorspace. In North East Cambridge, the typical occupier centres more around research and development. The examples of deals occurring in these two submarkets will be covered under more detailed analysis further in the report.

Table 4: Office Take-Up by Size Band by Submarket, 2012-19

Size Band	North East Cambridge AAP	Prime Central	Rest of Cambridge	South Cambridgeshire
0-185 sqm	18%	23%	56%	62%
185-500 sqm	29%	28%	30%	22%
500-1,000 sqm	26%	25%	10%	9%
1,000-5,000 sqm	25%	22%	3%	6%
5,000-10,000 sqm	2%	2%	0%	1%
10,000+ sqm	0%	0%	0%	0%

Source: GLH analysis of CoStar data

2.44 An analysis of Year’s supply or notional supply, based on a snapshot of availability on CoStar in August 2019, helps to understand how these various submarkets differ in terms of supply and demand.

2.45 Years supply is a calculation whereby the total amount of floorspace advertised as available on CoStar is divided by average annual take-up recorded on CoStar for the same area. This differs from *committed supply* as determined by planning authority monitoring data where allocations are not yet available to businesses as not built nor having planning permission. The formula for notional supply is represented as such below:

$$\text{Years Notional Supply} = \frac{\text{Current Availability}}{\text{Average Annual Floorspace Take-up}}$$

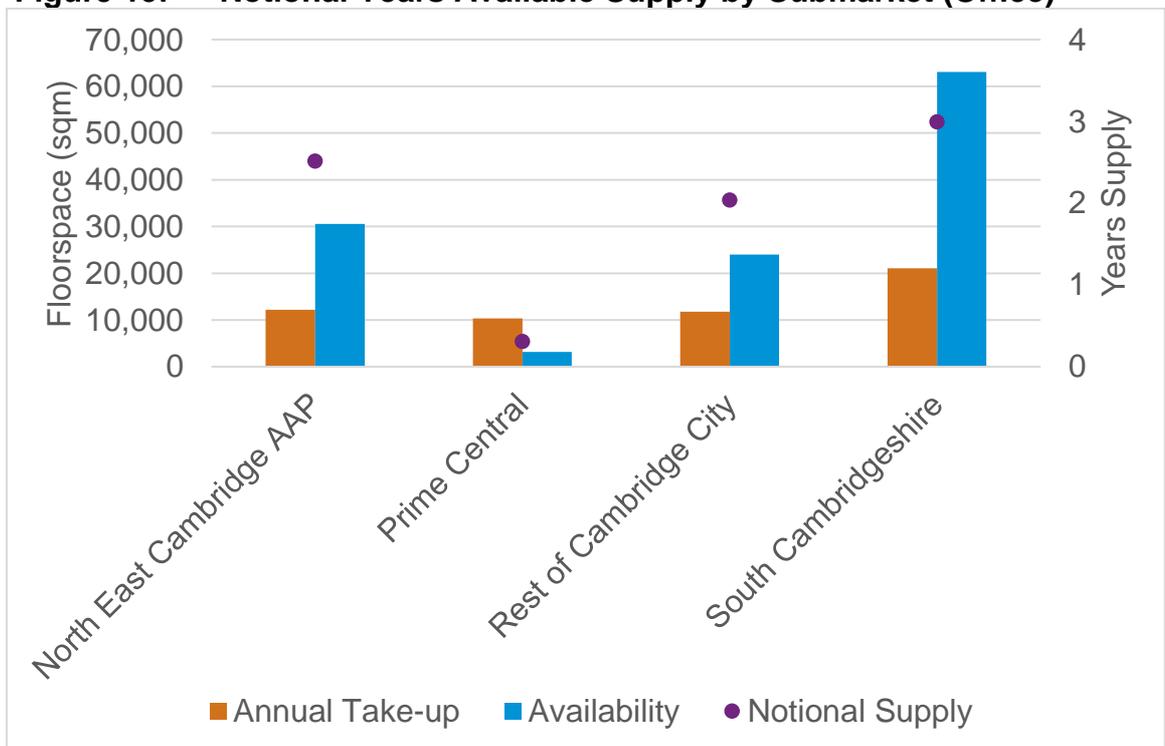
2.46 The calculation of notional available supply in years for South Cambridgeshire is articulated as:

$$\text{Years Supply} = \frac{63,094}{21,074}$$

$$\text{Years Supply} = \boxed{2.99}$$

2.47 As evidenced below, the Prime Central Submarket faces the most severe supply pressures in Greater Cambridge. There is only a notional available supply of 0.31 years in Prime Central as compared to 2.99 years in South Cambridgeshire. This first indicator suggests that other areas of Greater Cambridge have the capacity to meet some of this demand occurring in more compressed markets. Other key availabilities include nearly 10,000 sqm of advertised office floorspace in South Cambridgeshire at the Babraham Research Campus and 5,800 sqm of office floorspace advertised for The Works at the Unity Campus on London Road Sawston in South Cambridgeshire.

Figure 15: Notional Years Available Supply by Submarket (Office)



Source: GLH analysis of CoStar data

2.48 Agent consultations also determined rental values between the various submarkets. These values were given in square feet as is standard in the industry.

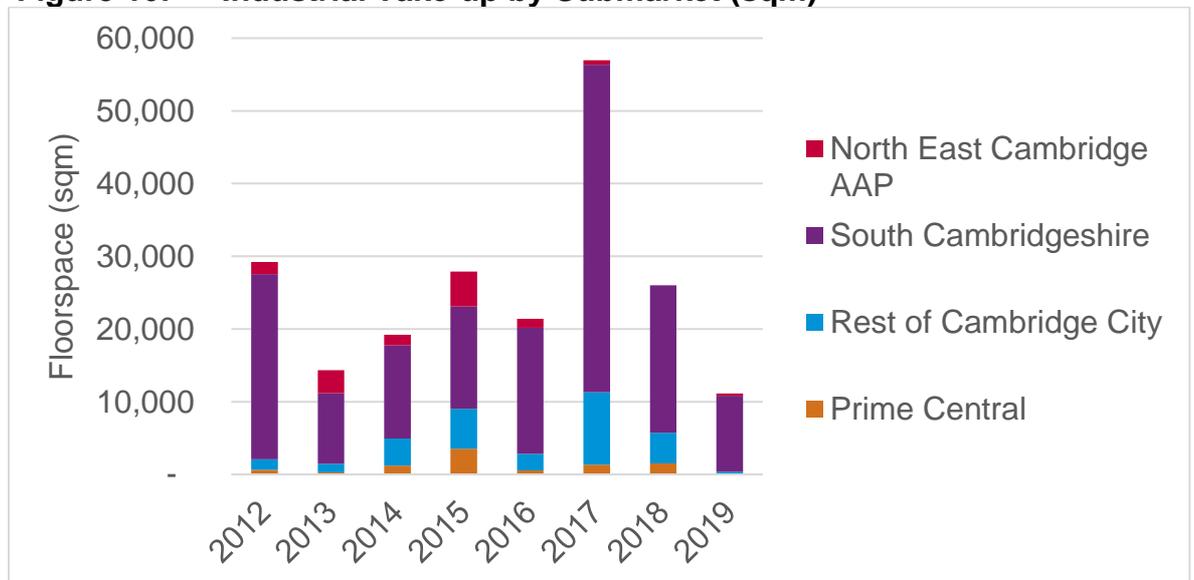
2.49 The Prime Central sees rents at around £35 per square foot (psf) or £375 per square metre (psm) for new office stock, offices in the North East Cambridge submarket typically see rents of about £30-£35 psf (£320 - £375 psm).

2.50 Further away from the Prime Central and North East Cambridge areas, rents are lower. For example, office space in parks and in the rest of South Cambridgeshire typically see headline rents around £25-£28 psf (£270 - £300 psm).

Industrial Market – Submarket Analysis

2.51 Across the four submarkets, an average of 28,000 sqm of industrial floorspace was transacted per annum between 2012 and 2018. South Cambridgeshire’s proportion is significantly higher than the other submarkets, where an average of 21,000 sqm of floorspace per annum is transacted.

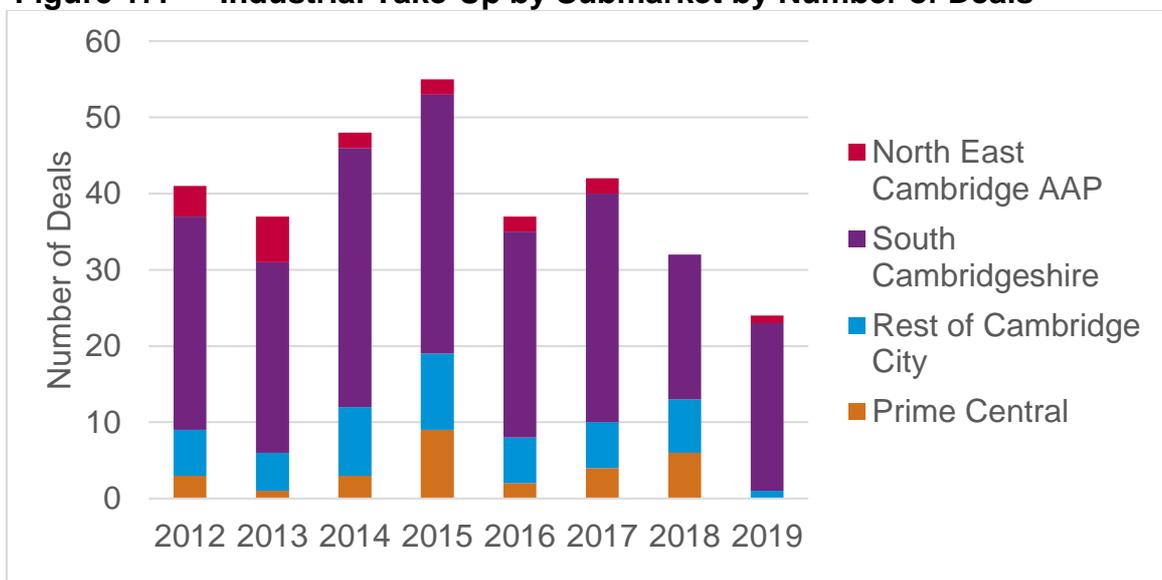
Figure 16: Industrial Take-up by Submarket (sqm)



Source: CoStar with GLH Analysis

2.52 In terms of the number of deals, South Cambridgeshire saw 30 deals on average per annum between 2012 and 2018, while the Rest of Cambridge saw 7 deals transacted on average per annum. The combined submarkets see a total of 43 deals per annum, meaning that by deal counts, North East Cambridge and the Prime Central see very little activity relative to their comparators.

Figure 17: Industrial Take-Up by Submarket by Number of Deals



Source: CoStar with GLH Analysis

2.53 In terms of deal counts, the Rest of Cambridge and North East Cambridge have distinctively greater representation in the higher size bands – inverse to the analysis of office floorspace.

Table 5: Industrial Take-Up by Size Band by Submarket, 2012-19

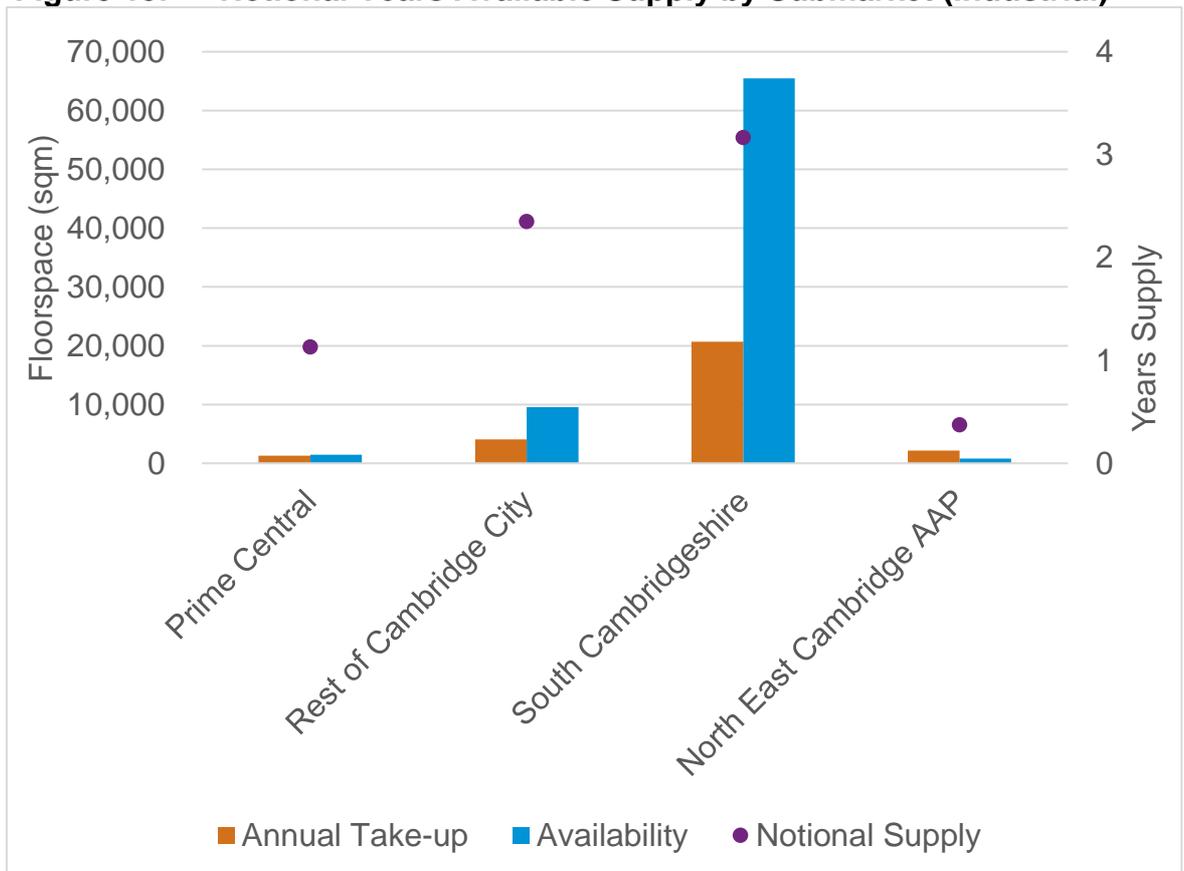
Size Band	North East Cambridge AAP	Prime Central	Rest of Cambridge	South Cambridgeshire
0-185 sqm	21%	7%	32%	34%
185-500 sqm	53%	75%	44%	29%
500-1,000 sqm	11%	18%	6%	22%
1,000-5,000 sqm	16%	0%	18%	14%
5,000-10,000 sqm	0%	0%	0%	0%
10,000+ sqm	0%	0%	0%	0%

Source: GLH analysis of CoStar data

2.54 Compared to the office market, the industrial market has a healthier average supply than the office market when looking at the advertised space on CoStar as of August 2019. However, the type of supply should be analysed further to determine if this supply is appropriate for meeting future need. 31,659 sqm of floorspace, almost one

quarter of all availability, is due to advertised space for the former Spicers Site in Sawston, Cambridge. Full planning permission for development of part of the site by Huawei was granted on 14 August 2020⁵. There is limited industrial availability in North East Cambridge, with a combined 803 sqm listed in the Nuffield Road Industrial Estate.

Figure 18: Notional Years Available Supply by Submarket (Industrial)



Source: GLH analysis of CoStar data

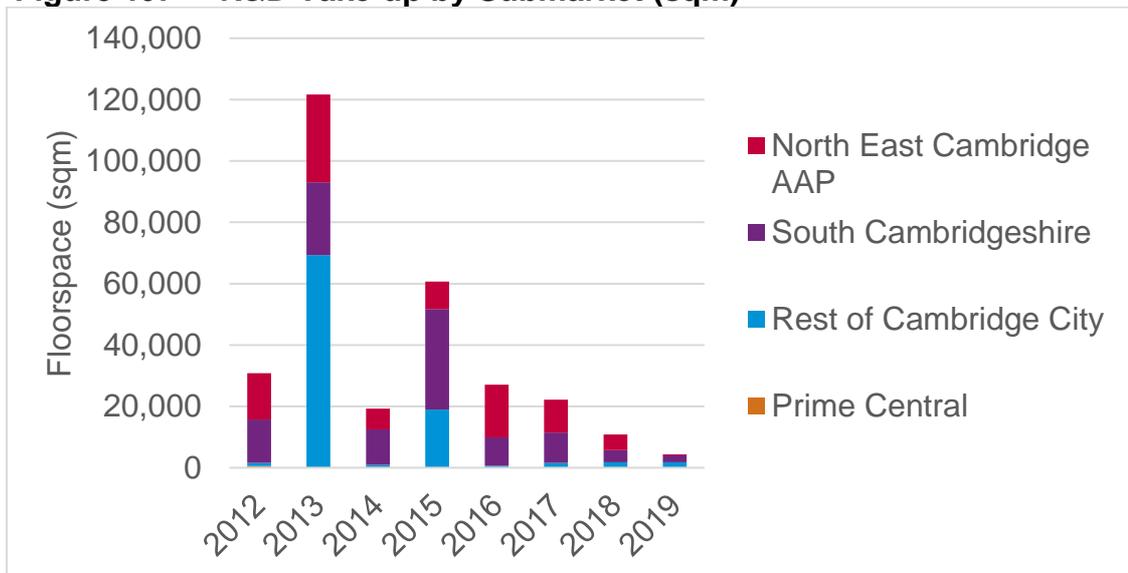
R&D Market – Submarket Analysis

2.55 Across the four submarkets, an average of 42,000 sqm of B1b floorspace was transacted per annum between 2012 and 2018. In comparing the various submarkets, South Cambridgeshire sees the greatest overall amount of take up per annum as compared to the other submarkets. An average of 15,000 sqm of

⁵ S/0158/20/FL

floorspace is transacted per year, followed by the North East Cambridge AAP area, an area that is geographically much smaller than South Cambridgeshire but sees an average annual floorspace take-up of 13,000 sqm.

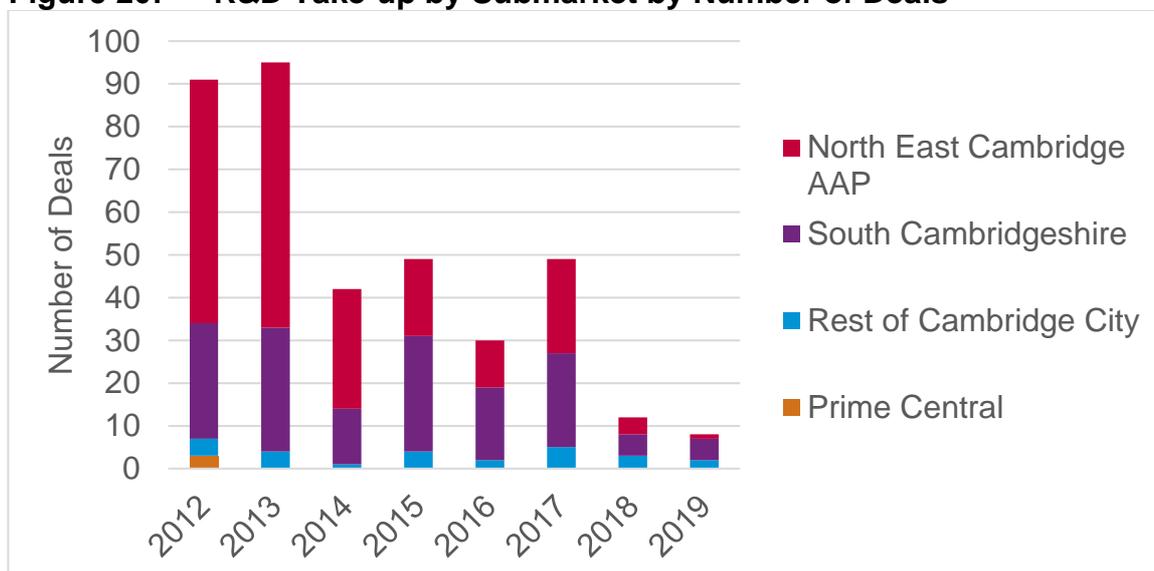
Figure 19: R&D Take-up by Submarket (sqm)



Source: CoStar with GLH Analysis (2019 data incomplete)

2.56 Across the four submarkets, an average of 53 deals per annum took place for R&D spaces, with North East Cambridge having the highest with an average of 29 deals per annum and South Cambridgeshire having 20 deals per annum. However, deals in North East Cambridge were highly concentrated in the lower size bands as compared to South Cambridgeshire.

Figure 20: R&D Take-up by Submarket by Number of Deals



Source: CoStar with GLH Analysis (2019 data incomplete)

2.57 As noted in the table below, deals tend to be much more evenly distributed across various size bands in both South Cambridgeshire and the Rest of Cambridge as compared to Prime Central, where deals tend to transact a smaller amount of floorspace.

Table 6: R&D Take-Up by Size Band by Submarket, 2012-19

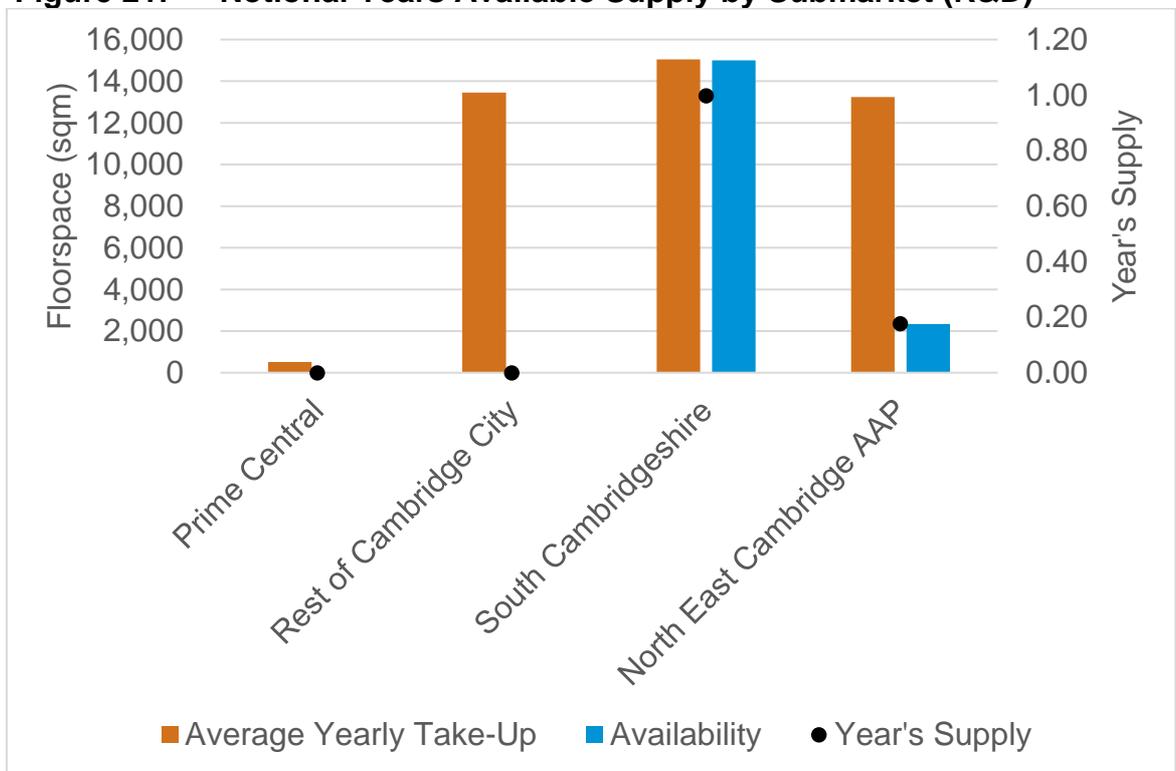
Size Band	Prime Central	North East Cambridge AAP	South Cambridgeshire	Rest of Cambridge
0-185 sqm	67%	64%	39%	20%
185-500 sqm	33%	12%	32%	48%
500-1,000 sqm	0%	11%	11%	12%
1,000-5,000 sqm	0%	11%	16%	12%
5,000-10,000 sqm	0%	1%	1%	0%
10,000+ sqm	0%	0%	1%	8%

Source: GLH analysis of CoStar data

2.58 An analysis of Year’s supply, based on a snapshot of availability on EGi in October 2019, helps to understand how these various submarkets differ in terms of supply and demand. As evidenced in the chart below, almost all submarkets are noted to have high supply pressures as indicated by EGi availability.

2.59 Only South Cambridgeshire achieves a notional supply of 1 year whereas North East Cambridge, Prime Central, and the Rest of Cambridge have very little or no advertised R&D floorspace. Low notional supply could indicate several possibilities. For one, there could be high demand for available space and thus listings are taken down quickly. In addition, a lack of suitable floorspace could mean that very little space is available to be advertised. Finally, the spaces may not be advertised on EGi.

Figure 21: Notional Years Available Supply by Submarket (R&D)



Source: GLH analysis of CoStar data

2.60 Agent consultations also determined rental values between the various submarkets. These values were given in square feet as is standard in the industry.

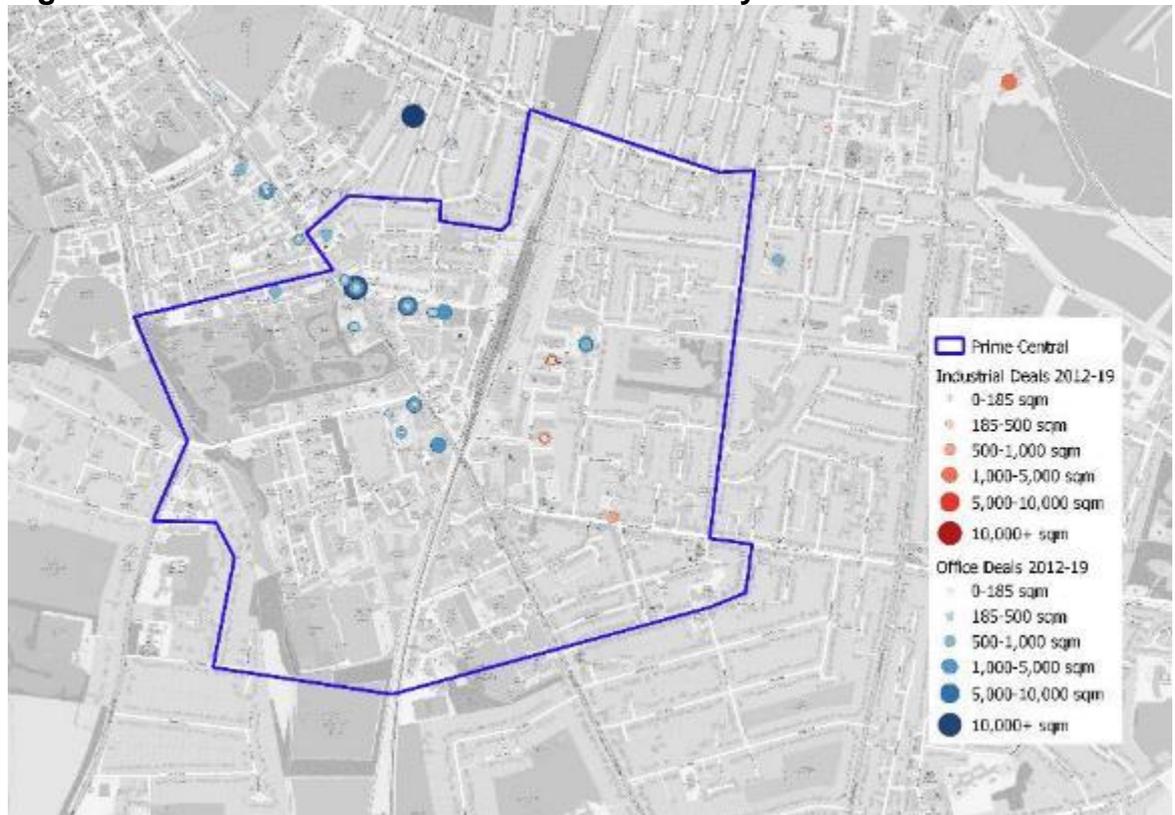
2.61 For R&D lab space it is typically £45-£50 psf (£480 - £540 psm) to account for high requirements for wet and dry lab space, especially in areas close to the city centre. Offices in the North East Cambridge submarket typically see rents of about £30-£39 psf (£325 - £380 psm) for flexible R&D space.

- 2.62 Demand is extremely high for wet labs now, as space is highly specific, and companies are finding difficulty getting flexible high quality floorspace. There is an acute need for wet labs as their space needs are higher compared to dry labs.
- 2.63 The bio-medical sector is clustered to the south of Cambridge, in places like Granta Park. Further north, Cambridge Science Park does not have much wet lab space. For wet lab requirements, agents noted that requirements vary greatly by discipline and by occupier, thus it is difficult to generalise the requirements of R&D.
- 2.64 For instance, wet labs require infrastructure like drainage and thus require around double the floorspace per employee as compared to a dry lab.
- 2.65 Rents in a “prime” science park are roughly from £30-£39 psf (£325 - £420 psm). In a less prime research park (further away from the city centre), rents are around £23-£30 psf (£250 - £325 psm) for a combination of wet and dry lab requirements.
- 2.66 As said before, demand is extremely high in prime parks. Local agents report that there is typically a long list of occupiers, for example companies like Illumina (which is building a head office in Granta Park), that are on long waiting lists of over a year.

Prime Central Submarket

- 2.67 The Prime Central submarket comprises office floorspace within walking distance of Cambridge rail station, reaching Kings Cross within 50 minutes. Key office occupiers in this area include Cambridge Microsoft (leasing 83,961 sqft or 7,800 sqm in 2013), Amazon (73,000 sqft or 6,782 sqm in 2017) and WeWork (40,000 sqft or 3,716 sqm in May 2019).
- 2.68 Prime office is the key type of industry in this submarket, with high concentrations of speculative development for said type of floorspace along Station Road.

Figure 22: Prime Central Submarket Boundary



Source: CoStar with GLH Analysis, 2019

Office

- 2.69 There have been several new construction office developments, including 50 and 60 Station Road. These form part of a new development from Aviva Investors as part of the CB1 development by Brookgate. Part of the space was leased to WeWork with a CoStar estimated rent of £34-£42 psf (£370-£450 psm).
- 2.70 According to CoStar, office inventory grew by nearly 40% in the submarket over the past five years, but vacancy has stayed mostly under 6% with two notable spikes in 2013 and 2017 as new prime office floorspace construction released stock into the market and then absorbed.
- 2.71 Commercial consultations noted that this area attracts workers looking for an easy commute from London, and that many workers rely on train travel, cycling or walking as a means of transportation. The CB1 scheme also has a mixture of student

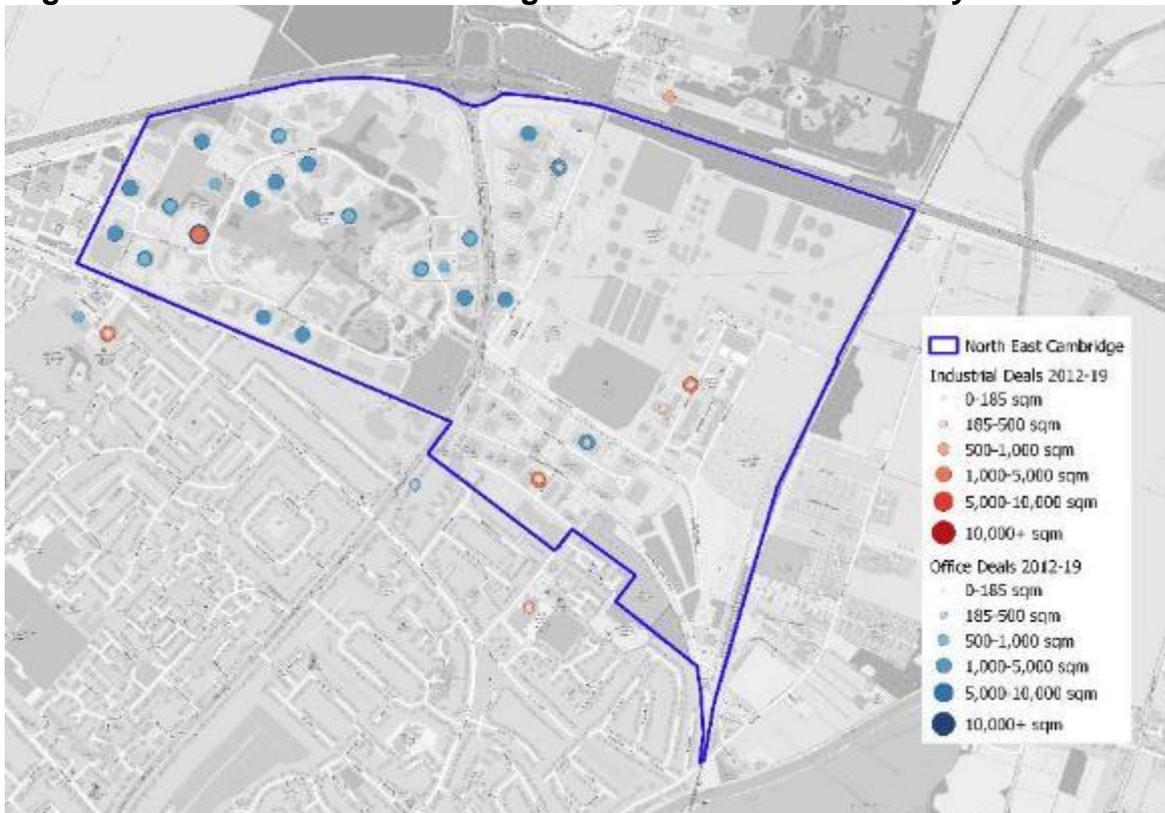
housing, retail and residential, which helps to achieve a level of dynamism needed to attract firms such as WeWork, Microsoft and Amazon.

- 2.72 Average asking rent for Prime Central office is around £33 psf (£450 psm), which is far higher than the surrounding submarkets and is £10 higher psf (£100 psm higher) than the surrounding Centre Periphery Submarket.
- 2.73 There are two more components to be built as part of the CB1 development, comprising 10/20 Station Road of 132,000 sqft (12,263 sqm), which is subject to planning permission, and 79,000 sqft (7,339 sqm) at 30 Station Road which is currently under construction. Past delivery and take-up on the site means that these buildings will be completed and leased quickly. The former Murdoch House will contain 767 sqm B1 as well as residential, a retail space, and a café.
- 2.74 Agents have noted that there are severe supply pressures for small to mid-sized office occupiers in the city core, particularly between 1,000 to 5,000 sqft (around 100 to 500 sqm). They noted that new large tenants with flexible working spaces like WeWork will be the only beneficiaries of these acute supply pressures.

North East Cambridge Area Action Plan Submarket

- 2.75 As noted previously, CoStar had a defined “Northern Cluster” boundary that has been adjusted to reflect the boundary of the North East Cambridge Area Action Plan (AAP).

Figure 23: North East Cambridge AAP Submarket Boundary



Source: CoStar and GLH Analysis

2.76 Key deals in this submarket in recent years include Takeda Pharmaceuticals taking up 48,000 sqft (4,459 sqm) in Cambridge Science Park. Agents also noted that technology firms typically prefer to be in this area if not in the City centre. 60,000 sqft (5,574 sqm) of tech was recently taken up in Cambridge Business Park.

Office

2.77 Agents noted that office space is desirable in the North East Cambridge cluster due to a presence of other “high-value” tech companies and R&D facilities. Key areas for offices include Cambridge Business Park and St. John’s Innovation Park.

2.78 As noted in the office analysis, floorspace take-up and availability remains highly concentrated in larger size-bands (above 500 sqm) in relation to other areas, however agents noted that this is not due to low demand for smaller size bands, but rather a lack of viable supply. Agents noted that smaller office floorplates of high

quality were not typically available in and around parks like Cambridge Business Park, which typically only houses HQ's of large businesses.

R&D

- 2.79 Consultation confirmed that this submarket is key for R&D due to Cambridge Science Park. The park has an R&D clause in its design and requirements, thus clustering development. There has been a shift in the past two years where some occupiers are taking space at Cambridge Bio-medical Campus adjacent to Addenbrookes Hospital on the southern edge of Cambridge.
- 2.80 R&D companies are focused on Cambridge Science Park and Cambridge Business Park within the North East Cambridge AAP area, but recently they are noted to be taking space around the Cambridge North train station. Agents explained that the recent opening of Cambridge North station in 2017 will continue to create more development opportunities, and thus many other high-value companies have now started looking to Cambridge North for easy transport links. Agents also stated that these "high value tenants" would also further exasperate the rental values for existing tenants in the area, similar to what has occurred close to Cambridge Station.
- 2.81 Agents, as they remarked similarly for office, noted that smaller R&D floorplates of high quality were not available in parks like Cambridge Science Park or St. John's Innovation Centre..

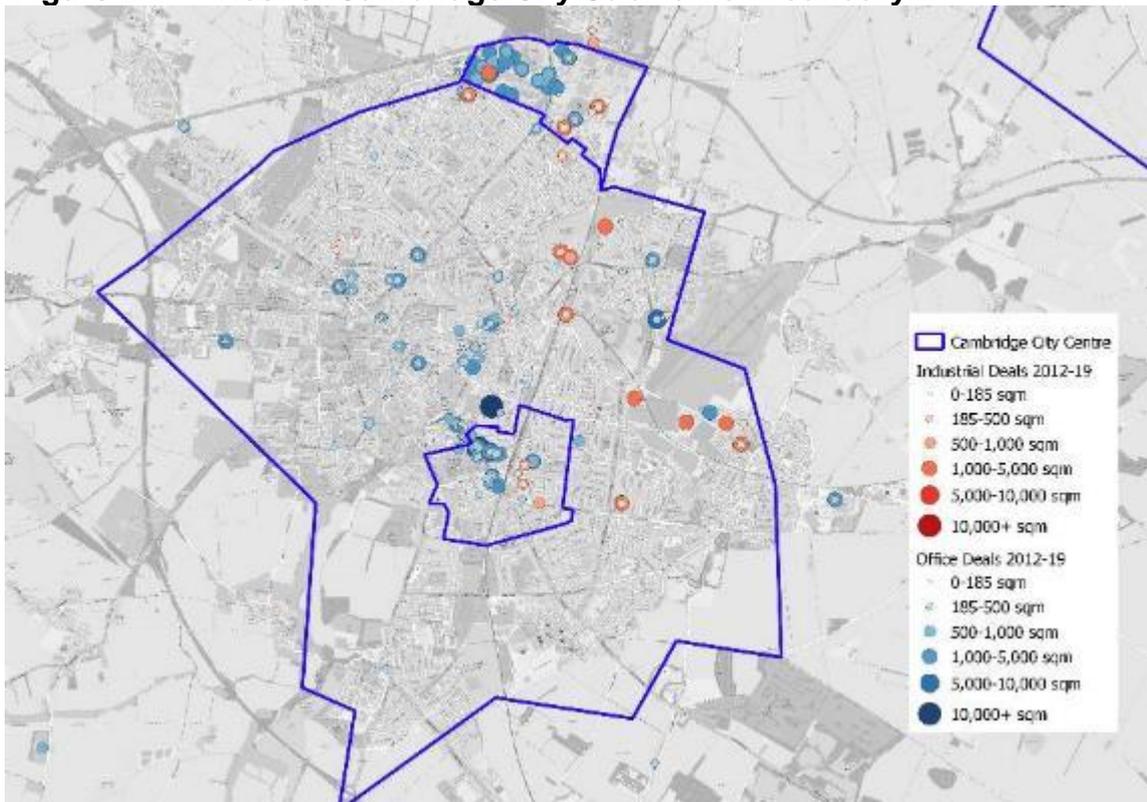
Industrial

- 2.82 Agents noted that there is very low industrial vacancy in North East Cambridge, and that trade counter rents typically start at around £12 psf (£130) but can be greater. Rents have increased considerably in recent years reportedly due to reduced industrial floorspace across Cambridge and increasing local land use pressures through the new station opening. There are a mixture of occupiers in North East Cambridge ranging from trade counter, building merchant, small light industrial to some heavy industry users such as the concrete batching plant.
- 2.83 In the context of intensification under the AAP, there is a broad agreement that the Cowley Road and Nuffield Road Industrial Estates occupiers are in some instances

suited to relocation, depending on their requirements. For example, a group of businesses operate as trade counters, and could be suitable to relocate to areas further out such as Waterbeach. However, they are attracted to North East Cambridge due to locational proximity to the population mass of the city. Relocation could diminish trade but sufficient demand could see them survive in other suitably accessible locations outside the city. Other possible locations suggested by agents include villages such as Landbeach, Milton and Histon. Whilst some trade counters and local industrial uses could move elsewhere, in reality there continues to be low vacancy of a suitable type of units in these areas.

Rest of Cambridge City

Figure 24: Rest of Cambridge City Submarket Boundary



Source: CoStar and GLH Analysis

2.84 The Rest of the Cambridge City is also known as the “City centre Periphery” on CoStar. Vacancy for all types of commercial units has remained low because of a lack of new supply. Both CoStar and several local agents have confirmed that older

and less prime office stock, which could have been utilised for SME's, has been lost to alternative uses like student flats through permitted development.

Office

- 2.85 Residential values are much higher in this submarket compared to office use. Agents noted that developers have therefore been keen to maximise opportunities for residential space on the land, which exacerbates supply in the area that would have been suitable for SME's.
- 2.86 At the smaller end of the industrial and commercial office market there are limited floorspace opportunities. One can find a prime office space for 15,000-20,000 sqft (around 1,400 to 1,800 sqm), but there is demand for smaller floorplates. There is now considered to be a shortage of office floorspace in the submarket.

R&D

- 2.87 R&D floorspace has a strong offer in other submarkets such as North East Cambridge, due to the established Cambridge Science Park with an explicit R&D clause, or in South Cambridgeshire with parks such as Cambridge Research Park (Landbeach), which have ample advertised floorspace for tenants. This submarket, despite the draw for R&D in other submarkets, is viewed to be attractive due to the proximity of the University West Cambridge Campus and other large institutional centres.
- 2.88 The submarket thus features key clusters of R&D employment sites around the city centre, University of Cambridge and Addenbrooke's Hospital, which also features the Cambridge Biomedical Campus.

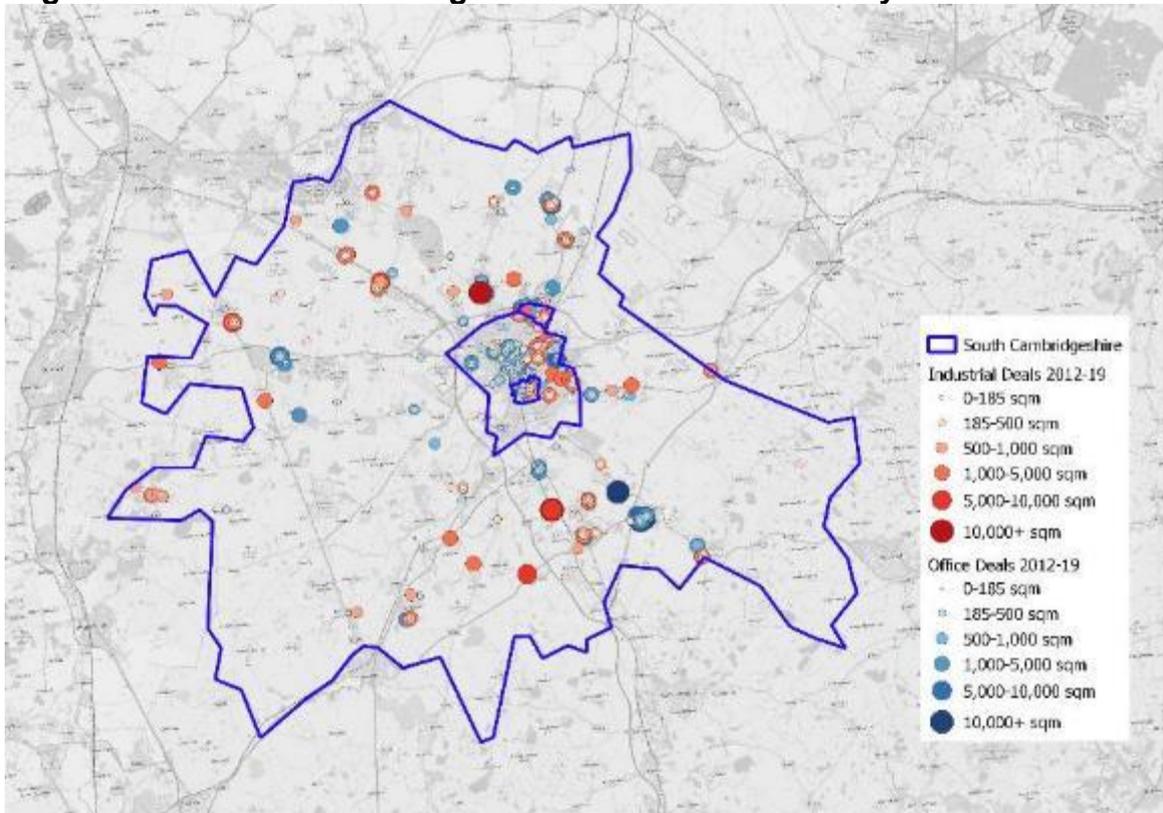
Industrial

- 2.89 The industrial stock is dominated by estates of a single trade, such as accounts occupiers, and they have a strong interest in being located around the centre of Cambridge. Such tenants include the likes of Travis Perkins and Huws Gray Ridgeons. Agents noted that these occupiers are willing to pay strong headline rents against their smaller more local competitors.

- 2.90 In the industrial market, trade counters are typically popular in this submarket, and tenants are looking for 3,000-6,000 sqft (around 250 to 650 sqm) in size but are having difficulty finding affordable rents in recent years. Some supply could, according to agents, come from the Travis Perkins site which is up for redevelopment on Devonshire Road, but most of the time space is not available at a reasonable price in the submarket for typical small sheds.
- 2.91 The typical price point for trade counters and other sheds, as determined by agents, is £15.00-£15.50 psf (£160-£165 psm) in industrial parks around the Rest of Cambridge City such as the Coral Park Trading Estate along Newmarket Road, but more secondary areas are Coldham's Road, and Kings Court have rents of £12.00-£13.50 psf (£130-£145 psm). In terms of additional supply of industrial floorspace, standalone units in the Rest of Cambridge City of 25,000 sqft (2,300 sqm), trade counters and other self-storage occupiers would be taken up very quickly if brought to market.

South Cambridgeshire

Figure 25: South Cambridgeshire Submarket Boundary



Source: CoStar and GLH Analysis

- 2.92 The South Cambridgeshire submarket has the same boundary as the South Cambridgeshire authority, with the notable exception of the Cambridge Science Park and St. John’s House, which for the study is part of the North East Cambridge submarket. The South Cambridgeshire submarket surrounds the Prime Central, North East Cambridge and Rest of Cambridge Submarkets.
- 2.93 The areas within this submarket include the peripheral areas of the A14 comprising Girton, Histon, and Milton, along with other key employment areas including Babraham, Granta Park, Duxford, Melbourn, Cambourne, Bar Hill, and Waterbeach. The largest office parks include Granta Park and Cambourne Business Park.
- 2.94 According to agents, there is very little vacancy of a suitable type across both industrial or office markets. Overall for the submarket, agents noted that lower rents make it attractive in some sense, but that transport and clustering of “innovative”

firms, along with attracting a highly skilled workforce mean that the South Cambridgeshire submarket will have challenges establishing these parks, such as Cambourne, in relation to those closer to rail stations or with an institutional tie.

- 2.95 Agents noted that small scale industrial uses being priced out of areas closer to central Cambridge and the North East Cambridge AAP area could find additional capacity in small areas in Histon and Milton but were not able to identify specific sites.

Office

- 2.96 Examples of office occupiers in this submarket include Nokia Networks UK and Vinci Construction in Cambourne Business Park, and Medimmune, Illumina and Gilead Sciences in Granta Park.
- 2.97 At the smaller end of the office market, occupiers are being pushed out from Cambridge Centre, according to agents. For example, one can find an office for 15,000-20,000 sqft (1,400-1,850 sqm), but often these floorplates do not support new small to medium enterprises that want smaller floorplates.
- 2.98 As noted in other submarkets, office workers are very sensitive to transport connections to the out of Cambridge business parks. Thus, many occupiers prefer their prime offices in either the Prime Central submarket or North East Cambridge submarket. Enhanced transport connections would help to change this perception.

R&D

- 2.99 In terms of R&D, agents noted a requirement for mechanical and electrical (M&E) specifications, meaning that this type of occupier requires very specific spaces with provisions for wet and dry labs.
- 2.100 North East Cambridge and the area around the university have, according to agents, the most “on offer”, however South Cambridgeshire research parks are noted to be becoming more attractive for those looking to congregate with other research groups.

- 2.101 For example, Cambridge Research Park (Landbeach) is becoming more attractive to science and research tenants. The challenge for this park, as it was noted for other South Cambridgeshire parks, is a question on how people get to the location. Many tech workers were noted as preferring not to drive and thus difficult to convince them to commute beyond the major train stations.
- 2.102 Transport links are improving but at a slow rate, however this is to be caveated that improvements to the A10, and public transport improvements such as the Waterbeach Station move (which includes cycling infrastructure), are proposed in the Local Transport Plan in South Cambridgeshire.

Industrial

- 2.103 Older industrial areas are changing and thus are affecting distribution of small-unit industrial sheds in Greater Cambridge. According to agents, industrial occupiers were paying £4-£5 psf (£45-£55 psm) for sheds historically for many years. Supply pressures recently, however, mean that floorplates of 2,000-10,000 sqft (185-930 sqm) have suddenly experienced an increase of rents to up to £10 psf (£110 psm).
- 2.104 This affordability issue could price certain small floorplate industrial units out of Cambridge and into Landbeach, Waterbeach and other peripheral villages. Converted farm buildings could provide some supply for small industrial uses. The alternative for small industrial sheds looking to relocate in South Cambridgeshire would be to go to another area such as Milton or Histon, however agents cited traffic issues and lack of available space as impediments for relocation.
- 2.105 Although the logistics market is much stronger in places such as Peterborough, there is still a market for “last mile” logistics companies in South Cambridgeshire. For example, Hermes, DHL tend to have warehouses away from the centre of Cambridge. One example is the DHL and Supply Plus warehouses in Papworth Business Park, where rents are lower than in the city centre but where occupiers can still deliver to customers in Greater Cambridge quickly and efficiently.

- 2.106 Demand for parcel deliveries from customers and the corresponding business need for warehouse space has steadily increased over the past five years. For example, one agent cited that one non-disclosed company recently bought a warehouse right on the edge of Cambridge, where someone will deliver via bicycles as opposed to lorries.
- 2.107 Agents also noted that there has been a “big appetite” recently for owner-occupied buildings. Logistics occupiers were cited to have been waiting for a “certain product” to come to the market but often have not been able to find suitable floorspace.
- 2.108 Rents in areas across South Cambridgeshire for trade counters was noted to be increasing in the past few years. Agents noted that these trade counters typically require being within 3 miles of the city centre. Areas such as Bar Hill and Waterbeach, for example, were noted to have rents rise to around £8-9 psf (£85-£100 psm) for suitable trade counters. Finally, prime trade counter stock in this submarket is within the range of £15.50 psf (£170 psm), which would only be afforded by national chains.

Conclusions

- 2.109 Greater Cambridge currently has a strong office market, which has experienced floorspace gains. Over the past 17 years, Greater Cambridge’s office stock has seen moderate growth from 634,000 sqm in 2000/01 to 907,000 sqm in 2018/19. This represents a 41% growth over this period and an annual growth rate of 2%. It is to be noted, however, that most office floorspace growth is occurring in South Cambridgeshire.
- 2.110 Over the past 17 years, Greater Cambridge industrial stock has grown from 1,095,000 sqm in 2000/01 to 1,145,000 sqm in 2018/19. This represents a 5% growth over this period and an annual growth rate of 0.2% per annum. However, Cambridge has lost nearly a third of its industrial floorspace over the same period while South Cambridgeshire achieved larger gains in absolute terms.
- 2.111 Deals for both office and industrial tend to cluster in the city around North East Cambridge and along key transport corridors and hubs in South Cambridgeshire.

- 2.112 In terms of submarkets, office floorspace transactions tend to be in higher size bands in the submarkets of Prime Central and North East Cambridge. Backed by agent commentary, the evidence shows that there is limited supply in these two submarkets, especially for smaller occupiers looking for quality space. One of the reasons for this lack of supply is permitted development along with high residential values results in these buildings being converted to student housing or other residential uses.
- 2.113 For the industrial markets, the greatest amount of floorspace transacted in both number of deals and floorspace were in the South Cambridgeshire and Rest of Cambridge City submarkets. According to agents, there is some capacity subject to availability for smaller industrial units to move from areas within North East Cambridge to surrounding peripheral market towns and large villages within a 10 mile-drive of Cambridge.
- 2.114 R&D deals almost exclusively transacted in parks with a clustering or R&D clause. Deals tend to be much more evenly distributed across various size bands in both South Cambridgeshire and the Rest of Cambridge as compared to Prime Central and North East Cambridge, where deals tend to be in smaller size bands. There are acute availability pressures across the various submarkets for R&D, with consultations revealing that there is a shortage of good quality and available space for occupiers.

3 ECONOMIC CLUSTERS IN GREATER CAMBRIDGE

Introduction

3.1 This section considers the challenges and opportunities faced by different sectors and clusters in the Greater Cambridge area, including locational and workspace requirements for businesses of different sizes and, broadly, different lifecycle “stages”. The principal purpose of the review is to inform the development of future planning policy.

3.2 The information presented has largely been gathered through engagement with a range of stakeholders from the private, public and third sector operating in or with interest in Greater Cambridge. These include:

- Babraham Research Campus
- Cambourne Business Park
- Cambridge Ahead
- Cambridgeshire Chambers of Commerce
- Cambridgeshire and Peterborough Combined Authority
- Cambridge Science Park
- East Cambridgeshire District Council
- Federation of Small Businesses
- Greater Cambridge Partnership
- Huntingdonshire District Council
- Institute for Manufacturing
- Make UK
- One Nucleus
- Opportunity Peterborough
- The Cambridge Network
- University of Cambridge Enterprise
- University of Cambridge Centre for Business Research

- 3.3 Cambridge Ahead's Cluster Insights resources (available at www.cambridgeahead.co.uk) have also been considered.
- 3.4 The narrative relating to the growth of the Greater Cambridge economy has been well documented for decades – from the original study of the Cambridge Phenomenon in 1985 to the study of the “Cambridge Cluster at 50” in 2011, to more recent work including the evidence base surrounding the Cambridgeshire and Peterborough Local Industrial Strategy (LIS). Consistent with these publications, this cluster review focuses on:
- Life Sciences (including healthcare, biotechnology and biomedical activities)
 - Information Technology and Communications (ICT) including digital technology and artificial intelligence
 - High Tech Manufacturing (the making of physical products, often a critical feeder service to other sectors)
 - Professional services and knowledge intensive services (including traditional business services and knowledge activities related to research and development not captured otherwise)
- 3.5 Activities within these clusters do not fit neatly into standard industrial classification (SIC) codes – not least because it is the overlaps between them that frequently provide the focus for innovation and growth. The groupings are more closely aligned to the Cambridge Ahead research undertaken by the Centre for Business Research which classifies Cambridge companies based on their Companies House registration and economic activities. Detailed methodological descriptions are available on the Cambridge Ahead website⁶. These definitions also align with the sector strengths set out in the Cambridgeshire and Peterborough Local Industrial Strategy (LIS) and the Cambridgeshire and Peterborough Independent Economic Review (CPIER).
- 3.6 Both the LIS and CPIER report also identify agri-tech⁷ as a sector of focus across the Cambridgeshire and Peterborough area. Engagement with stakeholders

⁶ <https://www.cambridgeahead.co.uk/cambridge-cluster-insights/cambridge-cluster-insights-for-researchers/>

⁷ The use of technology in agriculture, horticulture or aquaculture with the aim of improving yield, efficiency and profitability.

suggested that in the immediate area around Greater Cambridge, the other four clusters ought to be the principal focus. However, agri-tech is not unimportant and we do therefore consider it in the pages that follow.

Spatial Distribution of Clusters

- 3.7 Greater Cambridge has a range of key employment locations providing for the sectors referred to above. These include the city centre and the CB1 area around the main railway station, as well as business and science parks typically in campus style accommodation.

Life Sciences

- 3.8 Life sciences (including healthcare, biotechnology and biomedical activities) are strongly research intensive and require B1b wet lab or B1a/b wet/dry floorspace with supporting offices. A wet lab, or experimental lab, is a type of laboratory where it is necessary to handle various types of chemicals and potential "wet" hazards, so the room has to be carefully designed, constructed, and controlled to avoid spillage and contamination. A dry lab might have large experimental equipment but minimal chemicals, or instruments for analysing data produced elsewhere.
- 3.9 Greater Cambridge's global significance in these sectors links directly to its underlying research strengths. Many small firms in the cluster have direct or indirect links to major research centres, whether formally part of the University of Cambridge or linked more directly to the major charities (like CR-UK) and funding councils (e.g. Medical Research Council or MRC). Some have specialist property requirements (e.g. in relation to wet lab space) and some require proximity to clinical medicine. In addition, particularly since the opening of the Francis Crick Institute near St Pancras, the importance of links with London is growing.
- 3.10 Within this context, there are a number of notable concentrations. Most significant are Addenbrooke's Hospital and Cambridge Biomedical Campus on the southern edge of city; here, the prospect of a Cambridge South railway station is likely to be important in relation to future growth. Further out, there are major centres across the south and south east of South Cambridgeshire including Babraham Research

Campus, Wellcome Trust Genome Campus (Hinxton), Granta Park (Great Abington), Sagentia Research Park (Harston) and – further south – Melbourn Science Park. Other key hubs include Cambridge Research Park (Landbeach) to the north of the city, and St John’s Innovation Park and Cambridge Science Park at the north east edge of Cambridge.

- 3.11 According to Cambridge Ahead there are around 350 life sciences businesses operating in Greater Cambridge. These vary considerably in employment size. A large proportion of businesses employ between 10 and 50 people. A small number of businesses employ less than 10 people which are mostly spin-outs and around 20 businesses employ over 150 people⁸.

ICT and Professional Services

- 3.12 ICT and Professional Services floorspace needs are typically B1a offices or B1a/b dry lab with offices. They are considered together here given the similarity in their accommodation needs. Professional services typically focus on B1a offices at densities of around 9 sqm in Cambridge including NEC but rising up to 12 sqm in office park locations where space is less of a premium. ICT services are similar however their dry lab B1b space might include a range from computer hardware development testing to gaming and virtual reality screen rooms. Agent feedback indicates that such spaces are comparable to office densities but can in some instances be higher.
- 3.13 The high concentration of jobs locating in and around the city itself reflects the historic role of Cambridge as a regional employment and services centre and the related agglomeration benefits. This has been reinforced by recent development patterns: the city centre, Station Road and Hills Road have seen the delivery of major new office buildings, catering to the accommodation needs of businesses particularly in ICT and Professional Services.

⁸ www.cambridgeahead.co.uk

- 3.14 These sectors also have a presence outside the city centre. Well-established locations include most prominently Cambridge Science Park in north east Cambridge which whilst hosting a range of life sciences firms also has a very significant presence of ICT businesses including Toshiba and Huawei. Further locations include Cambridge Research Park (Landbeach) and Cambridge Innovation Park (Waterbeach) to the north of Cambridge, St John's Innovation Park, Cambridge Business Park and Cambourne Business Park to the west of Cambridge.
- 3.15 The Cambridge Compass Enterprise Zone includes land at Northstowe, part of Cambourne Business Park and Cambridge Research Park (Landbeach), as well as Lancaster Way, Ely and Haverhill Research Park outside Greater Cambridge. Stakeholder feedback has suggested that the Enterprise Zone designation is having some success in stimulating growth of businesses in out of centre locations.
- 3.16 A number of locations accommodate the office floorspace needs of businesses in ICT and Professional Services alongside floorspace for a mix of other land use types. For instance, Vision Park is a well-established employment site in Histon with office floorspace and industrial floorspace.

Advanced Manufacturing

- 3.17 Consistent with national patterns, there has been a long-term decline in traditional manufacturing in Greater Cambridge with more activity occurring overseas or in areas with lower land values and cheaper labour. Greater Cambridge has seen general manufacturing businesses relocating to locations including the Midlands and Peterborough. High tech manufacturers locating in Greater Cambridge tend to benefit from supply chain requirements of other knowledge services including life sciences and ICT / digital. However, there are also very long-established advanced manufacturing businesses in the area, and there is also a strong link to research strengths, both within the University of Cambridge and more generally. Cambridge Ahead considers there to be some 700 Advanced Manufacturing firms across the area.

3.18 Across Greater Cambridge, there are a number of locations hosting advanced manufacturing businesses with specialisms in electronics, aerospace, robotics, printing technologies, etc.:

- In the north of Greater Cambridge, there are concentrations of advanced manufacturing within some of the villages - notably Waterbeach, Cottenham and Bar Hill. Businesses located in this concentration include Aquasium Technology Ltd which designs and manufactures electron beam welding and vacuum furnace equipment serving markets in the automotive, electronics and medical industries, and Xaar, manufacturers of inkjet technologies.
- In the east, there is advanced manufacturing at the Marshall Group site with Proquest European Holdings occupying floorspace alongside the aerospace engineering and defence activity at the Marshall site – albeit with Marshall Group announcing in 2019 the intention to relocate to Cranfield, Duxford or Wyton before 2030.
- In the south, there are concentrations of advanced manufacturers at Sawston, Hinxton, Duxford and Melbourn. Hexcel, an advanced manufacturer of composite materials for aerospace, defence and industrial markets, is located in Duxford and a significant employer in advanced manufacturing in Greater Cambridge with around 500 employees. Melbourn Science Park accommodates advanced manufacturing businesses such as TTP Labtech which manufactures science and pharmaceutical equipment, and Tonejet which is developing new printing/packaging solutions.
- There is a small cluster in the west including Carl Zeiss Microscopy Ltd in Cambourne.

Stages in the Business Lifecycle

3.19 Stakeholder discussions considered stages in the business lifecycle to further understand growth dynamics and the implications for commercial property. However, it is worth noting that business models vary substantially both within and

between different clusters, and conventional thinking in terms of a linear “lifecycle” may not always be helpful.

Life Sciences

- 3.20 New businesses in the Life Science sector typically have long incubation and pre-revenue periods; and in practice, many are acquired before they become revenue generating. In this context, early stage businesses typically occupy around 500 sq. ft for dry laboratory floorspace and around 1,000 to 1,500 sq. ft for wet laboratory floorspace. They often seek short term lets given the level of uncertainty and risk involved.
- 3.21 Established campuses such as Wellcome Genome Campus (Hinxton), Cambridge Science Park and Babraham Research Campus offer laboratory floorspace. Importantly, they provide space for early stage ventures on short term lets. Babraham is particularly focused on start up and grow up space offering small lab and office space with a mission of *being the best place in Europe to start-up and scale-up a life science business*⁹. The Wellcome Genome Campus offers start up dry lab space such as the BioData Innovation Centre, an incubator-style building housing genomics and biodata businesses of a range of sizes and stages of development.
- 3.22 Some businesses then transition to the scale-up stage where they start to commercialise ideas and are in a position to grow and employ more staff (although many are either acquired or simply run out of cash). At this point, they may seek to relocate to larger premises. For businesses occupying dry laboratories, they may seek to expand up to around 20,000 sq. ft and for wet laboratories, typical scale-up floorspace requirements range between 1,500 to 3,000 sq. ft. A study commissioned by Cambridge Ahead in 2017¹⁰ provides a useful overview of the requirements and specifications of life sciences start up accommodation.

⁹ <https://www.babraham.com/campus/>

¹⁰ ‘Review of Wet Lab Space and Incubator Space for the Life Sciences in the Cambridge Area’, Cambridge Real Estate Research Centre, University of Cambridge, 2017

3.23 Granta Park (Great Abington) is primarily designed for larger well-established businesses that occupy wet and dry laboratory space with floorplates ranging from 50,000 sq. ft to 97,500 sq. ft. In comparison, Cambridge Science Park has a wider range of units for each stage of the business cycle and there is scope to accommodate businesses on floorplates of up to 50,000 sq. ft. For the most part, the larger life sciences companies in Greater Cambridge are the result of acquisitions and most of the major global pharmaceuticals businesses have a sizeable presence in the Cambridge area as a result.

ICT and Professional Services

3.24 ICT and professional services firms are similar insofar as both essentially rely on B1 office space to meet their accommodation needs. Beyond that, however, there are differences both within and between them and an “average” business life cycle is impossible to describe. Some ICT firms have strong links to the research base (although many do not), and professional services firms in Greater Cambridge may or may not have a strong link into the local market. Increasingly, links with London are important, and developments at CB1 have helped to facilitate these due to the proximity to Cambridge Railway Station.

3.25 Early stage businesses typically seek flexible office floorspace often on short term let arrangements. Requirements include office buildings that offer a choice of private offices, work space that is shared with other businesses and hot desks; equally though, if businesses do start to grow, the scope for *in situ* expansion is often welcomed. Spaces that are typically required at this stage are floorspace densities of less than 1 employee per 100 sq ft. The typical floorspace requirements of start-up businesses can be just a few desks within a hot desking environment that has a range of supporting facilities and community spaces for interaction, knowledge sharing and business support.

3.26 In both ICT and professional services, the relationship between floorspace and growth are increasingly indirect. Through remote and home working, effective densities are increasing quickly and business models are evolving to be more virtual in character; many businesses will see growth without a commensurate increase in

floorspace. Equally though, within these sectors, some businesses may grow very quickly – and games companies may be a case in point. In these circumstances, it is important that appropriate office space is available so a supply of flexible offices or managed workspaces in the marketplace is needed.

- 3.27 There are many locations across Greater Cambridge that provide office floorspace for early stages in the business cycle. One example is St John's Innovation Centre where there are around 95 units designed to accommodate from two to 40 people. At St John's Innovation Centre, there is a central reception and shared common areas which support knowledge sharing and collaboration. Cambridge Business Lounge provides a central CB1 location for co working and hot desking. Outside of the city centre, Cambridge Business Park, St John's Innovation Park, Cambridge Innovation Park (Waterbeach) provide incubator space. At Cambridge Innovation Park, Stirling House provides for start-up and small businesses in a co-working office layout. This space predominately hosts businesses in high-tech, IT and professional services and occupiers benefit from the collaborative environment. At Cambourne Business Park, Regus provides flexible floorspace and offers short term let arrangements. Businesses in IT, telecommunications, research and development and professional services occupy space at Regus.
- 3.28 Larger scale office accommodation – consistent with the needs of substantial ICT and professional service firms – is available at (for example) Capital Park (Fulbourn), Cambridge Business Park and Cambourne Business Park. Cambridge Science Park provides various sizes of office floorspace – including multi-occupier buildings at around 40,000 sq. ft or floors ranging from 10,000 sq. ft. to 17,000 sq. ft. CB1 in Cambridge city centre is made up of six new office buildings ranging in total floorspace supply. For instance, One Station Square provides 129,000 sq. ft, accommodating Amazon, Deloitte and Carter Jonas; while 22 Station Road provides a total of 64,800 sq. ft hosting businesses such as Mott MacDonald, Slater and Gordon, Stace and Birketts.

Advanced Manufacturing

- 3.29 Advanced manufacturing businesses assume many different forms, and their property requirements are equally variable. Some may not have a physical product initially, although many will need to accommodate at least small scale manufacturing from the outset. As a result, they are variable in the type of space they require – this may include light industrial floorspace, but also office space and, in some cases, laboratory space. More generally, there is a need for multi-purpose buildings - sometimes with either industrial, laboratory or storage floorspace on the ground floor and office floorspace used for administration on the floor above.
- 3.30 Some locations such as industrial estates in Histon and Impington, Sawston, Melbourn Science Park, and Cambridge Research Park respond to the floorspace needs of advanced manufacturers. For instance, manufacturers at Melbourn Science Park such as TTP Labtech and AstraZeneca design, make and package technologies to support the life science applications on site. Floorspace at Melbourn Science Park has flexible buildings that are adaptive for general purpose laboratories and manufacturing space. Across Greater Cambridge, there are examples of advanced manufacturers graduating from specialist to more generic space as they grow. One example mentioned during our consultations was Kaizen Technology. It started in Melbourn Science Park ten years ago and has grown to 40 employees; it has outgrown the laboratory/industrial floorspace at the park and relocated to an industrial estate on the south of Melbourn village.

Locational Factors

- 3.31 There are various factors influencing the spatial distribution of key sectors in Greater Cambridge. Some relate intrinsically to the nature of business models and others are driven more straightforwardly by cost considerations. Factors mentioned by stakeholder consultees are considered in outline below.

Clustering and Agglomeration

- 3.32 Clustering and agglomeration benefits are well documented in economic literature – see “Cambridge Cluster at 50” amongst others. Clustering benefits occur at the site

specific (exchange of ideas, information, resources) and wider area level (pool of labour, concentration of businesses). Clusters termed in this report are typically identified at the Greater Cambridge level.

- 3.33 Clustering and agglomeration benefits are most obviously applicable to the life sciences. This reflects close links to the research institutions and – in some cases – the need for proximity to clinical medicine. It may also be in part a consequence of very specialist requirements in relation to property. The Cambridge Biomedical Campus which is located alongside Addenbrooke’s Hospital is important in these terms where there are tangible proximity benefits. The Wellcome Genome Campus (Hinxton) is also a major research-intensive hub; it now has a very significant expansion plan with a planning committee resolution to grant planning permission. These instances have benefits from site-specific exchange of ideas and materials. However the development of other campus / business parks across the study area – not least Granta Park - demonstrates the ability of life sciences companies to grow around Greater Cambridge – recognising the footprint of the specialist labour market and the fact that not every life sciences business requires adjacency to a research centre or hospital.
- 3.34 Businesses in the other sectors under consideration generally have less of a requirement for proximity – although across Greater Cambridge’s knowledge-based economy, there are benefits associated with knowledge spill-overs, access to specialist finance, and a very distinctive local labour market. These may well not be fully codified, but they are important nevertheless and they are a more general expression of clustering and agglomeration. The concentration of ICT businesses in Cambridge Science Park / Business Park and surrounds is recognised as the most desirable location for office / dry lab R&D premises although perhaps the critical mass and proximity to Cambridge as a labour pool more important than the proximity to other businesses.
- 3.35 Clustering proximity requirements and benefits vary on a sector to sector and business to business level. Skill specific labour availability is a key driver for

Cambridge clusters, linked to the historic research institutes. Location specific growth allows for a concentration of activity and sharing of amenities – such as the Wellcome Genome Campus (Hinxton). However many individual locations have physical growth constraints requiring alternative but reasonably accessible development opportunities. Whilst there are initial start up costs to this, examples across the area demonstrate that new concentrations can be developed given investment and suitable access.

Affordability of Floorspace

- 3.36 Office rents are around £40 per sq. ft. for Grade A floorspace in the city centre. Businesses in the ICT sector including in particular software development and the gaming sector typically prefer city centre locations where there is the strongest competition for floorspace. Google, Microsoft and Apple occupy floorspace near to the station (in part because of the access it provides to London).
- 3.37 In out of centre locations, rental values are around £25 to £28 for prime floorspace and around £22 per sq. ft. for secondary floorspace. The rental value in some out of centre office parks can carry a premium as the park provides amenities. For example, Cambridge Research Park (Landbeach) and Cambridge Innovation Park (Waterbeach) have on site fitness training facilities, food retail options and open space.
- 3.38 The rental value of wet laboratories is generally consistent across Greater Cambridge at around £60-£65 per sq. ft which includes service charges and business rates. Given the rental values are fairly consistent across the study area, stakeholders identified that rather than affordability, the issue is more about finding available floorspace in campuses with flexible tenancies.
- 3.39 As land values and rents continue to increase, existing industrial users are moving to established estates on the fringe of villages. In the Advanced Manufacturing sector, businesses tend to locate in established industrial estates in out of centre locations. They tend to have larger floorspace needs and are not dependent on the benefits offered by more central locations with higher costs. Rental values for the industrial

floorspace businesses in this sector occupy reach around £16 per sq. ft but can vary considerably and these companies may be likely to seek owner occupied stock. This value is greater than general industrial rents which are achieving around £12.50 per sq. ft. for prime industrial stock.

Access to Public Transport

- 3.40 The city itself is relatively well connected in terms of public transport and sustainable modes of movement. However, out of centre locations are largely car dependent. Access to a Cambridge railway station is a common requirement for the ICT and Professional Services sector as businesses rely on access to markets and a large labour pool, including people residing in London. In particular, businesses located in the CB1 area are reported to recruit staff from London (who commute daily). Access to the station is also increasingly important in relation to life sciences, particularly since the opening of the Francis Crick Institute at St Pancras.
- 3.41 Across the board therefore, access to international transport hubs (including St Pancras station, Heathrow, Luton and Stansted airports) is a factor for many businesses; in Cambridge, many operate on a multi-national basis even when they are small and new (through international collaborations and the like).
- 3.42 The Guided Busway provides a link from Huntingdon/St Ives, firstly going through Swavesey and onto Northstowe, Histon and North East Cambridge. This is a benefit to businesses in North East Cambridge, heightening access to a wider labour pool catchment and connections to Cambridge and London beyond. It is also likely to increase the viability and sustainability of future residential development at connected locations.
- 3.43 Cambridge North Station has been identified as a catalyst for further economic development. Occupiers across the ICT sector have indicated that land in proximity to the station would be a desirable location for Grade A (or prime) office floorspace with flexible floorspace and incubator space. Cambridge North's improved accessibility occurs in a location where there is pent up demand for further commercial space – North East Cambridge.

3.44 There are a number of further infrastructure proposals such as East West Rail, Cambridge South station and Cambridgeshire Autonomous Metro (CAM). There is potential for these to enhance economic growth and agglomeration through improved labour mobility. However it is not automatically the case that new accessibility nodes facilitate commercial investment in untested commercial locations. Ashford's commercial quarter following HS1's completion has not attracted investment out of London, for example, with the agglomeration benefits of the city preferred to the trade off of lower rents elsewhere.

Access to a Labour Force

3.45 Access to appropriately skilled labour was consistently identified as a critical factor across all the key sectors. In this context, reference was frequently made to the affordability of housing and the challenges presented through it.

3.46 Stakeholders emphasised that there is a skills gap in Greater Cambridge caused by house price affordability; this was identified specifically in relation to technicians employed by life sciences businesses, but it is a more general challenge. Whilst there is a strong pool of scientists with higher qualifications (and salaries), technicians are in demand and filling these positions is currently a challenge.

3.47 The expansion of the Wellcome Genome Campus (Hinxton) incorporates both employment and housing (around 1,500 homes of which 30% to be affordable). Alongside a new school, a nursery and community facilities, this demonstrates one approach to ensuring a localised workforce with supporting facilities.

Access to Amenities

3.48 Access to amenities tends to be a secondary consideration but is increasingly important. Both city and out-of-centre sites offer amenities of varying quality. City office locations offer competitive health and wellbeing benefits such as access to public transport, gyms, social and retail amenities. At out-of-centre locations, amenities are more variable. In most cases, there is open space and a selection of

on-site retail and recreation options¹¹. Amenities in the out-of-centre research campuses can include a service charge in annual rents for upkeep of campus facilities such as a gym and nursery.

- 3.49 Access to amenities is an important locational factor for some businesses. For example, stakeholders suggested that the gaming sub-sector is leading the trend with some businesses investing in quality floorplan finishes and on-site amenities to retain employees and attract new labour. Ensuring employees have access to quality amenities is critical for small to medium sized businesses in this sector as they are competing with what multinational corporations such as Microsoft, Amazon and Apple can provide.
- 3.50 The innovation district concept, explored in the North East Cambridge Area Action Plan Issues and Options 2019 Consultation, provides a more integrated and supporting environment for employment clusters where all the key amenities drive knowledge intensive activity.

Challenges and Opportunities

Life Sciences

- 3.51 The sector is continuing to grow. The global and UK macro economic outlook is strong and investment opportunities remain positive for sector development, including the inter relationship between big data and genetics and, solutions for global health challenges. Major anticipated growth at the Wellcome Trust Genome

¹¹ For example, amenities at Granta Park (Great Abington) include a fitness and wellbeing centre, a nursery, restaurant and a sports club. Babraham Research Campus offers a nursery on site and a sports club. Cambridge Research Park (Landbeach) offers fitness classes, a café and dry-cleaning services. In the second phase of development, Cambridge Innovation Park (Waterbeach) is exploring opportunities to deliver a nursery. Currently, Cambridge Innovation Park has a gym, bar, beauty salon and café. There are limited amenities at Capital Park (Fulbourn) and compared to other out of centre locations, amenities are also limited at Cambourne Business Park at present.

Campus (Hinxton), that has a planning committee resolution to grant planning permission, as well as growth at Addenbrooke's and Granta Park (Great Abington), demonstrates confidence in the sector. Cambridge's prestigious position on the global map in terms of research indicates a positive local outlook. Whilst the life science sector shows some maturity in Greater Cambridge in terms of its depth and breadth, strong growth is anticipated to continue for the medium term given the factors noted. In the longer term constraints such as labour availability are likely to become increasingly acute.

- 3.52 Local challenges are reported to include the provision of wet laboratory floorspace which is struggling to keep up with demand. There is some wet and dry laboratory floorspace in the pipeline, with new developments including phase two land at the Cambridge Biomedical Campus, Building 420 at Cambridge Science Park and phase two land at Granta Park (Great Abington).
- 3.53 Businesses in this sector need flexible floorspace. There is currently a reported lack of flexibility in floorspace arrangements as most existing buildings are purpose-built fitouts. There is a need for future laboratory buildings to provide space for start-ups and grow-on space. Businesses based in established campuses or business parks often prefer to remain there, hence the importance of ensuring an ongoing supply across a balance of floorspace sizes. From our stakeholder consultations, there were some examples of creative responses. For example, Kymab has increased from 6 to 100 employees in six years and Babraham Research Campus has been able to continue to accommodate the growing floorspace needs of this business as other tenants have moved to other spaces on the Campus.
- 3.54 Another challenge is the lack of flexibility in length of leases for businesses that find it difficult to forecast rates of growth. Commercial developers of laboratory floorspace prefer long-term lease arrangements which are too risky for small, early stage, businesses.

ICT and Professional Services

- 3.55 The global and UK macro-economic outlook for the ICT sector is positive. The ‘Internet of Things’, development of artificial intelligence, big data analytics, online retailing, online gaming, blockchain, robotics, social media and advanced technology and computing are continually redefining the frontiers of computing capability and insight. In recent years, Cambridge has become a major employment centre for ICT taking advantage of academic research – industry collaboration and the knowledge intensive skill set. The CB1 development has created a new central premium ‘home’ for the ICT sector and local growth is anticipated to remain positive. There are ‘dry lab’ crossover requirements between ICT and advanced manufacturing for research and development purposes. However, the primary need is in traditional and flexible office space. Wider professional services are considered more of a linked function to the growth in both the ICT and life sciences as well as in their own right.
- 3.56 Growth in the sector is not anticipated at the rate of the life sciences. In part, this is because Cambridge competes on the global stage with Silicon Valley and other locations that are central to the evolution of ICT.
- 3.57 A challenge for start-ups and small businesses in this sector is finding flexible quality floorspace. Stakeholders identified that a number of start-up and small businesses particularly in software and gaming are taking up floorspace in the city centre. Stakeholders also reported demand for flexible floorspace or incubator space in out of centre locations for start-ups and small businesses. Affordable floorspace in proximity to where employees live away from traffic congestion in the city centre is considered to be in demand.
- 3.58 Another challenge this sector faces is salary competition. Major corporations such as Microsoft have the capacity to pay larger salaries and therefore attract data scientists and other technology-based employees. Smaller scale businesses and start-ups cannot compete. For University of Cambridge, the challenge is finding staff to teach the next generation of the tech labour force as they are competing with the salaries Microsoft and Apple pay. In part the competition is a result of a general lack

of local labour to meet requirements, hence the importance of access to wider labour markets – not least London.

- 3.59 Equally there have been cases of large tech firms acquiring tech-start-ups that have originated in Greater Cambridge. For instance, VocallQ is a speech technology start-up that was acquired by Apple in 2015 and transformed into a local Siri development centre. This demonstrates the dynamism in the Cambridge ICT sector and the ability of small businesses to innovate despite existing challenges.

Advanced Manufacturing

- 3.60 The global outlook for advanced manufacturing is reasonably strong. However, in terms of UK macro economics whilst it is an important sector, employment growth is expected to be limited overall. The outlook for advanced manufacturing in Greater Cambridge is more variable compared to ICT and life sciences. However, it is a growth sector and often a linked sector to life sciences and ICT in terms of supply chain and product development, from supporting medical devices to high grade materials for computing, automation testing and big data processing. There are clear regional and national aspirations in advanced manufacturing. However, Cambridge's competitive advantage is less defined than in the other sectors. The potential for growth is considered to be lower than for ICT and life sciences but still important both as a supply chain provider and in its own right.

- 3.61 Whilst no accommodation-specific challenges have been identified, it is of note that there is a limited pipeline of future new high spec industrial stock, perhaps other than at Bourn Airfield or Cambridge Research Park. There is however dry lab / ICT space including at Cambridge Science Park which is likely to suit early phase advanced manufacturing businesses.

Agri-tech

- 3.62 As noted above, whilst there are agri-tech strengths across the wider region, the concentration is less distinctive in Greater Cambridge and clustering is less apparent compared to other sectors above.

- 3.63 It is useful to refer to the inspector's findings for a refused appeal (APP/W0530/W/18/3210008) against an application for a dedicated agritech park (S/4099/17/OL). This reports that there is an established presence of agri-tech businesses in and around Cambridge. These include some large multinational Agri-tech operators, including Bayer Crop Sciences, Monsanto, Syngenta and Certis. Agri-tech businesses and institutions are distributed around South Cambridgeshire and the surrounding area.
- 3.64 It is considered and accepted in the above appeal that agri-tech businesses occupy a range of existing business parks or locations and the cluster is dispersed throughout the area, which is not dependent on, nor does it require, co-location on a single site.
- 3.65 Employment in agri-tech is broad as it spans a number of sectors from manufacturing to agriculture. In the agri-tech sector, the relevant sub-sectors with a strong presence in Greater Cambridge include the growing of seeds, grains, plant breeding, agriculture and horticulture, agrochemicals, food processing and research centres. Businesses in this sector undertake a diverse range of activities.
- 3.66 In the north of Greater Cambridge, the agricultural element of the agri-tech sector has a presence in Swavesey, north of Landbeach and land between Girton and Impington (NIAB innovation farm). In the south, agri-tech businesses are at Cherry Hinton, Thriplow and west of Junction 9/M11. The technology facing element of the sector is inter dispersed with other technology based businesses at existing business parks.
- 3.67 Artificial Intelligence and data analytics is one of many sub sectors of the emerging Agri-tech sector and has been recognised by the World Economics Forum as being key to achieving sustainability goals (both environmental and food). For instance, intelligent algorithms applied to data on atmospheric conditions and soil moisture are dramatically reducing the amount of water needed for agriculture. New Agri-tech companies in Greater Cambridge such as Agrilnsight, Herdsy, KisnaHub, Agrimetrics and Dogtooth Technologies are working towards achieving food

sustainability. For example, Herdsy is a business specialising in farming technology that provides tags to measure biomedical data and track the location and movement of animals. The data is automatically transferred into the cloud-based Herdsy account. For Greater Cambridge, this shows the attraction and inter relationships between traditional and ICT sector capabilities with broader clustering of the two sectors across a labour pool generating world class innovation. It also reinforces the ability of the clusters to operate across a larger spatial area.

- 3.68 A challenge for this sector is finding land that permits 24-hour operations, particularly the growing orientated operational elements. Stakeholders identified the absence of large-scale sites that support 24-hour operations as problematic. Businesses which are growing and testing produce on this basis are currently located on the edge of villages. For example, an algae growing farm operating on the edge of Fenland found site selection a challenge in the Greater Cambridge market.

Conclusions

- 3.69 This chapter analysed key sectors in terms of their spatial distribution and clustering, stages of the business life cycle, occupier locational factors, and their challenges and opportunities.

Life Sciences

- 3.70 This sector requires wet and dry lab floorspace. Significant clusters exist in established research parks where there are specific R&D clauses (Cambridge Science Park) or health-related specialisations. These parks are spread across Greater Cambridge. Whilst proximity to major research institutes/clinical centres is essential for some life science businesses, many others have demonstrated that it is possible to thrive elsewhere in the Greater Cambridge area.
- 3.71 The sector will continue to see growth. There are some local challenges to keeping up with demand for both wet and dry lab space, albeit there is additional floorspace coming forward at the Cambridge Biomedical Campus, Cambridge Science Park and Granta Park (Great Abington). Leases should be encouraged to be more flexible

along with floorplates allowing firms to change and grow as they develop through their life cycle.

Information Technology and Communications (ICT)

- 3.72 Firms in this sector are distributed across Cambridge City Centre and clustered near Cambridge Railway Station and at established business parks particularly Cambridge Science Park in north east Cambridge, along with parks such as Cambridge Research Park (Landbeach); Cambridge Innovation Park; St John's Innovation Park, Cambridge Business Park; and Cambourne Business Park to the west of Cambridge.
- 3.73 Early on, ICT firms have small floorplate requirements such as hot desks. As these firms grow, requirements increase but the imperatives around flexible floorspace often continue. Spaces like St. John's Innovation Centre and Central Business Lounge within Cambridge offer this kind of space. Out of town space can be provided in Cambridge Innovation Park (Waterbeach) and Cambourne Business Park. Examples of larger office-style floorplates are at CB1, Capital Park (Fulbourn), Cambridge Business Park and Cambourne Business Park.
- 3.74 ICT will continue to grow and has seen positive growth in recent years due to the rise of Artificial Intelligence, big data and other e-services. There has been a rapid period of inward investment in Cambridge, particularly at CB1. A general lack of appropriate labour may be a continuing challenge to growth.

Advanced Manufacturing

- 3.75 Advanced manufacturing in Greater Cambridge has stayed competitive due to connections with research and knowledge intensive sectors. Specific clusters are in Waterbeach, Cottenham and Bar Hill and additionally Sawston, Hinxton, Duxford and Melbourn.
- 3.76 Advanced manufacturing is varied and takes many forms and may only require office space at first but will quickly adapt to requiring laboratory and dry lab / manufacturing floorspace.

3.77 There has been a long-term decline in traditional manufacturing. But there is expected to be sustained incremental advanced manufacturing growth as it is linked to supplying other growth sectors, notably life sciences. It is likely there will be a decline in the overall number of employees as productivity becomes greater, but likely there will be an increased need for floorspace.

Professional Services

3.78 This sector typically follows the same distribution as ICT due to strong linkages with knowledge intensive sectors. Key areas include the area around Cambridge Station, Cambridge Research Park (Landbeach) and established business parks across South Cambridgeshire.

3.79 Professional services may not be as directly connected to the Cambridge research market as, say, ICT. Early stage businesses seek flexible floorspace and floorplates. As with ICT, there are strong growth prospects due to connections with other knowledge intensive sectors.

4 GREATER CAMBRIDGE EMPLOYMENT LAND SUPPLY ASSESSMENT

Introduction

- 4.1 An assessment of current employment land supply in Greater Cambridge has been undertaken to identify available land that could accommodate employment floorspace in the future.

Assessment of Sites

- 4.2 To identify current employment land supply, an assessment of existing employment sites has been undertaken. This includes existing employment locations, allocated sites, vacant sites and sites benefiting from extant permission for employment use.

Methodology

- 4.3 The Cambridge City and South Cambridgeshire Employment Land Review (2008) was used as a base in identifying the list of employment sites in Greater Cambridge. Given the date of the study, the Councils' commitments and completions data was used alongside the Local Plan (2018) allocations to confirm sites for assessment.
- 4.4 A 1.0 Ha minimum threshold was applied to discount small-scale employment uses. However, in some circumstances sites below this size threshold were included if identified as an allocated employment site.
- 4.5 This generated a list of 71 employment sites across Greater Cambridge. As outlined above, the list includes existing and allocated employment sites across brownfield and greenfield locations.
- 4.6 Site visits were conducted to the 71 employment sites. The purpose of the site visits was to explore the attractiveness to the market, identify available or vacant floorspace and opportunities for development including vacant land and the potential for redevelopment or intensification.

- 4.7 A template was used to assess each employment site. Firstly, the site was assessed based on its characteristics including nature of the use, access to the strategic road network and public transport, proximity to local services, amenity issues, quality of the building stock, quality of the environment, occupiers and surrounding land uses.
- 4.8 Secondly, the site assessment template was used to identify specific opportunities for intensification of floorspace. This part of the assessment looked at the availability of land and considered the suitability, potential future uses, market attractiveness and deliverability of employment floorspace. Planning status and relevant policy was taken into account in the assessment.

Summary of Findings

- 4.9 The site assessment exercise identified the current employment land supply in Greater Cambridge taking into account availability, suitability and deliverability. As part of the assessment, vacant land was recorded which has informed the quantum of land available within the existing supply for future employment development.
- 4.10 Availability was determined by looking at vacant land on existing employment sites or greenfield land with an employment allocation or employment planning permission. Vacant land within existing employment sites refers to undeveloped plots in established industrial estates, business parks or campuses. This includes a mix of sites not recognised in local policy alongside those protected or allocated for future employment use both greenfield and brownfield.
- 4.11 The table in Appendix H of this report, shows a summary of assessed sites including total supply for each.
- 4.12 March 2019 employment land supply monitoring data was provided by the Councils, which included completions from previous years, outstanding permissions (including detailing those under construction) and outstanding allocations (no planning permission). Since March 2019, some sites have been subject to changes in employment floorspace, both gains and losses, with the information in this section

of the report updating the position (as of autumn 2019). Vacant land on existing employment areas is also identified where applicable.

- 4.13 Policy recommendations are provided for each site. These consider a ‘retain, release, protect’ approach. Retaining sites assumes that the existing policy framework will suffice, whereas sites requiring protection may have a further policy designation.

Summary of Supply

- 4.14 The Councils’ monitoring data to March 2019 has been used to provide a starting point for a supply assessment, including data on non-assessed sites across completions and commitments. The tables below provide a summary of employment land supply in Greater Cambridge as at March 2019, and also with the following amendments made to take account of the recommendations and updated information as set out within the table above:

- removal of allocated sites where Appendix H recommends considering their removal – sites at 1 & 7-11 Hills Road, Cambridge (site 1), 82-90 Hills Road & 57-63 Bateman Street, Cambridge (site 3), north of Hattons Road, Longstanton (site 28), and west of London Road, Pampisford (site 59);
- removal of remainder of extant outline planning permission at Wellcome Genome Campus (site 52) as this planning permission has lapsed, and inclusion of the land for the new Wellcome Genome Campus expansion (site 52) with resolution to grant planning permission; and
- amended anticipated floorspace and land for B uses at Northstowe (site 29) and Bourn Airfield New Village (site 61) to reflect updated information.

- 4.15 Incorporating the above provides a quantitative assessment of the full supply position.

Table 7: Summary of Employment Supply in Cambridge City (sqm) 2019

	B1	B1a	B1b	B1c	B2	B8	Total
Outline Permission	0	230	154,170	0	0	0	154,400
Detailed Permission - Under Construction	17,245	-1,820	-1,089	40	0	0	14,376
Detailed Permission – Not Started	18,025	1,472	3,214	2,586	-1,121	-1,439	22,737
Allocated	-597	11,279 ¹²	11,084	-425	-28,041	-4,491	-11,191
Total	34,673	11,161	167,379	2,201	-29,162	-5,930	180,322

Table 8: Summary of Employment Supply in South Cambridgeshire (sqm) 2019

	B1	B1a	B1b	B1c	B2	B8	Total
Outline Permission	54,480 ¹³	13,918	41,290 ¹⁴	0	-45,539 ¹⁵	1,439 ¹⁶	65,589
Detailed Permission - Under Construction	207	8,986	2,078	380	-6,073	5,908	11,487
Detailed Permission – Not Started	18,448	29,155	26,212	2,649	3,567 ¹⁷	11,196	91,227

¹² This change in floorspace is as a result of the removal of anticipated floorspace to be gained and lost on allocations at 1 & 7 - 11 Hills Road, Cambridge (site 1) and 82 - 90 Hills Road & 57 - 63 Bateman Street, Cambridge (site 3).

¹³ This change in floorspace is a result of the amended anticipated floorspace provision at Northstowe (site 29).

¹⁴ This change in floorspace is a result of the removal of the extant outline planning permission at Wellcome Genome Campus (site 52) that has lapsed.

¹⁵ This change in floorspace is a result of the amended anticipated floorspace provision at Northstowe (site 29).

¹⁶ This change in floorspace is a result of the amended anticipated floorspace provision at Northstowe (site 29).

¹⁷ This change in floorspace is a result of the amended anticipated floorspace provision at Bourn Airfield New Village (site 61), where it is anticipated that an alternative proposal to the extant full planning permission will be implemented, and therefore the floorspace provision is included in the 'allocated' figures.

Allocated	25,900 ¹⁸	37,900	39,864 ¹⁹	11,002 ²⁰	1,170 ²¹	9,849 ²²	125,685
Genome Campus expansion	150,000	0	0	0	0	0	150,000
Total	249,035	89,959	109,444	14,031	-46,874	28,392	443,987

Table 9: Summary of Employment Supply in Greater Cambridge (sqm) 2019

	B1	B1a	B1b	B1c	B2	B8	Total
Outline Permission	54,480	14,148	195,460	0	-45,539	1,439	219,989
Detailed Permission - Under Construction	17,452	7,166	989	420	-6,073	5,908	25,863
Detailed Permission – Not Started	36,473	30,627	29,426	5,235	2,446	9,757	113,965
Allocated	25,303	49,179	50,948	10,577	-26,871	5,358	114,494
Genome Campus expansion	150,000	0	0	0	0	0	150,000
Total	283,708	101,120	276,823	16,232	-76,032	22,462	624,310

Approaches to selected sites with capacity

- 4.16 Assessing each employment site in Greater Cambridge has led to a spatial understanding of where the allocations, planning permissions and vacant land is and what the capacity of each site is in potentially accommodating future employment floorspace. There are a number of substantial greenfield and existing employment

¹⁸ This change in floorspace is a result of the removal of anticipated floorspace to be gained at west of London Road, Pampisford (site 59), and the amended anticipated floorspace provision at Northstowe (site 29) and Bourn Airfield New Village (site 61).

¹⁹ This change in floorspace is a result of the removal of anticipated floorspace to be gained at north of Hattons Road, Longstanton (site 28), and the amended anticipated floorspace provision at Bourn Airfield New Village (site 61).

²⁰ This change in floorspace is a result of the amended anticipated floorspace provision at Bourn Airfield New Village (site 61).

²¹ This change in floorspace is a result of the amended anticipated floorspace provision at Northstowe (site 29).

²² This change in floorspace is a result of the amended anticipated floorspace provision at Northstowe (site 29) and Bourn Airfield New Village (site 61).

sites that contribute to overall employment land supply in Greater Cambridge. These are experiencing varying degrees of demand with some under current development or recent completions, but others which have been long term allocations. Drawing on lessons from the Cambourne development experience, commentary is provided in terms of how individual sites might respond to meeting growth needs and what measures might be considered in bringing them forward. The sites considered are:

- Waterbeach New Town
- Cambourne Business Park
- Cambourne West
- Bourn Airfield
- Northstowe

4.17 There are a number of issues relevant to delivering employment space in new settlements which are useful to consider in the round. These include (excluding direct policy levers):

- Placemaking
- Proximity to existing employment areas or clusters
- Maturity of settlements
- Demand and supply across wider property markets
- Accessibility
- Institutional investment

4.18 **Placemaking** – modern workers increasingly value amenities at or near to the workplace. City and town centres are attractive with a diverse range of leisure and retail activities. They also facilitate interactions with other professionals and businesses. Out of town employment parks are in many instances seeking to invest in a greater level of amenity and diversifying uses, for example providing restaurants, creches, gyms and quality open spaces. A challenge for new settlements (in general as well as for employment) is to ensure a quality placemaking strategy that attracts both residents and businesses. This can be particularly difficult in the early stages of development.

4.19 **Proximity to existing employment areas or clusters** – in simplistic terms, Greater Cambridge's employment areas are concentrated in the city centre, city fringe and

south east quadrant which emphasises the biotech cluster. These locations have differing benefits ranging from 'postcode desirability' to proximity to existing businesses and knowledge spillovers, in classic agglomeration terms. The new settlements are located in the west and north of South Cambridgeshire and therefore have to work harder to be seen as natural locations for business to locate. Waterbeach has an advantage in terms of its proximity to two existing successful locations at the Cambridge Innovation Park in Waterbeach and Cambridge Research Park in Landbeach.

- 4.20 **Maturity of settlements** - as settlements mature they achieve a critical mass in population and labour supply. At a certain level there becomes a need for general industrial space for car repairs, building supplies and so forth. There also becomes a logical decision making process for businesses to minimise worker commutes and take advantage of employment land, if available. Business parks or urban centres in new settlements typically have a longer lead in for occupancy than retail centres which local populations see as essential from the outset.
- 4.21 **Demand and supply across wider property markets** – existing established employment locations with vacancies are largely more attractive than new locations for the points noted above. Therefore if supply is maintained to meet demand, a particularly attractive proposition is needed at a new location which might involve lower rents, good amenities, better accessibility, purpose built workspace etc. Planned supply at existing employment areas in Greater Cambridge will have an effect on the ability of out of town locations to absorb take up – agents for out of town locations report a direct relationship between supply constraints in the city core and take up out of town.
- 4.22 **Accessibility** – whilst historic patterns of employment development can cause anomalies in the accessibility of locations, future provision must be accessible to attract occupiers. For out of town locations vehicle access is essential, however there are some efforts to improve both cycling and public transport links between

Cambridge and areas like Waterbeach and Cambourne. Areas like Northstowe already have a guided busway which makes the option more accessible.

- 4.23 **Institutional investment** – public or private institutional investment is often a catalyst for further occupation. For major private sector investors this can generate a local supply chain or agglomeration of industry type. South Cambridgeshire District Council's offices at Cambourne is an example of adding to the critical mass at Cambourne.

Waterbeach New Town, Cambridge Research Park (Landbeach) and Cambridge Innovation Park (Waterbeach)

- 4.24 Waterbeach is north / north east of the city and benefits from a rail station and the A10. It also has Cambridge Research Park (part of which with Enterprise Zone status) at Landbeach, Cambridge Innovation Park and Convent Drive employment area adjacent to the New Town designated area.
- 4.25 The Waterbeach New Town Supplementary Planning Document (SPD) refers to a range of employment at the new town including offices, light industrial and R&D. An outline application has been permitted for 6,500 new homes with 15,000 sqm of business floorspace. A further application has been submitted for the remainder of the new town including 5,500 new homes and up to a further 25,000 sqm of business floorspace.
- 4.26 Whilst there will be inevitable competition between space for housing and employment, with housing land attracting a premium, there is a logic to allowing employment growth adjacent to existing locations at Cambridge Research Park and Cambridge Innovation Park (notwithstanding any strategies in place in the existing SPD and applications). Seeking to include employment at Waterbeach railway station is positive in the sense of connectivity but may lead to competition for occupiers between existing employment areas around Waterbeach.
- 4.27 Cambridge Research Park (Landbeach) has Enterprise Zone status and already has a critical mass in biotech and professional services occupation. The Park is working hard to provide good amenities including organised exercise sessions and food

markets along with buses from the station. Whilst planning permission has lapsed for a hotel and other employment, a revised planning application is now under consideration for B Class uses and café. Market feedback suggests that the Park will move towards full development over the next 10 years on a plot phased basis, benefitting from A10 improvements and the Waterbeach New Town residential development offer.

- 4.28 Cambridge Research Park (Landbeach) and Cambridge Innovation Park provide a strong local concentration of employment activity that is likely to help Waterbeach New Town become successful in the longer term in employment terms and crosses the ICT / professional services and biotech sectors. There may be potential for a specific accommodation strategy in the longer term following the recent development at both of the existing employment areas. The timescales for the relocation of the railway station are anticipated to have a bearing on the station district's ability to attract employment – the current journey to/from the existing station is not supportive of the intensification of the existing or any new employment areas.

Cambourne / Cambourne West

- 4.29 Cambourne Business Park has taken some time to work towards being an established employment location having opened in 1999. It arguably suffered from some stigma in its association with Cambourne as a residential orientated development and the business park has a very low-density layout which feels disconnected from local amenities.
- 4.30 The Cambridge Compass Enterprise Zone includes part of the Cambourne Business Park site. Constructed buildings do now have a good level of occupancy with a mix of professional services and ICT companies and low levels of vacancy. Floorplates tend to be large and corporate HQ orientated with the exception of Regus which offers more flexible floorspace and co working space. Regus has been well received and had no availability at autumn 2019. This indicates that a more competitively priced flexible model out of city can attract demand.

- 4.31 Planning permission has been granted for building 4010 for a further 50,000 sq. ft which was at the time anticipated to be orientated towards a HQ office occupier.
- 4.32 The vacant land south of the Business Park Road is being promoted for a mixed-use development, incorporating around 240 dwellings and 4,400 sqm of B1.
- 4.33 It is considered that Cambourne Business Park would benefit from an amenity hub, this could offer gym, restaurant or similar. Such a development would enhance the existing design pattern and provide some focus. Granta Park (Great Abington), for example, has a gym, restaurant, nursery and cricket pitch amongst other offers and is a higher density development with walkability. Cambourne Business Park is both too near and too far from the village centre.
- 4.34 Outline planning permission for Cambourne West (S/2903/14/OL) was granted on 29 December 2017 for 'offices/light industry, use class B1 (up to 6.3ha)'. Employment areas targeted at small to medium sized operators will be provided in two locations: to the north east of the site - extending from the existing area of employment along Sheepfold Lane into the main site - and by Caxton Gibbet to the north west.

Bourn Airfield

- 4.35 The Bourn Airfield New Village Supplementary Planning Document was adopted in October 2019 and guides the strategic direction for employment land on the site. The policy outlines that the employment land component of the residential led development should retain the current employment land which is the plot occupied by DB Group/Diageo, north east of the site.
- 4.36 The Council has received a planning application (not determined at the time of writing) at Bourn Airfield for a mixed-use village comprising of 3,500 dwellings and supporting uses including 1,500 sqm of employment floorspace. In addition, planning permission was granted in 2013 for 17,723 sqm of industrial floorspace on land now owned by Diageo Pension Fund, north east of the site. A hybrid planning application was submitted in June 2020 for up to 26,757 sqm of commercial floorspace (B1c,

B1b, B8, A3, D1 & D2) and is undetermined at time of writing. If permitted, this hybrid planning application will be implemented instead of the extant planning permission.

- 4.37 It is understood that the landowner's vision for the site is to deliver employment floorspace in a range of industrial unit sizes. The site has good access to the strategic road network. The A428 provides east-west connections to regional markets and links to the M11 and M1. The north east part of the site is in a strong position to attract demand for logistics and industrial floorspace responding to constraints in the city market in particular. It is expected that the market will achieve take up within 5 years of delivery.

Northstowe

- 4.38 Northstowe is a major new town of 10,000 homes north west of the city benefitting from the guided busway and Enterprise Zone status (for the Phase 1 employment area). As of August 2019, approximately 400 homes in Northstowe were occupied, with construction ongoing. The development framework identifies a series of employment area parcels across the phases of development in association with the town centre and local centres. The Development Framework references Ely and St Ives as examples of town layouts including employment. However, a closer examination of these locations identifies edge of town employment locations with a mix of unit types and plot sizes. Similarly Melbourn with two employment areas finds these concentrated at the edge of town, as does Histon. Employment ancillary to town or local centres is typical in small towns but it is unique to find this at the scale proposed at Northstowe.
- 4.39 Northstowe has a challenge in bringing forward employment under the current strategy. There are a number of other employment locations either established or seeking market position including Cambourne and Waterbeach, the latter benefitting from the existing research park. However Northstowe benefits from the guided busway accessibility which means it provides a rapid route into the existing Cambridge Science Park. Whilst this development may encourage continued commuting into Cambridge, it may also enable overspill for those seeking cheaper flexible premises closer to home as well as more land hungry B1c / B8 requirements.

4.40 Northstowe's employment approach may benefit from a revision orientated more towards the Cambridge Research Park model (including industrial zone) or Histon. This would concentrate employment provision in a single area to generate some critical mass and encourage a good level of densification but not dispersal. Demand for employment is anticipated to be long term (post 10 years) taking into account road access. This should not be at the cost of local flexible workspace provision across a range of unit types provided in phases throughout the development of the new town – bringing some forward speculatively should support market stimulation.

5 EMPLOYMENT FORECASTS TO 2041

5.1 Forecasts provide a point in time perspective on future employment change. They represent scenarios and they cannot fully anticipate change in a particular year or unforeseen economic shocks. Instead they provide a long-term view that tends to be heavily influenced by past (relative and absolute) performance.

5.2 The process of producing long term future jobs forecasts for Greater Cambridge has been complicated. It has involved exploring a number of different techniques, drawing on a range of evidence sources and seeking to ensure as rounded and informed a view of future employment growth as possible. The key steps undertaken in the process were:

- Considering estimates of historic data: different sources have differing views on the aggregate and sector performance of the South Cambridgeshire and Cambridge City economies over different periods. Given the importance of understanding historic change in forecasting future performance, the first step was to establish a preferred dataset to work from.
- Testing a range of modelling approaches: initial modelling work was developed using the East of England Forecasting Model and using data provided by the Centre for Business Research at Cambridge University. Further work was then developed using long term historic data. Appendix A sets out the approaches considered and provides the technical workings in relation to the preferred methodology.

5.3 A summary of the work and outcomes is as follows.

Estimates of historic employment

5.4 An understanding of past performance is essential in determining future employment outcomes. However, there are several estimates of past employment across Greater Cambridge. These are:

- The Business Register and Employment Survey (BRES), generated by the Office for National Statistics (ONS).
- The methodology developed by the team from the Centre for Business Research (CBR) drawing on the complete Companies House database where all companies have to register, dating back to 2011.

- A CBR team developed CBR-BRES “blended” solution taking into account that the different methodologies above each have strengths and weaknesses.
- The East of England Forecasting Model (EEFM). This is a model that uses in-region estimates for the East of England to develop economic, demographic and housing trends in a consistent fashion, relying substantially on BRES but including estimates for the full range of self-employment jobs.
- Cambridge Econometrics’ own estimates, similar to those underpinning EEFM with some adjustments made, notably through the inclusion of improved R&D estimates.

5.5 Although the above datasets have broadly similar views on the level of employment at 2017, the count and therefore rate of change dating back to 2011 differed substantially, making future forecasting problematic. This became evident during the use of the various datasets and influenced the preferred methodology.

Estimates of historic employment

5.6 The various methods used in forecasting future employment using the above historic datasets explored are summarised below.

EEFM and updates

5.7 The East of England Forecasting model (EEFM) provides a set of economic baseline forecasts prepared by Cambridge Econometrics (CE). It is an integrated model for economic, demographic and housing trends. It provides a starting point for considering economic change but can fail to recognise where sectors are likely to perform significantly above the regional rate - or where population above forecast could lead to a greater level of demand in some sectors, driving further economic growth.

5.8 The 2018 adopted Local Plans for Cambridge City and South Cambridgeshire drew upon the EEFM data available at the time, which assumed 44,100 jobs to be created 2011-31. However, 35,800 jobs or 81% of this total were created between 2011-17

according to EEFM data updated by CE, suggesting that EEFM forecasts may be underestimating economic growth potential in Greater Cambridge.

- 5.9 At the time of the modelling work undertaken for this report (2019), the latest EEFM version was that published in 2017, drawing on historic data from 2015. CE undertook a light touch update to EEFM for Greater Cambridge using BRES (Business Register and Employment Survey) data (2017) and two different population variables (EEFM / sub national population projections (SNPP)).
- 5.10 However the outputs were still considered to underestimate future growth in Greater Cambridge as the future jobs trajectory was modest and well below that observed over the recent and longer term past, with the differences being most pronounced in a number of specific sectors.

CBR and CPIER

- 5.11 The Cambridgeshire and Peterborough Independent Economic Review (CPIER) was undertaken for the Cambridgeshire and Peterborough Combined Authority. The CPIER futures modelling work to 2050 drew on total economy change rates provided by CBR but did not consider individual sector performance. This is necessary for Local Plan making particularly when considering employment land needs for sectors and clusters²³.
- 5.12 The CBR / CPIER team shared CBR-BRES hybrid data with the GL Hearn led consultancy team, however the CBR/CPIER team were not involved in developing the preferred approach to forecasting future employment and have not endorsed the analysis of findings of this report. The GL Hearn team sought to use the CBR-BRES hybrid data for modelling in a number of ways, using the data provided alone and then attempting to integrate it with other datasets. The relatively short run nature of the data and the lack of alignment with wider EEFM / CE data made it difficult to

²³ Planning Practice Guidance on Housing and economic needs assessment suggests that sectoral and employment forecasts should be considered, Paragraph: 027 Reference ID: 2a-027-20190220

generate credible outcomes. However, this process did again emphasise the pace of recent jobs growth.

- 5.13 A proxy for CPIER outcomes for aggregate future employment at a district level was developed. This used CPIER growth rates for the whole Cambridgeshire and Peterborough area applied at district level to 2017 CE data as a start point. This was developed as a reference point to compare CPIER approximate outcomes rather than for employment purposes as it contained no sector information. The CPIER proxy was not endorsed by the CPIER team.

Growth modelling from historic data

- 5.14 In seeking to address the above challenges an alternative approach was developed. This introduced the potential for a range of plausible outcomes rather than a single figure. The approach relied on assessing historical (dating back to 2001 and then 1991) growth rates (compound annual growth rates drawing on average annual percentage change) in different sectors. The use of compound growth rates differs from average annual absolute change although the latter was used to test the plausibility of outcomes. The historic growth rates were compared to the modelled future estimates generated by EEFM. This confirmed again that the period from 2010 has been one of unprecedented employment growth. Beyond that, it suggested that:

- for most sectors, future growth rates generated by EEFM are reasonably consistent with past rates of growth.
- for a few sectors, EEFM's modelled estimates of future growth are far lower than observed historic growth both in the recent past (2010-17) and long term (from 1991). These 'key sectors' align with those identified as Greater Cambridge's most significant local economic clusters (e.g. Life sciences cluster (Research & Development and Health & care sectors) and Professional Services as reported in chapter 3).

- 5.15 Research was undertaken with local stakeholders to explore Greater Cambridge's clusters (see chapter 3 of this report). The work identified strong growth potential aligned with planned development, particularly for Life sciences, supporting the data

modelling. ICT is also considered to be a key local sector; however the modelled growth rate (through EEFM) did not appear dissimilar to the historic rate since 2001.

- 5.16 Given the above findings, modelling was undertaken for the key sectors to consider how a continuation of higher growth rates might affect total employment outcomes.
- 5.17 Simply extrapolating forward those key sectors on the basis of the compound growth rate observed between 2001-17 led to job numbers that were implausible in absolute terms, with the average annual future number of jobs created being over 5,000, around double the observed rate since 2001 of 2,600. As an economic base grows the compound growth rate should necessarily fall in percentage terms to avoid such implausible outcomes. Therefore, two scenarios were developed which recognised lower compound growth rates for key sectors than in the past, but ones higher than the baseline EEFM position. These were tested against historic absolute year on year change and sense checked against the capacity of known development sites that could come forward.
- **Central growth scenario: considered the most likely outcome taking into account long term patterns of employment.** For key sectors, the growth rate to 2041 was assumed as the lower quartile between the (low) EEFM baseline and the (high) historic growth rate between 2001-17, generating higher outcomes than the EEFM baseline. This overall led to aggregate absolute year on year growth comparable with that between 2001 - 2017 (and 1991 - 2017).
 - **Higher growth scenario: a higher outcome placing greater weight on fast growth in the recent past.** For key sectors, the growth rate to 2041 was assumed as the mid-point between the (low) EEFM baseline and the (high) historic growth rate between 2001-17, generating higher outcomes for key sectors than the central scenario. This overall led to aggregate absolute year on year growth higher than that seen between 2001-17 and 1991-17, but lower than the 'fast growth' period of 2010-17.

Population driven growth: standard method

5.18 A final exercise was undertaken using population driven growth linked to the government's standard methodology, which government sets out as the minimum level of housing required to be planned for by local authorities. The reason for considering this scenario was to enable the councils, as part of their consideration of reasonable options for plan-making, to explore, in a consistent way, the employment supported by the government's standard method for housing, alongside considering potential for higher employment forecasts, as described in this chapter, and the housing that would be required to support this. This model considered the homes, population and associated jobs likely to be created through the standard method which created a population above that of the EEFM or SNPP. The additional population was then converted into an employment forecast by sector by CE. The employment outcomes were higher than the EEFM forecasts but again failed to reflect the potential performance of key sectors compared to the past. Given that the government sets its standard methodology as a minimum housing requirement to plan for, the employment outcomes for this reflect a minimum position. However, the population outcomes would not support the preferred forecast employment levels.

Outputs summary

5.19 The initial modelling work used the 2017-2040 period and was later updated to 2020-41 (modelling was undertaken in 2019 and no account at all was taken of the COVID-19 pandemic or the recession that it precipitated). Each data modelling method therefore makes different assumptions about the 2017-20 period given that no actual data were available for that period at the time.

5.20 The table below provides a summary of the outcomes of the work. It includes:

- The EEFM baseline (with the model updated for recent data in Greater Cambridge by CE).
- The population driven standard method employment position.

- CPIER proxy generated by CE (but not endorsed by CPIER), using CPIER total economy rates for Cambridgeshire & Peterborough area applied to 2017 CE data for the districts.
- Historic annual average jobs change projected forwards, as a sense check, demonstrating the long term and fast recent growth since 2011.
- The recommended upper and lower forecasts (higher and central growth) to be used for Local Plan purposes.

Table 10: Employment forecast by method, Greater Cambridge 2020-41

	Total at 2041	2020-2041 change
EEFM / CE forecast baseline (E1)	255,600	40,100
Standard Method (SM)	257,600	45,761
CPIER proxy (CP)	314,000	92,100
<i>2001-2017 annual average change</i>	<i>272,300</i>	<i>55,300</i>
<i>2011-2017 annual average change</i>	<i>352,189</i>	<i>125,200</i>
Central Growth (KS2)	277,000	58,400
Higher Growth (KS3)	299,100	78,700

Source: GL Hearn, Cambridge Econometrics

Conclusions

- 5.21 The Greater Cambridge economy is dynamic and does not readily align with national or regional forecasts for jobs growth. It has a world-renowned life sciences cluster which has the potential to drive growth beyond typical regional or national rates. A number of major developments and expansions are already planned as set out in chapter 4 which will deliver significant associated job creation. The performance of the selected high growth sectors will have the greatest effect on the overall employment outcomes to 2041. Since 2011 the Greater Cambridge economy has grown faster than any time in the last three decades, driven by some key sectors.
- 5.22 A range of modelling techniques were explored in considering future employment change in Greater Cambridge, tested against historic performance. A preferred range between a central and higher growth scenario is recommended. If the recent

annual jobs change rate were to continue it would lead to higher outcomes than in the preferred recommended range. However, all economies experience peaks and troughs, with the position at 2017 (last historic data point used for this study) considered to be peak or near peak. As a result the most realistic position by 2041 is one which sees outcomes fall back towards the longer term historic year on year absolute change, whilst remaining higher than this historic annual rate given the expanded capability and potential of its local growth sectors.

6 EMPLOYMENT FLOORSPACE REQUIREMENTS

- 6.1 In this section we consider demand for employment land and floorspace over the period from 2020-41. This is considered for the central and higher growth scenarios referred to in chapter 5 as well as the standard methodology labour supply position. The section reports on requirements for employment land in the B1, B2 and B8 use classes.
- 6.2 Shortly before the finalisation of this report, Class E uses were introduced. It is recognised that in the future B1abc will fall under Class E. Amalgamation of B1abc would be representative of Class E.
- 6.3 The analysis is of ‘demand’ for employment land and does not take account of any supply-side factors such as existing employment land allocations or commitments.
- 6.4 When considering the scale of future needs the Planning Practice Guidance (PPG, 2019) requires consideration of:
- sectoral and employment forecasts and projections (labour demand)
 - demographically derived assessments of future employment needs (labour supply techniques)
 - analysis based on the past take-up of employment land and property and/or future property market requirements
- 6.5 There are relative benefits of each approach. Econometric forecasts take account of differences in expected overall economic performance moving forward relative to the past, with regard to the sectoral composition of growth. However, a detailed model is required to relate net forecasts to use classes and to estimate gross floorspace and land requirements.
- 6.6 Labour supply modelling is based on economically active persons derived from modelling future population changes associated with housing growth and changes in demographic structure. This relies on an understanding of future housing delivery and the relationship between labour supply and demand. This is converted to floorspace needs through a modelling exercise as with labour demand.

- 6.7 In contrast, past take-up is based on actual delivery of employment development; but does not take account of the implications of growth in labour supply associated with housing growth nor any potential differences in economic performance relative to the past. It is also potentially influenced by past land supply policies.
- 6.8 The quantitative evidence is supplemented by the wider analysis of market and economic dynamics.

Labour Demand

- 6.9 Modelling of future labour demand has considered a number of scenarios and inputs as set out in chapter 5.
- 6.10 This section takes forward the preferred economic growth model employment outputs and considers the floorspace requirements associated with two of the scenarios.

Labour Demand Methods

- 6.11 Method KS2 (higher scenario) identifies an increase of 78,700 jobs²⁴ (2020-41) in Greater Cambridge whereas KS3 (central scenario) reports 58,400. As set out earlier in this chapter, these draw on the underlying East of England Forecasting Model (EEFM) 2017 with adjustments for more recent BRES data and changes to key sectors based on analysis of past trends.
- 6.12 GL Hearn has converted the forecasts for total employment by sector into forecasts for Full-Time Equivalent (FTE) employment by sector through analysis of the proportion of full- and part-time jobs in the area on a sector by sector basis and for each authority. The percentage of full-time workers for each sector is set out in Appendix D. This is used in relating the forecasts for total employment to expected growth in Full-Time Equivalent (FTE) employment which is used in calculating employment floorspace and land requirements.

²⁴ Chapter 5 notes in the inclusion of a 'cap' on R&D jobs and introduces an alternate multiplier effect in other endogenous sectors. Chapter 6 does not assume a distribution of the multiplier effect jobs nor floorspace requirements given sector uncertainties, but retains the R&D cap in line with the KS2 model.

- 6.13 This provides a figure for net change in the number of FTE jobs in each sector over the plan period. The forecasts for KS2 (higher) show a net jobs growth of 25,113 FTE jobs over the period 2020-41 in Greater Cambridge and KS3 (central) reports 19,378.
- 6.14 GL Hearn have considered the proportion of employment in each of these sectors which is likely to take place in office and R&D floorspace (Use Classes B1a and B1b), light industrial floorspace (Use Classes B1c), general industrial floorspace (Use Class B2), and warehouse / distribution floorspace (Use Class B8).
- 6.15 To do this, we have calibrated our standard model which relates sectors and use classes for the Greater Cambridge economy through interrogation of the current composition of employment in key sectors at 2-digit SIC level. This calibration provides an estimate of the proportion of FTE jobs in each sub-sector, which are currently located on each type of employment land (or other use class). This has been reviewed against the East of England Forecasting Model assumptions in the associated land use model as well as the 2012 Employment Land Review for Cambridge City and South Cambridgeshire (and 2013 update). The assumptions are set out in Appendix E. The modelling assumes that this proportion will hold true moving forwards to 2041, which in reality would not necessarily be the case.
- 6.16 This approach has been used to derive the forecasts of net growth in FTE employment by use class over the plan period with a total of 25,113 additional B class jobs to 2041 as below under the higher scenario and 19,378 under the central.

Table 11: Labour Demand Scenario KS2 Higher – FTE Job Growth by B-Class Sector, 2020-41, Cambridge City

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	800	818	848	859	174	3,499
B1b	742	749	761	767	155	3,173
B1c	-11	-1	-1	-3	-1	-18
B2	-77	-60	-51	-54	-10	-251
B8	80	40	36	33	6	194
Total B-Class	1,534	1,547	1,592	1,602	324	6,598

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

Table 12: Labour Demand Scenario KS2 Higher – FTE Job Growth by B-Class Sector, 2020-41, South Cambridgeshire

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	1,402	1,385	1,394	1,417	286	5,885
B1b	3,307	3,303	3,307	3,314	664	13,895
B1c	-149	-101	-76	-61	-12	-400
B2	-404	-277	-221	-186	-37	-1,127
B8	98	59	50	47	9	263
Total B-Class	4,253	4,369	4,453	4,531	910	18,515

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

Table 13: Labour Demand Scenario KS2 Higher – FTE Job Growth by B-Class Sector, 2020-41, Greater Cambridge

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	2,202	2,204	2,242	2,276	460	9,384
B1b	4,049	4,052	4,068	4,081	818	17,068
B1c	-160	-102	-78	-65	-13	-418
B2	-481	-337	-272	-240	-47	-1,378
B8	178	99	85	80	15	457
Total B-Class	5,786	5,916	6,045	6,132	1,233	25,113

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

Table 14: Labour Demand Scenario KS3 Central – FTE Job Growth by B-Class Sector, 2020-41, Cambridge City

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	563	568	583	578	116	2,409
B1b	389	403	423	437	90	1,742
B1c	-11	-1	-1	-3	-1	-18
B2	-77	-60	-51	-54	-10	-251
B8	80	40	36	33	6	194
Total B-Class	944	952	989	991	201	4,076

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

Table 15: Labour Demand Scenario KS3 Central – FTE Job Growth by B-Class Sector, 2020-41, South Cambridgeshire

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	1,011	1,079	1,189	1,332	286	4,897
B1b	2,107	2,468	2,906	3,430	757	11,669
B1c	-149	-101	-76	-61	-12	-400
B2	-404	-277	-221	-186	-37	-1,127
B8	98	59	50	47	9	263
Total B-Class	2,662	3,227	3,847	4,562	1,003	15,302

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

Table 16: Labour Demand Scenario KS3 Central – FTE Job Growth by B-Class Sector, 2020-41, Greater Cambridge

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	1,574	1,647	1,772	1,910	402	7,306
B1b	2,496	2,871	3,329	3,867	847	13,411
B1c	-160	-102	-77	-64	-13	-418
B2	-481	-337	-272	-240	-47	-1,378
B8	178	99	86	80	15	457
Total B-Class	3,606	4,179	4,836	5,553	1,204	19,378

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

Floorspace

- 6.17 To these figures we have applied employment densities taking account of the *HCA Employment Densities Guide: 3rd Edition* (Drivers Jonas Deloitte, 2015) alongside local evidence gathered through stakeholder and property market consultations.
- 6.18 Market evidence suggests typical office (B1a) as well as dry lab employment density in the centre of Cambridge is around 8 sqm per employee and only slightly higher out of town. A blended average of 9 sqm per employee is therefore considered to be the most robust benchmark across business park, serviced office and general office floorspace across Greater Cambridge. This includes any influence of flexible working trends (see discussion in chapter 8).
- 6.19 For R&D (B1b) GL Hearn has worked with planning officers to review information from planning permissions to determine the ratio between forecast jobs (as proposed by applicants) and floorspace. This involved examination of application information by use class type and employment type at several research park locations including

West Cambridge and Genome Campus. This reports an average of 28 sqm per employee which is used herein and is line with the East of England forecasting model. It is recognised that based on market feedback, 28 sqm per FTE is a wet lab floorspace figure and not for dry labs, which are closer to office densities. However in acknowledging that dry labs play an important role in R&D activities, the model which allocates sectors to use classes (Appendix E) assumes that 20% of R&D takes place in B1a density floorspace (with a further sensitivity assuming 40% in lower density floor space premises).

6.20 We have converted employment figures to provide employment densities for gross external floor areas (GEA) on the following basis:

- Office (B1a): an average of 9 sqm NIA and 11 sqm GEA per employee based on a blend between business park, serviced office and general office floorspace and assuming that the GEA of buildings is on average 20% higher than the net internal area;
- R&D (B1b): an average of 28 sqm GEA per employee based on local data;
- Light Industrial (B1c): an average of 47 sqm GIA and 49 sqm GEA per employee, assuming that the gross external area of buildings is on average 5% higher than the net internal area;
- General Industrial (B2): an average of 38 sqm GEA per employee, assuming that the gross external area of buildings is on average 5% higher than the gross internal area;
- Warehouse/ Distribution (B8): an average of 70 sqm GEA per employee. This is the lower of the range of employment densities for B8 activities, reflecting the type of warehousing in the area more typified to final mile than regional / national distribution.

6.21 Applying these employment densities to the forecasts of net growth in jobs in B-class activities derives forecasts for net changes in employment floorspace. The breakdown by use class is shown below. A total requirement of 541,655 sqm is reported for KS2 (higher scenario) and 416,392 under KS3 (central scenario).

Table 17: Labour Demand Scenario KS2 (higher) – Floorspace Growth by B-Class Use, 2020-41 (sqm) Cambridge City

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	8,797	9,003	9,327	9,449	1,915	38,491
B1b	20,776	20,976	21,300	21,474	4,326	88,852
B1c	-540	-33	-72	-165	-66	-875
B2	-2,841	-2,217	-1,888	-1,983	-356	-9,284
B8	5,576	2,815	2,488	2,283	427	13,590
Total B-Class	31,768	30,544	31,155	31,058	6,247	130,773

Source: GL Hearn based on Cambridge Econometrics data

Table 18: Labour Demand Scenario KS2 (higher) – Floorspace Growth by B-Class Use, 2020-41 (sqm) South Cambridgeshire

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	15,421	15,237	15,339	15,587	3,147	64,730
B1b	92,585	92,487	92,601	92,796	18,580	389,050
B1c	-7,324	-4,945	-3,744	-2,998	-585	-19,596
B2	-14,955	-10,260	-8,193	-6,896	-1,380	-41,685
B8	6,849	4,118	3,473	3,301	642	18,383
Total B-Class	92,576	96,636	99,476	101,790	20,404	410,882

Source: GL Hearn based on Cambridge Econometrics data

Table 19: Labour Demand Scenario KS2 (higher) – Floorspace Growth by B-Class Use, 2020-41 (sqm) Greater Cambridge

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	24,218	24,240	24,666	25,036	5,061	103,221
B1b	113,361	113,463	113,901	114,270	22,907	477,902
B1c	-7,864	-4,978	-3,816	-3,162	-651	-20,471
B2	-17,796	-12,477	-10,080	-8,879	-1,736	-50,969
B8	12,425	6,933	5,961	5,584	1,069	31,973
Total B-Class	124,344	127,181	130,632	132,848	26,651	541,655

Source: GL Hearn based on Cambridge Econometrics data

Table 20: Labour Demand Scenario KS3 (central) – Floorspace Growth by B-Class Use, 2020-41 (sqm) Cambridge City

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	6,197	6,253	6,415	6,360	1,274	26,499

B1b	10,884	11,296	11,840	12,242	2,508	48,770
B1c	-540	-33	-72	-165	-66	-875
B2	-2,841	-2,217	-1,888	-1,983	-356	-9,284
B8	5,576	2,815	2,488	2,283	427	13,590
Total B-Class	19,276	18,115	18,783	18,737	3,788	78,699

Source: GL Hearn based on Cambridge Econometrics data

Table 21: Labour Demand Scenario KS3 (central) –Floorspace Growth by B-Class Use, 2020-41 (sqm) South Cambridgeshire

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	11,126	11,864	13,076	14,655	3,143	53,863
B1b	58,992	69,109	81,381	96,046	21,200	326,728
B1c	-7,324	-4,945	-3,744	-2,998	-585	-19,596
B2	-14,955	-10,260	-8,193	-6,896	-1,380	-41,685
B8	6,849	4,118	3,473	3,301	642	18,383
Total B-Class	54,688	69,886	85,993	104,107	23,020	337,693

Source: GL Hearn based on Cambridge Econometrics data

Table 22: Labour Demand Scenario KS3 (central) –Floorspace Growth by B-Class Use, 2020-41 (sqm) Greater Cambridge

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	17,322	18,117	19,491	21,015	4,417	80,362
B1b	69,876	80,405	93,221	108,287	23,708	375,497
B1c	-7,864	-4,978	-3,816	-3,162	-651	-20,471
B2	-17,796	-12,477	-10,080	-8,879	-1,736	-50,969
B8	12,425	6,933	5,961	5,584	1,069	31,973
Total B-Class	73,963	88,000	104,776	122,845	26,807	416,392

Source: GL Hearn based on Cambridge Econometrics data Labour Supply (standard method)

- 6.22 The labour supply scenario considers the quantum of employment land required to support the population and resulting employment associated with the standard methodology housing requirement. This is termed SM in the forecasts tables. Growth under this scenario is 45,765 jobs for 2020-41.
- 6.23 Using the same modelling assumptions as for the labour demand scenarios, GL Hearn has converted the forecasts for total employment by sector into forecasts for Full-Time Equivalent (FTE) employment by sector being 10,210 B Class jobs.

Table 23: Labour Supply Scenario – FTE Job Growth by B-Class Sector, 2020-41 Cambridge City

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	186	279	344	404	74	1,287
B1b	194	233	260	292	55	1,034
B1c	-27	-8	-2	3	-1	-35
B2	-99	-67	-54	-45	-9	-274
B8	7	13	11	10	1	42
Total B-Class	261	450	559	664	120	2,054

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

Table 24: Labour Supply Scenario – FTE Job Growth by B-Class Sector, 2020-41 South Cambridgeshire

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	1,086	938	776	746	149	3,696
B1b	1,189	1,080	913	880	179	4,240
B1c	-35	-26	-39	-31	-6	-137
B2	-162	-121	-140	-120	-23	-565
B8	309	219	175	182	37	922
Total B-Class	2,386	2,090	1,686	1,656	337	8,156

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

Table 25: Labour Supply Scenario – FTE Job Growth by B-Class Sector, 2020-41 Greater Cambridge

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	1,272	1,217	1,120	1,150	223	4,983
B1b	1,383	1,313	1,173	1,172	234	5,274
B1c	-62	-34	-41	-28	-7	-172
B2	-261	-188	-194	-165	-32	-839
B8	316	232	186	192	38	964
Total B-Class	2,647	2,540	2,245	2,320	457	10,210

Source: Cambridge Econometrics / GL Hearn (numbers may not sum due to rounding)

- 6.24 Applying the employment densities to the forecasts of net growth in jobs in B-class activities, we can derive forecasts for net changes in employment floorspace. The floorspace requirements are significantly lower than the labour demand scenarios.

Table 26: Labour Supply Scenario –Floorspace Growth by B-Class Use, 2020-41 (sqm) Cambridge City

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	2,044	3,074	3,784	4,443	810	14,154
B1b	5,429	6,531	7,281	8,168	1,547	28,955
B1c	-1,321	-384	-117	150	-33	-1,706
B2	-3,671	-2,490	-1,986	-1,649	-351	-10,147
B8	495	887	773	709	97	2,961
Total B-Class	2,975	7,618	9,735	11,820	2,069	34,217

Source: GL Hearn based on Cambridge Econometrics data

Table 27: Labour Supply Scenario –Floorspace Growth by B-Class Use, 2020-41 (sqm) South Cambridgeshire

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	11,947	10,319	8,540	8,202	1,644	40,653
B1b	33,282	30,245	25,565	24,636	5,005	118,734
B1c	-1,733	-1,280	-1,902	-1,534	-287	-6,736
B2	-5,994	-4,469	-5,180	-4,432	-840	-20,915
B8	21,600	15,330	12,268	12,740	2,623	64,560
Total B-Class	59,102	50,146	39,292	39,611	8,146	196,296

Source: GL Hearn based on Cambridge Econometrics data

Table 28: Labour Supply Scenario –Floorspace Growth by B-Class Use, 2020-41 (sqm) Greater Cambridge

	2020-2025	2025-2030	2030-2035	2035-2040	2040-2041	Total
B1a	13,990	13,394	12,324	12,645	2,454	54,807
B1b	38,711	36,776	32,846	32,803	6,552	147,689
B1c	-3,054	-1,664	-2,019	-1,384	-320	-8,442
B2	-9,665	-6,958	-7,166	-6,081	-1,191	-31,062
B8	22,095	16,217	13,041	13,449	2,720	67,521
Total B-Class	62,076	57,764	49,027	51,431	10,215	230,513

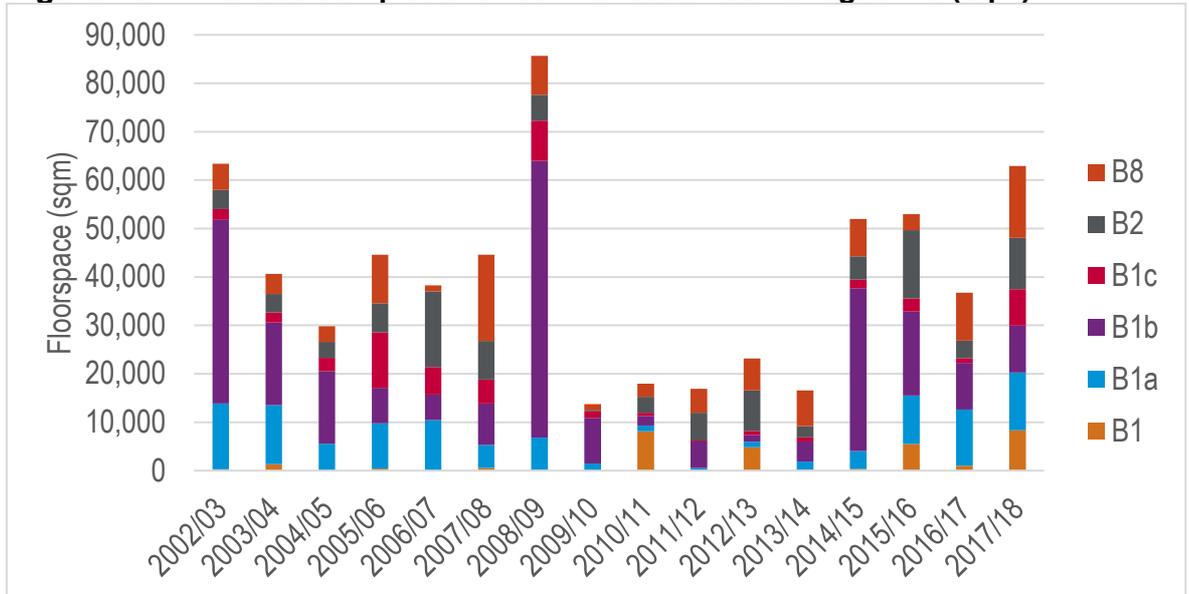
Source: GL Hearn based on Cambridge Econometrics data

Past Completions Trend

- 6.25 GL Hearn has reviewed data for completions of B class floorspace for Cambridge City and South Cambridgeshire over the period from 1 April 2002 to 31 March 2018 based on the development data in the Cambridge and South Cambridgeshire Authority Monitoring Reports and published on Cambridgeshire Insight. Gross

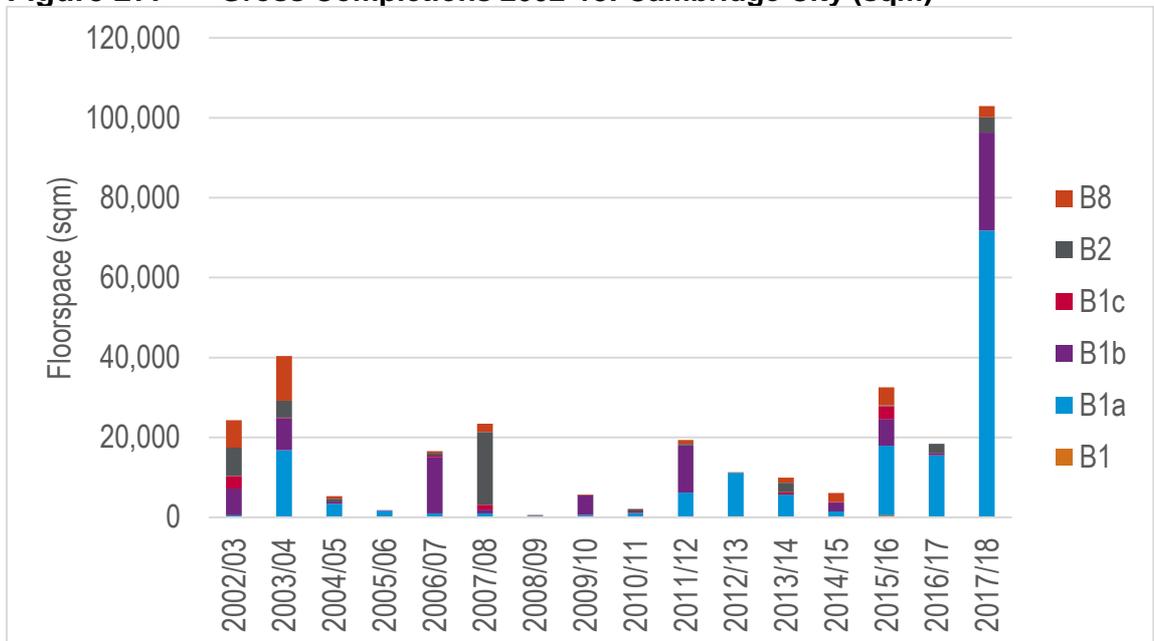
completions are reported in the charts below and exclude any B class floorspace lost.

Figure 26: Gross Completions 2002-18: South Cambridgeshire (sqm)



Source: South Cambridgeshire District Council

Figure 27: Gross Completions 2002-18: Cambridge City (sqm)



Source: Cambridge City Council

6.26 The data identifies that in South Cambridgeshire 5% of gains were in B1, 17% in B1a, 38% in B1b, 24% in B1c/B2 and 17% in B8. There was some slow down in

2009/10 to 2013/14. A particularly large B1b gain was in 2009 being new buildings at NAPP Pharmaceuticals on the Cambridge Science Park.

6.27 The data identifies that in Cambridge City 0.2% of gross gains were in B1, 48% in B1a, 25% in B1b, 16% in B1c/B2 and 10% in B8. A particularly large B1a gain was the replacement of the Edinburgh Building next to Cambridge University Press in 2018.

6.28 The table below also includes losses data (including redevelopments of employment to B Class and other uses), providing an overall net change.

Table 29: Past Floorspace Completions, 2002-18, Greater Cambridge

	Gains B1, B1a, B1b	Gains B1c / B2	Gains B8	Losses B1, B1a, B1b	Losses B1c / B2	Losses B8	Net B1, B1a, B1b	Gains B1, B1a, B1b	Gains B1c / B2
2002/03	59,020	16,357	12,353	-10,189	-39,899	-6,746	48,831	-23,542	5,607
2003/04	55,451	10,190	15,374	-26,224	-15,076	-13,691	29,227	-4,886	1,683
2004/05	24,418	6,840	3,827	-34,638	-9,284	-4,193	-10,220	-2,444	-366
2005/06	18,942	17,436	10,027	-11,598	-13,316	-1,226	7,344	4,120	8,801
2006/07	30,890	22,291	1,658	-9,893	-10,408	-5,240	20,997	11,883	-3,582
2007/08	15,856	32,282	19,887	-11,086	-6,262	-5,674	4,770	26,020	14,213
2008/09	64,327	13,924	8,024	-10,682	-9,636	-1,817	53,645	4,288	6,207
2009/10	16,427	1,558	1,470	-9,541	-49,412	-2,500	6,886	-47,854	-1,030
2010/11	12,456	4,907	2,706	-21,208	-15,083	-7,981	-8,752	-10,176	-5,275
2011/12	24,063	6,287	5,912	-18,501	-17,689	-2,000	5,562	-11,402	3,912
2012/13	18,525	9,298	6,562	-11,966	-16,427	-4,100	6,559	-7,129	2,462
2013/14	11,787	6,014	8,716	-30,501	-30,858	-7,326	-18,714	-24,844	1,390
2014/15	41,352	6,722	10,024	-20,522	-8,922	-13,127	20,830	-2,200	-3,103
2015/16	57,538	20,177	7,865	-19,104	-3,097	-13,688	38,434	17,080	-5,823
2016/17	38,342	6,926	9,936	-12,718	-1,699	-4,406	25,624	5,227	5,530
2017/18	126,289	21,946	17,624	-21,477	-7,168	-7,441	104,812	14,778	10,183
TOT 2002-18	615,683	203,155	141,965	-279,848	-254,236	- 101,156	335,835	-51,081	40,809
Avg	38,480	12,697	8,873	-17,490	-15,890	-6,322	20,990	-3,193	2,551

Source: Cambridge City Council & South Cambridgeshire District Council

6.29 The analysis of floorspace type as an annual average is set out below. These figures have been rolled forward across the length of the Plan period. This was first calculated on a Cambridge City and South Cambridgeshire level, and subsequently combined to a Greater Cambridge level.

Table 30: Annual and Projected Floorspace Requirements, Cambridge City (sqm) (2002-18 data)

Use Class	Gross Completions (Annual Average)	Net Completions (Annual Average)	Gross Completions Projected 20'-41'	Net Completions Projected 20'-41'
B1	47	-390	987	-8,190
B1a	9,716	759	204,036	15,939
B1b	5,091	3,731	106,911	78,351
B1c	552	-1,991	11,592	-41,811
B2	2,573	-290	54,033	-6,090
B8	2,075	-1,805	43,575	-37,905
Total	20,054	15	421,134	315

Source: Cambridge City Council & South Cambridgeshire District Council

Table 31: Annual and Projected Floorspace Requirements, South Cambridgeshire (sqm) (2002-18 data)

Use Class	Gross Completions (Annual Average)	Net Completions (Annual Average)	Gross Completions Projected 20'-41'	Net Completions Projected 20'-41'
B1	1,938	1,815	40,698	38,115
B1a	6,623	4,208	139,083	88,368
B1b	15,066	10,866	316,386	228,186
B1c	3,386	1,010	71,106	21,210
B2	6,185	-1,922	129,885	-40,362
B8	6,798	4,356	142,758	91,476
Total	39,996	20,333	839,916	426,993

Source: Cambridge City Council & South Cambridgeshire District Council

Table 32: Annual and Projected Floorspace Requirements, Greater Cambridge (sqm) (2002-18 data)

Use Class	Gross Completions (Annual Average)	Net Completions (Annual Average)	Gross Completions Projected 20'-41'	Net Completions Projected 20'-41'
B1	1,984	1,425	41,664	29,925
B1a	16,339	4,968	343,119	104,328
B1b	20,157	14,596	423,297	306,516

B1c	3,939	-981	82,719	-20,601
B2	8,759	-2,211	183,939	-46,431
B8	8,873	2,551	186,333	53,571
Total	60,050	20,348	1,261,050	427,308

Source: Cambridge City Council & South Cambridgeshire District Council

6.30 As a sensitivity, a second analysis of completions trends has been undertaken for a more recent period for 2011-12 onwards taking into account activity in the post-recession period. Broadly this has seen faster growth in Cambridge City and slower growth (until 2015) in South Cambridgeshire leading to a slightly higher overall projection. There has also been a more recent emphasis on B1a accommodation.

Table 33: Annual and Projected Floorspace Requirements, Cambridge City (sqm) (2011-18 data)

Use Class	Gross Completions (Annual Average)	Net Completions (Annual Average)	Gross Completions Projected 20'-41'	Net Completions Projected 20'-41'
B1	85	-912	1,785	-19,152
B1a	18,449	8,974	387,429	188,454
B1b	6,566	5,539	137,886	116,319
B1c	544	-805	11,424	-16,905
B2	1,318	-347	27,678	-7,287
B8	1,698	-2,390	35,658	-50,190
Total	28,660	10,058	601,860	211,218

Source: Cambridge City Council & South Cambridgeshire District Council

Table 34: Annual and Projected Floorspace Requirements, South Cambridgeshire (sqm) (2011-18 data)

Use Class	Gross Completions (Annual Average)	Net Completions (Annual Average)	Gross Completions Projected 20'-41'	Net Completions Projected 20'-41'
B1	2,879	2,720	60,459	57,120
B1a	5,812	1,658	122,052	34,818
B1b	11,623	8,180	244,083	171,780
B1c	2,118	786	44,478	16,506
B2	7,074	-847	148,554	-17,787
B8	7,822	4,469	164,262	93,849
Total	37,327	16,966	783,867	356,286

Source: Cambridge City Council & South Cambridgeshire District Council

Table 35: Annual and Projected Floorspace Requirements, Greater Cambridge (sqm) (2011-18 data)

Use Class	Gross Completions (Annual Average)	Net Completions (Annual Average)	Gross Completions Projected 20'-41'	Net Completions Projected 20'-41'
B1	2,964	1,808	62,244	37,968
B1a	24,260	10,632	509,460	223,272
B1b	18,189	13,719	381,969	288,099
B1c	2,661	-19	55,881	-399
B2	8,391	-1,194	176,211	-25,074
B8	9,520	2,079	199,920	43,659
Total	65,986	27,024	1,385,706	567,504

Source: Cambridge City Council & South Cambridgeshire District Council

Summary of Floorspace Needs and Discussion

6.31 The tables below bring together and summarise the range of models considered.

Table 36: Scenario Floorspace Requirements, Cambridge City (sqm)

Use Class	Labour Demand Scenario KS2 Higher	Labour Demand Scenario KS2 Central	SM Labour Supply scenario	Net Completions Projected ('02-'18 data)	Net Completions Projected ('11-'18 data)
B1				-8,190	-19,152
B1a	38,491	26,499	14,154	15,939	188,454
B1b	88,852	48,770	28,955	78,351	116,319
B1c	-875	-875	-1,706	-41,811	-16,905
B2	-9,284	-9,284	-10,147	-6,090	-7,287
B8	13,590	13,590	2,961	-37,905	-50,190
Total	130,773	78,699	34,217	315	211,218

Source: GL Hearn

Table 37: Scenario Floorspace Requirements, South Cambridgeshire (sqm)

Use Class	Labour Demand Scenario KS2 Higher	Labour Demand Scenario KS2 Central	SM Labour Supply scenario	Net Completions Projected ('02-'18 data)	Net Completions Projected ('12-'18 data)
B1				38,115	57,120
B1a	64,730	53,863	40,653	88,368	34,818
B1b	389,050	326,728	118,734	228,186	171,780
B1c	-19,596	-19,596	-6,736	21,210	16,506
B2	-41,685	-41,685	-20,915	-40,362	-17,787
B8	18,383	18,383	64,560	91,476	93,849
Total	410,882	337,693	196,296	426,993	356,286

Source: GL Hearn

Table 38: Scenario Floorspace Requirements, Greater Cambridge (sqm)

Use Class	Labour Demand Scenario KS2 Higher	Labour Demand Scenario KS2 Central	SM Labour Supply scenario	Net Completions Projected ('03-'18 data)	Net Completions Projected ('12-'18 data)
B1				29,925	37,968
B1a	103,221	80,362	40,653	104,328	223,272
B1b	477,902	375,497	118,734	306,516	288,099
B1c	-20,471	-20,471	-6,736	-20,601	-399
B2	-50,969	-50,969	-20,915	-46,431	-25,074
B8	31,973	31,973	64,560	53,571	43,659
Total	541,655	416,392	196,296	427,308	567,504

Source: GL Hearn

- 6.32 For the Greater Cambridge area, the labour demand model KS2 (higher) sits just below the recent net completions trend data overall, although the B1a/b forecasts are higher, but not significantly so. The KS3 (central) scenario falls below the recent and long term trends. This suggests in the first instance that the floorspace forecasts are realistic and deliverable within their historic context.
- 6.33 **It is recommended that in planning positively for growth, the KS2 Higher Scenario is planned for regarding B1a/b floorspace, without making any implied assumptions regarding jobs growth.** This is recommended to ensure a flexible employment land supply encouraging growth in existing businesses and attracting inward investment. It also broadly aligns with completions trends and market feedback.

- 6.34 Going forwards more development is expected in South Cambridgeshire and less in Cambridge than has been the case in the past, which is realistic given physical constraints in Cambridge City itself and major developments planned in South Cambridgeshire including the North East Cambridge Area Action Plan and Genome Campus.
- 6.35 Both labour demand models forecast a greater rate of B1b floorspace than has been the case in recent years. The labour demand model ratio of B1b to B1a more closely reflects long term historic trends however given crossovers between B1a and dry labs this should be viewed cautiously. A greater manifestation of R&D jobs requiring B1a density premises would reduce the overall need and rebalance towards B1a²⁵.
- 6.36 The labour demand forecasts for B1c/B2 floorspace should be viewed cautiously. Recent completions trends show a slow down in light / heavy industrial floorspace loss as the manufacturing and related sector of the economy stabilises after a period of decline. Market feedback suggests demand for light industrial floorspace which is reflected in gains in South Cambridgeshire and market pressure in Cambridge. It is recommended that industrial floorspace losses are limited in the city to avoid constraining business and industrial activity. In reality there may be some further losses in Cambridge, which should be minimised, but gains in South Cambridgeshire are expected regardless.
- 6.37 Similarly, with B8 warehousing needs, the completions trends show a higher level of floorspace than the labour demand model with losses in Cambridge and gains in South Cambridgeshire. The logistics sector is experiencing a high level of change due to increases in e-commerce and greater levels of automation particularly in larger units. This may change the relationship between labour requirements and floorspace needs. Given delivery has been steady in South Cambridgeshire across

²⁵ As per paragraph 6.19, the reported outcome assumes 80% of R&D employment occurs in 28sqm per FTE labs and 20% in B1a premises. If 60% of R&D employment is in 28sqm per FTE labs and 40% in lower density premises, the KS2 requirements would be 370,000 sqm for B1b and 145,336 sqm for B1a or a fall of 65,000 sqm overall for B1a/b to 2041.

the tested completion periods whilst losses have increased in Cambridge and are likely to continue, it is recommended that the recent net trends are planned for.

Table 39: Recommended Floorspace Requirements, Greater Cambridge (sqm)

Use Class	Cambridge	South Cambridgeshire	Greater Cambridge	Source
B1a	38,491	64,730	103,221	Labour Demand KS2 (Higher)
B1b	88,852	389,050	477,902	Labour Demand KS2 (Higher)
B1c	-16,905	16,506	-399*	Net completions '12-'18
B2	-7,287	-17,787	-25,074	Net completions '12-'18
B8	-50,190	93,849	43,659	Net completions '12-'18
Total	52,961	546,348	599,309	-

Source: GL Hearn

* reflects net position but planning for growth in SC is recommended

- 6.38 It is of note that the above summary of needs provides a net aggregated position across the two authorities. In the case most notably of warehousing, these reflect past trends which include losses notably in the city, the relocation of which to South Cambridgeshire will be reflected in higher completions. If losses in the city are stemmed, which is expected not only from a policy perspective but as there are limited industrial sites available for redevelopment, the future need in South Cambridgeshire would be closer to the Greater Cambridge net position (43,659 sqm). For light industrial B1c it would be misleading to plan for the Greater Cambridge aggregated net position given the market requirements and the 16,506 sqm should be considered as required regardless of future losses.

7 BALANCE OF FLOORSPACE NEEDS

7.1 This section draws together and makes recommendations on the balance of future floorspace needs drawing on previous sections.

7.2 Based on the 2019 monitoring data of supply, with updates as set out in chapter 4, and the 2020-41 recommended needs under higher growth, the following balance is shown. This includes the proposal for the Wellcome Genome Campus (Hinxton) expansion with a planning committee resolution-n to grant planning permission.

7.3 GL Hearn recommend planning for a margin of vacancy in future needs at 7.5%, which helps to enable churn and choice for businesses. This is included below.

Table 40: Demand Supply by Use Class, Greater Cambridge (sqm) 2020-2041

Use Class	Need	Inc. vacancy margin 7.5%	Supply	Balance	Comments
B1 *	N/A	-	283,708	+283,708	Includes 150,000 Genome Campus
B1a	103,221	110,963	101,120	-9,861	-
B1b	477,902	513,745	276,823	-236,922	Genome Campus likely to include high B1b element
B1c	16,506	17,744	16,232	-1,512	Need reflects positive approach for South Cambs
B2	-25,074	-25,074 (N/A)	-76,032	-50,958	-
B8	43,659	46,933	22,462	-24,471	Shortfall identified
NEC	-	-	TBC - AAP	-	-
Total	616,214	664,311	624,313	-39,998	-

Source: GL Hearn

* Blended B1 is not an output of the demand modelling, whilst the B1 supply represents outline permissions / allocations where the final mix is not yet known.

7.4 The use classes are amalgamated below for ease.

Table 41: Demand Supply by Summarised Use Class, Greater Cambridge (sqm)) 2020-2041

Use Class	Need	Inc. vacancy margin 7.5%	Supply	Balance
B1	-	-	283,708	+283,708
B1a/b	581,123	624,707	377,943	-246,764
B1c/B2	-8,568	-7,330	-59,800	-52,470
B8	43,659	46,933	22,462	-24,471
NEC	-	-	TBC through AAP	-
Total	616,214	664,311	624,313	-39,998

Source: GL Hearn

- 7.5 At the present time the mix within the Wellcome Genome Campus expansion is not known but this is expected to play an important role in significantly contributing to the future longer term undersupply in R&D B1b requirements. The main components of the B1 supply include:
- Wellcome Genome Campus;
 - Northstowe;
 - Cambourne West;
 - Land at Station Road (Cambridge Station);
 - Peterhouse Technology park expansion; and
 - Permissions at Cambridge Science Park.
- 7.6 Regardless of the above there is still expected to be a shortfall in B1a/b provision under the KS2 Higher scenario in the region of 50,000 to 100,000 sqm. Furthermore, notwithstanding the apparent quantitative balance of B1a provision, given the commonalities between B1a and B1b dry labs, the market feedback is that further accommodation of this type is lacking in the city and around North East Cambridge.
- 7.7 GL Hearn recommends that further allocations are made to accommodate both office and wet/dry lab needs in Greater Cambridge. The role and mix therefore of North East Cambridge Area Action Plan in providing a growth overspill function is essential. It is important that this area provides a mix of B1a/b although given the location it is acknowledged to emphasise B1a office and B1b dry labs with a smaller wet lab proportion.

7.8 As reported earlier it is recommended that the higher growth scenario (KS2) floorspace need is planned for. The central scenario (KS3) would see a relative fall of around 120,000 in B1a/b needs compared to the higher growth scenario and therefore is largely balanced in the current demand and supply, nullifying in quantitative terms significant employment growth needs for example at North East Cambridge. However given the level of demand in Cambridge and particularly around the Science Park, the central scenario for floorspace would be counter intuitive to market signals.

7.9 Further commentary on the qualitative position of the use classes is provided below, drawing on the property market feedback, quantitative need and supply.

Offices

7.10 The office market across Greater Cambridge is mixed and highly locational within the submarkets. Large scale B1a office footprint take up outside of Cambridge, notably at Cambourne, has proven to be a protracted process (albeit improved recently in the buoyant market) and as recommended elsewhere in this report requires a mix of localised amenities to prove more competitive. In parallel, the draw of the City Centre and Cambridge Science Park has proved relentless with rents continuing to rise.

7.11 There is considered to be a strong corporate office market demand looking forwards for the Cambridge Science Park and future development of North East Cambridge. The Cambridge North Station's accessibility is a particular local driver for demand. Notwithstanding the quantitative modelling results for B1a specifically, which indicate only a limited undersupply compared to future demand to 2041, market feedback suggests a much greater supply will be sought by the market around the north of the city. The amalgamation of B1a/b needs and balance (ie significant shortfall before counting the mixed B1 contribution) is considered to more realistically represent the future requirements. This reflects the 'blurring' of what is described as 'dry lab' space and office space, the former focused on computer development or mathematical analysis rather than traditional office functions.

- 7.12 The overall balance of need will be clearer when the type of provision at the Wellcome Genome Campus (Hinxton) and other B1 mixed supply is determined. The role of North East Cambridge Area Action Plan is evidently important in providing employment floorspace and job growth in Cambridge as a whole. One risk that might occur with enhanced supply in the city is that there is a return to a slow down in demand for out of centre offices, such as Cambourne or Cambridge Research Park (Landbeach). However these have different offers and different rental price points accordingly.
- 7.13 As set out both in the property market review, whilst there is a reasonable offer in terms of flexible and managed workspace, this remains in high demand to the degree it is considered to constrain business opportunity. As a result, further intervention is recommended to improve the offer.

Laboratories

- 7.14 'Wet lab' research capacity and capabilities are one of Greater Cambridge's most renowned assets. Granta Park (Great Abington) has helped to fulfil the needs of mid sized and larger labs for corporate occupation however demand remains reportedly high with fast take up the norm and availability very low. There will be commercial lab components to the lab development at West Cambridge that will help to fulfil medium and long term needs, as will the Wellcome Genome Campus (Hinxton) and Cambridge Biomedical Campus ongoing expansion. Restrictions on occupancy / tenancy type at these locations would be problematic in facilitating wider growth. Where possible owners should avoid designating labs solely for either institutional research or open market commercial research labs to maximise flexibility.
- 7.15 Feedback and evidence on the sufficiency of supply for smaller start up labs generally points to significant constraints and there are viability challenges in the provision of these. The expansion of the Wellcome Genome Campus (Hinxton) and West Cambridge is likely to help alleviate this in the medium term and there has been some increase in supply in very recent years.

- 7.16 It is acknowledged that without the Wellcome Genome Campus application then a clear shortfall in B1 (and B1b in particular) in the future would have been identified. The planning authority's positive response to sector needs has helped to mitigate the shortfall. However within the B1b category specifically there is an apparent quantitative shortfall which could be in the order of 50,000 – 100,000 sqm dependent on B1 supply. If the higher growth is achieved over the next two decades then the current pipeline of supply specifically regarding lower density research labs is likely to be insufficient, subject to the mix of B1 floorspace coming forward at North East Cambridge. This should be monitored through the Plan period and the planning authority should continue to respond positively to proposals that can be considered on their merits or through a further allocation or allocations.

Industrial and Warehousing

- 7.17 Both completions data and VOA records indicate that South Cambridgeshire has been gaining industrial stock almost at a parallel rate to Cambridge's losses (the VOA category combines industrial and warehousing floorspace). The quantitative analysis very much reflects the property market feedback, with an ongoing decline in traditional heavy manufacturing premises being replaced by warehousing and to a lesser degree light industrial requirements. This includes the need for 'trade park' type premises such as Travis Perkins type builder's merchants as well as more retail-esque 'Screwfix' and 'Wickes' units.
- 7.18 As reported elsewhere, the demand for residential and other uses has pressurised land values and reduced the industrial supply in Cambridge, leading to rental increases for industrial units. There is a land use efficiency logic to removing these lower value activities from the City. However, at a certain point this becomes inefficient with customers and employees having to travel too far (or not travelling at all) to businesses outside of the city. As a result some industrial locations should be protected in the city to support the economic needs and diversity of employment opportunities. Release of these sites should be assessed on a site by site basis however in reality there are a limited number of industrial areas remaining. It is equally important that new units are available in South Cambridgeshire and where

these have been brought forward in accessible locations they have proven popular. The drive in e-commerce will further increase the need for smaller scale warehousing opportunities (final mile centres).

- 7.19 The under supply reported quantitatively of around 20,000 sqm B8 again suggests suitable locations should be identified for small and mid sized light industrial and distribution units. Trade counters will prefer edge of city locations. In town, smaller and mid sizes B8 requirements will assist in fulfilling last mile delivery needs. Further out of town the Bourn Quarter proposals provide a good example of a modern offer where more industrial units sit alongside mid tech B1b as part of an integrated offer in an accessible location. These should be located in proximity to the strategic road network and also ideally on the fringe of urban areas serving customers and providing localised labour.
- 7.20 Although contraction in B2 is occurring at a faster rate than anticipated in the model, changing working practices indicate that the strong supply in B1 general accommodation (drawing in B1c) for example at Northstowe and Cambourne West will in part be providing for employment needs rather than requiring replacement of extensive B2 losses. Equally this highlights the importance of ensuring both existing B1 allocations and traditional industrial sites are retained to enable choice for business accommodation. However given the scale of undersupply in B2 requirements which exceeds 50,000 sqm, some provision should be made for allocations that support this floorspace both in order to facilitate traditional industries as well as supporting advanced industries that require operational activities not suited to residential areas. Future reprovision should be of at least 25,000 sqm, which would be the residual requirement under the labour demand model, whereas planning for a greater recommended rate of up to 50,000 sqm would align with the recent completions trends and better offset losses in both the city and South Cambridgeshire. Preferred locations would be both in reasonable proximity to the city itself as well, enabling commuting and potential access to customers, as well as in the wider city hinterland, with good accessibility.

8 REVIEW OF ECONOMIC DEVELOPMENT POLICIES AND ISSUES

Role of Villages and Rural Locations

- 8.1 The economic landscape of Greater Cambridge is made up of a number of villages distributed in the South Cambridgeshire local authority area. As employment in Cambridge City and South Cambridgeshire continues to experience growth, the role of employment in villages and rural areas in accommodating floorspace demand has ongoing importance.
- 8.2 South Cambridgeshire District Council recognise the role of these areas and the South Cambridgeshire Local Plan (adopted 2018) sets out the vision and objectives for the development needs for South Cambridgeshire to 2031.
- 8.3 **Policy E/4 Allocations for Class B1 Employment Uses** allocates 6.7 Ha of B1 employment development at North of Hattons Road in the village of Longstanton and 1.9 Ha at West of Eastern Counties Leather, London Road in the village of Pampisford. **Policy E/5 Allocations for B1, B2 and B8 Employment Uses** allocates B1, B2 and B8 employment land development in the villages of Over (1.7 Ha) and Papworth Everard (2.5 Ha).
- 8.4 As set out elsewhere in this report, it is suggested the Longstanton allocation be reconsidered. Whilst Papworth Everard is completed. Allocations remain at Over and Pampisford has permitted development.
- 8.5 **Policy E/12 New Employment Development in Villages** sets out that planning permission will be granted for new employment development (B1, B2 and B8 uses) or expansion of existing premises within development framework villages, provided that the scale of development is in keeping with the scale of the village. This policy is based on the grounds that sensitive small-scale employment development can assist in sustaining the rural economy and reduce the need to travel.
- 8.6 **Policy E/13 New Employment Development on the Edges of Villages** focuses on small scale employment development in supporting the rural economy. The policy

states that new sites adjoining or very close to the development frameworks of villages will be considered where, inter alia, there are no suitable sites or buildings nearby, the development considers previously developed land first, the proposal is justified by a business case, the proposal is in keeping with the scale of the village, and the proposal can be accessed on foot or cycle.

- 8.7 The Local Plan notes that employment sites in villages in South Cambridgeshire are a scarce resource. In order to retain them, **Policy E/14 Loss of Employment Land to Non Employment Uses** sets out that the conversion, change of use or redevelopment of existing employment sites to non-employment uses within or on the edge of development framework will be resisted unless the site can demonstrate that there is no market demand, the community benefit outweighs the employment opportunities and the existing use causes environmental problems.
- 8.8 The above policy suite is considered to form a tight framework for enabling development at village locations and restricting loss of employment land. Ad hoc applications for employment elsewhere would be considered in line with NPPF and Local Plan policies at large.

Current and future development

- 8.9 There are a number of successful villages that are well functioning places for residents and employment. In the north of Greater Cambridge these include, amongst others, Over (Norman Way Industrial Estate), Cottenham (Broad Lane Industrial state and Brookfield Business Centre), Waterbeach (Pembroke Avenue Industrial Estate) and Cambridge Innovation Park and Histon (Vision Park) are well-functioning villages with active employment sites located on the edge of villages. These villages are well connected to Cambridge city, have good access to major roads and present opportunities for more sustainable growth.
- 8.10 In the south of Greater Cambridge, Melbourn (Melbourn Science Park), Pampisford (West of London Road, on the edge of Sawston), Linton (The Grip Industrial Estate) and Sawston (Former Spicers site) successfully host employment sites which retain the village character and provide a mix of floorspace. Dales Manor Business Park in

Sawston is allocated under Policy H/1 for mixed use development, however there is still demand for industrial floorspace at this site with recent industrial floorspace delivered and landowner intent to develop.

- 8.11 In the west of Greater Cambridge, Bar Hill (Trafalgar Way), Papworth (Papworth Everard Industrial Estate) and Comberton (Horizon Park), are well performing villages with good access to the strategic road network and growth opportunities for future floorspace growth.
- 8.12 The majority of these employment locations are orientated towards light industrial provision, with some general industrial and distribution uses. Histon, on the city fringe, has Vision Park, Melbourn has Saxon Way, and Cambourne has its Business Park, which are all office orientated and there are a number of more detached out of town business parks.
- 8.13 The land constraints and costs in and on the edge of Cambridge City make rural and village locations attractive in employment development terms. They allow, subject to planning policy and environmental issues, for expansion that cannot be achieved in the City. Given the ongoing contraction of industrial employment floorspace in the city and expansion in South Cambridgeshire, as demonstrated by the VOA records, the villages are able to play an ongoing role in ensuring viable and available industrial floorspace to meet the needs of the city and wider Greater Cambridge area. Industrial demand for those locations with good connectivity and / or proximity to Cambridge is anticipated to remain moderately strong in the medium term, with examples of new units including Buckingway Business Park (Swavesey) or anticipated demand at Bourn Airfield. Whilst office parks can and frequently do exist in isolation from settlements, industrial estates tend to locate on village peripheries utilising local services.

Role of Neighbourhood Plans in bringing forward employment land

- 8.14 There are currently no made (adopted) Neighbourhood Plans in Cambridge. In South Cambridgeshire, the Great Abington Former Land Settlement Association Estate Neighbourhood Plan was made in February 2019 and primarily focuses on

residential development with no guidance on employment land. The Cottenham and Histon & Impington Neighbourhood Plans have both been agreed for referendum, and both plans include employment policies and sites protected for employment uses. Foxton Neighbourhood Plan has reached submission consultation stage and the plan includes an employment policy and a site allocated for employment uses. Pre-submission consultation on the Waterbeach Neighbourhood Plan has been undertaken and the plan includes a policy for Denny End Industrial Estate. Pre-submission consultation on the Gamlingay Neighbourhood Plan has recently been undertaken and the plan includes an employment policy and a new employment allocation. South Cambridgeshire District Council has a further 13 Neighbourhood Areas designated and Cambridge City Council has a Neighbourhood Area designated and Neighbourhood Plans are being prepared for these areas.

- 8.15 Neighbourhood Plans enable communities to take charge in deciding the future of the places where they live and work. They can be used as a tool to help identify suitable sites for employment land. The development of Neighbourhood Plans in Greater Cambridge provides an opportunity for the designated Neighbourhood Areas to include policies and allocations for employment land. There are numerous examples of adopted Neighbourhood Plans across the country that do this. This would typically be expected to protect or support local business providing services or employment particular to that area. From experience, GL Hearn is also of the view that Neighbourhood Plans can in some instances seek to release employment land particularly where this enables housing development that might otherwise occur on greenfield sites. Overall, the contribution of Neighbourhood Plans to the employment land process is expected to be modest.

Re-use of Farm Building in employment uses

- 8.16 There are examples of former farm building locations being used for general employment uses. Oakington Business Park is one such case where the building footprints, if not the buildings themselves, have been converted from agriculture to a suite of smaller office units. This creates a land use efficiency by recycling sites

and refurbishments are typically lower than new build (but not significantly so). Such conversions should be encouraged to diversify rural employment activity.

Protecting Employment Land

- 8.17 Both Cambridge and South Cambridgeshire Local Plans set out clear policies for protecting employment land.
- 8.18 In the Cambridge Local Plan (2018), **Policy 41 Protection of Business Space** outlines that development will not be permitted on protected industrial sites which would result in a loss of floorspace or land within use class B or sui generis research institutes.
- 8.19 This policy was informed by the Employment Land Review (updated in 2012) which found a significant loss of industrial floorspace in Cambridge and some office space.
- 8.20 Under the policy, a loss of employment floorspace or land will be permitted if the loss of floorspace would facilitate the redevelopment (including the potential for modernisation) and continuation of employment uses, the site has been realistically marketed for a period of 12 months for employment uses and other employment uses do not prove possible on the site.
- 8.21 Increasing residential land values and the scarcity of developable land in Cambridge means that there is expected to be continued pressure on employment floorspace for the development of other uses. Whilst some ad hoc employment sites in Cambridge would benefit from intensification as set out in the supply review, the market feedback is that losses of sites have led to business constraints and rising rents. This should encourage site improvement and investment where business activities are protected. As a result, this policy is considered appropriate.
- 8.22 In the South Cambridgeshire Local Plan (2018), **Policy E/14, Loss of Employment Land to Non-Employment Uses** resists the conversion, change of use or redevelopment of existing employment sites unless it is demonstrated that the site is inappropriate for any employment use to continue having regard to market

demand (12 months marketing), the overall benefit to the community outweighs any adverse effect on employment opportunities and the existing use is generating environmental problems such as noise, pollution or traffic levels. Viability evidence is required to demonstrate why an employment element cannot be provided as part of a scheme.

- 8.23 Again, this policy provides a reasonable level of protection for employment sites including the need for 12 months marketing as a minimum. Elements relating to community benefit and environmental problems might be considered superfluous in any future Local Plan review given the qualitative nature of community benefit and agent of change principle issues related to environmental effects, in so far as new development (i.e. residential) should not lead to a prejudicing of existing employment activities.

Supporting Employment and Training opportunities through Planning Policy

- 8.24 Employment and training of the local population supports economic growth across Greater Cambridge and can be particularly beneficial in higher deprivation areas. This supports the Cambridge Anti-Poverty Strategy which aims to improve the standard of living and daily lives of those residents in Cambridge who are currently experiencing poverty; and to help alleviate issues that can lead households on low incomes to experience financial pressures. The Strategy includes the following activities:

- Supporting people into higher paid employment: to ensure more inclusive growth, the council are working closely with local voluntary and community organisations and public sector bodies which provide employment and skills support for residents on low incomes. Examples include, Signpost2Skills and Apprenticeship Brokerage service.
- Raising skills, attainment and life chances: through working with schools and further education colleges Cambridge City Council have the ability to support additional projects which aim to raise skills and aspirations for young people.

- 8.25 Planning policy can be applied to new developments where there are opportunities to provide apprenticeships or training thus raising skills and attainment and supporting people into higher paid employment, potentially connecting employers and employment opportunities to local schools, colleges, training organisations and voluntary services.
- 8.26 There are a number of authorities in London and the South East that have effectively adopted example policies. Lambeth, Reading and Barnet have set out a policy requirement (as part of Section 106 planning obligation) to access employment opportunities created by the development. This includes creating apprenticeships, using local labour supply and providing training for young people – and where initiatives could not be met in developments, a financial contribution would be considered.
- 8.27 Each Council has created a supplementary planning document (SPD) outlining the context and justification of the requirement. The SPD requirements are outlined below.

London Borough of Lambeth

- 8.28 In order to address Lambeth's high out-of-work benefits, skills shortages and high youth unemployment, Lambeth Borough Council's Employment and Skills Planning Obligations SPD sets out the planning obligations which will be sought from developers:
- Provision of apprenticeships for Lambeth residents aged under 25, with the expectation that one new apprentice would be capable of being generated by every 1,000 sqm of development or every 10 residential units provided,
 - Provision of employment opportunities in the end-user phase which have appropriate support to make them suitable for long-term unemployed Lambeth resident(s),
 - Provision for notification of job vacancies, arising from both construction and end-use occupation, to the council or any other agency nominated by the council;

- Provision for delivery of bespoke pre-employment and skills training for Lambeth residents that will provide them with the skills to access the jobs that are being created.

Reading Borough Council

8.29 Reading Borough Council's Employment Skills and Training SPD recognises that the skills and education of the labour force is crucial to the economic viability, flexibility and competitiveness of the local economy. The Council has a requirement for S106 planning obligations to develop a site-specific Employment and Skills Plan (ESP).

8.30 The ESP's should cover the following outcomes (both construction and end use phase):

- Number of apprenticeships,
- Employment and training initiatives,
- Training and work experience for younger people, including those who are not in employment, training or education,
- Best endeavours to maximise local labour;
- Local procurement agreement - potential for local businesses to be included in tender list.

London Borough of Barnet

8.31 Barnet's 'Delivering Skills, Employment, Enterprise and Training from Development through S106' SPD establishes the use of Local Employment Agreements (LEA) as a mechanism to deliver employment opportunities generated by construction and end uses jobs.

8.32 In the LEA, the developer is expected to set out its approach to forecasting job opportunities, notification of job vacancies, local labour target, jobs brokerage and skills training, apprenticeships and work experience, use of local suppliers and delivery of specific LEA targets.

Provision of Affordable Business Space through Planning Policy
Challenges for small business space

- 8.33 The market analysis and business engagement undertaken by GL Hearn has identified a floorspace affordability issue in the office and employment market in Greater Cambridge. The issue is more apparent and increases further towards the city centre. Common issues include tenants being priced out of the market, long-waiting lists for new space and paying high rents. As a result, the workspace market in Greater Cambridge can be difficult for micro-enterprise and SME's to enter. It is noted that in summer 2020 Cambridge Research Park launched their Plug and Play space designed for smaller start-up businesses or as additional flexi-space for more established companies.
- 8.34 This is supported by a report commissioned by South Cambridgeshire District Council ('Managed Workspace on Cambridge Compass Enterprise Zone sites' by Building Partnership Ltd with Nautilus Associates and Cheffins, 2019). This identified high occupancy rates in most cases with good demand for a range of different products across the spectrum of Innovation Centre, Enterprise Centre, Business Incubator and Co-working hub.
- 8.35 The commissioned report found 24 managed workspace facilities in Cambridge City and South Cambridgeshire District – Appendix F lists providers in full. Findings of the report include:
- Prices of office space per month ranged from £40 per month at Mill Lane in the city to £4,000 per month at The Officer's Mess (Duxford).
 - Operators consulted indicated extremely high occupancy levels with many reporting their existing facilities are currently fully occupied, all without doing any formal advertising.
 - They reported that it is difficult for smaller co-working spaces to thrive in Cambridge with commercial property prices being high, and space in high demand.
 - Business rates also have a considerable impact on the cost-effective operation of co-working space, with many operators offering all-inclusive rents, fees or subscriptions.
 - Graduate tenants reported difficulties in finding suitable grow-on space.

- Key locational considerations made by operators were the accessibility of work spaces, with town centres sites identified as being suited to the tech companies looking to attract a young workforce, whilst out-of-town provision had to provide amenities to draw users out of the city centre.

Planning Policy and Affordable Workspace

- 8.36 Affordable Workspace can be defined as workspace that has a rental value below the market rate (generally, 80% of the market rate or less). The lower rates mean that occupation tends to be feasible for small or start up enterprises. Therefore, by providing affordable workspace it can help local entrepreneurs and firms to have security and to be protected from rising rents and displacement.
- 8.37 London authorities and the GLA provide good examples of planning policies that seek to secure affordable workspace. These use Section 106 agreements in order to deliver affordable workspace. Examples are outlined below.

Intent to Publish London Plan (2019)

- 8.38 The Intend to Publish (ItP) London Plan includes policies to provide new affordable workspace based on evidence that the city is running short of industrial and lower-cost office space and disproportionately affecting micro firms and other SMEs.
- 8.39 Draft Policy E2 addresses this by securing a supply of ‘low cost’ office space “to meet the needs of micro, small and medium-sized enterprises and to support firms wishing to start-up or expand”. For larger commercial proposals above 2,500 sqm, the policy seeks SME workspace provision as part of the proposed development.
- 8.40 Draft Policy E3 has an explicit focus on affordable workspace, which is specifically meant for social, cultural or economic development purposes. The draft policy (section B(2)) suggests that consideration by the Boroughs should be given to drafting affordable workspace policy where “cost pressures could lead to the loss of affordable workspace for micro, small and medium-sized enterprise”.

Islington Local Plan Strategic and development management policies (2019)

- 8.41 The provision of affordable workspaces in Islington is secured through the Section 106 agreements. The Council's evidence has shown that the affordable workspace market has failed in Islington. Their intervention has reportedly secured 4,000 sqm of office and workshop space in commercial development now being let to local entrepreneurs and starts-ups at genuinely affordable rents.
- 8.42 Policy B4: Affordable workspace provides area specific guidance on where 10% of affordable workspace must be included for employment developments over 1,000 sqm, leased to the council for a peppercorn rent for 20 years and managed by a council approved Workspace Provider. Rental values for end occupiers will ultimately depend on the quality of space and its location. All proposals which provide affordable workspace must prepare an Affordable Workspace Statement.

Tower Hamlets Local Plan (2020)

- 8.43 The impact of permitted development rights and the general shortage of industrial property in the borough has disproportionality affected the 'affordable' end of the property market; including being attractive to local SME firms. Without explicit policy it is thought that it would be unlikely the borough could secure space below the market rent.
- 8.44 The local plan details in policy D.EMP2 that "4. Within major commercial and mixed-use development schemes, at least 10% of new employment floorspace should be provided as affordable workspace."

Potential alternate funding sources

- 8.45 In the case of the above examples of affordable workspace secured through policy, viability testing has established the ability of development to provide the space in question. Should this not be the case, alternative funding would be required. Outside of privately operated managed workspace, the Cambridgeshire and Peterborough Combined Authority have secured a total of £146.7m Growth Funding from Central Government through the three rounds of LGF to date which is designed to support business growth in the area. As of summer 2020 around £50m is left to allocate.

Homeworking Trends

- 8.46 This report drafting and data gathering was principally undertaken prior to the COVID-19 pandemic. However final editing in summer 2020 occurs during the effects of COVID-19 pandemic. It is recognised that a very significant increase in homeworking has occurred as a result and is likely to be maintained beyond the pandemic period. The commentary below was completed prior to the COVID-19 effects.
- 8.47 The Homes and Communities Employment Densities Guide 2015 reports that technology is increasing employment densities particularly in offices, enabling agile working. As a result whilst densities of those in an office might not increase, the density relative to those requiring office space as a whole will increase. The Guide outlines that within the UK, 14% of the workforce works from home some of the time and this has increased from 11% in 1998. The analysis also suggests that homeworkers tend to be higher skilled with approximately two thirds self-employed. Lifestyle choices, technology and higher rents for offices influence increases in flexible working.
- 8.48 The Guide acknowledges that different office-based sectors have different requirements ranging from 8-13 sqm per person in offices. These densities build in an assumption that a proportion of the workforce will be working flexibly.
- 8.49 In 2018 the British Council for Offices published 'Office Occupancy: Density and Utilisation'.
- 8.50 The study drew on a sample of 6.6 million sq. ft of occupied office space, spread across 84 occupiers and 314 sites. The study shows average value for workplace density is 9.6 sqm compared with 9.9 sqm in 2013. This broadly reinforces the 2015 HCA Guide findings perhaps with a slight decrease in overall densities.

Labour Force Survey (LFS) data 2018

- 8.51 According to the LFS, nationally 5.1% of workers mainly work from home. However those working at home at some point in the week prior indicates a high volume of occasional home workers.

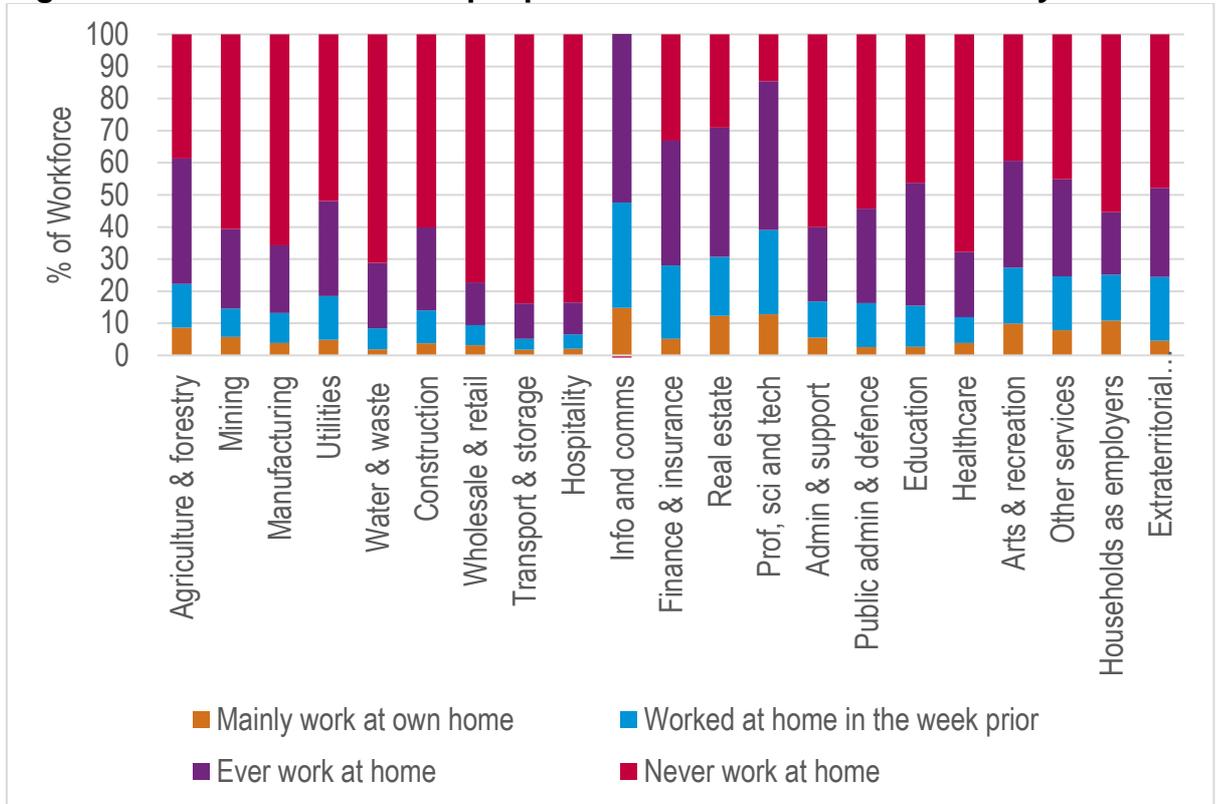
Table 42: Number of employees who work from home by region (2019)

	Number	% workforce mainly WaH	% workforce Week Prior
North East	45,000	3.5	8.2
North East	45,000	3.5	8.2
North West	168,000	4.2	10
Yorkshire & the Humber	166,000	4.6	10.4
East Midlands	125,000	4.4	11.3
West Midlands	158,000	4.3	9.4
East	172,000	5.5	12.5
London	217,000	5.5	16.4
South East	292,000	6.8	17.6
South West	188,000	6.4	14.2
Wales	61,000	4.4	9.9
Scotland	106,000	4	8.3
Northern Ireland	22,000	3.8	7.7
UK	1,722,000	5.1	12.4

Source: ONS Labour Force Survey 2019

- 8.52 2019 data on homeworking by sector (as set out below) indicates that up to 15% of the ICT sector mainly work at home while other office based sectors achieve 12-13%. However when looking at 'worked at home in the week prior' data, between 18-33% of largely office based sectors do so, although admin & support is lower at 10%. This suggests the occasional working at home is highly prevalent.

Figure 28: Extent to which people can and do work from home by sector



Source: ONS Labour Force Survey 2018 Q4

Chartered Institute for Professional Development Publications

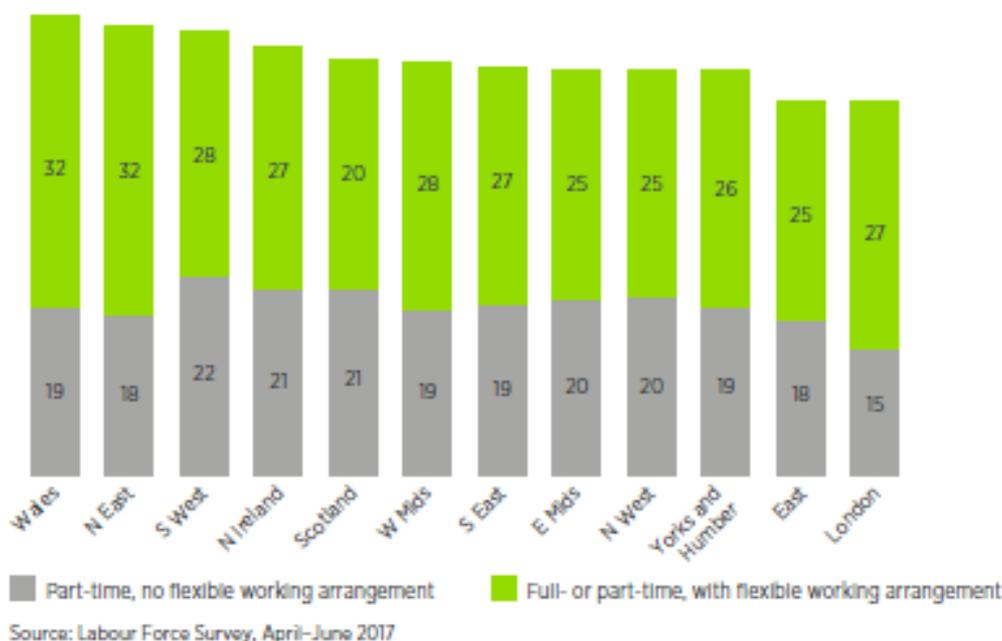
8.53 The Chartered Institute for Professional Development (CIPD) in January 2019 published “Mega trends Flexible working”²⁶. This report defines flexible working as flexi-time, working part-time hours and working from home. The report differentiates the availability (employers permissiveness) and take up (employees pursuance) of flexible working.

8.54 The report suggests that differences across the English regions and the devolved administrations are not significant, although part-time employment is least commonly available among employees who live in London and East of England. In the East of England, 25% of employees have or can have a flexible working arrangement, according to the Labour Force Survey April-June 2017. This data on access to

²⁶ Available at https://www.cipd.co.uk/Images/megatrends-report-flexible-working-1_tcm18-52769.pdf

flexible working should not be confused with the rate of take up. It can also represent part time rather than home working.

Figure 13: Employees with flexible working arrangements, by region/country, 2017 (%)
(UK, not seasonally adjusted, % of employees)



Sourced from: CIPD ‘Mega trends Flexible working’ 2019

8.55 Overall, whilst home working and flexible working are prevalent particularly in office based sectors, there is no evidence to indicate that office densities are decreasing below 9-10 sqm per employee (as assumed in the density models in this report). The evidence suggests that workforces and particularly those office based do take opportunities to work from home on a regular basis but that having an office base with sufficient capacity remains businesses preferred way of working for the foreseeable future.

Employment Land in adjoining authorities

8.56 We have reviewed the employment land provision of Cambridge’s adjoining authorities of Peterborough, Huntingdonshire, East Cambridge and Fenland. Each show positive employment and growth positions.

Peterborough Local Plan 2016 to 2036

- 8.57 The Peterborough Local Plan adopted in 2019, identifies the requirement of 76ha of employment land between 2015 and 2036. This is to help the growth in forecasted new jobs of 17,600 over the plan period.
- 8.58 There are 12 general employment areas in Peterborough where planning permission will be granted for development within Use Classes B1, B2 and B8. There are three business parks where planning permission will be granted for development within Use Class B1.
- 8.59 Policy LP46, allocates 18.38ha of new employment land on four sites for development primarily for use classes B1, B2 and B8. There is 3.35ha allocated for development primarily for use within Class B1.

Huntingdonshire Local Plan to 2036

- 8.60 The Huntingdonshire Employment Land Study (2014), identified the sectors of chemicals, pharmaceuticals, metals manufacturing, electronics, waste and remediation, telecoms, computer-related activity, and research & development as the target growth areas.
- 8.61 The employment land study also showed that by 2036 there will be a requirement for 42-46ha. The study also highlighted the importance of ensuring a range of additional small to medium size (up to 1,000 sqm) high-quality industrial units on new development sites for small and growing businesses.
- 8.62 The Huntingdonshire Local Plan allocates approximately 51ha of employment land, comprising of at least 13ha on previously developed land and 38ha on greenfield land.

East Cambridgeshire Local Plan 2015 to 2031

- 8.63 Policy 1 of the East Cambridgeshire Local Plan sets out the goal to maximise opportunities for jobs growth in the district to provide 9,200 additional jobs in 2011 to 2031, 460 per annum. To achieve this, it is proposed that at least 69.6ha of employment land is provided for B1/B2/B8 use.

- 8.64 Combining the 69.6ha of new employment land with the outstanding commitments of 40.3 ha and allocations of 69.8 ha identified in the core strategy, totals 179.7ha for B1/B2/B8 uses of employment land in East Cambridgeshire.

Fenland Local Plan Adopted 2014

- 8.65 Between 2011 and 2031 Fenland District Council have the aim (Policy LP6) of delivering 7,200 net additional jobs. This equates to a total of between 30ha and 45ha of employment land.
- 8.66 The employment evidence states that in order to compensate for the predicted annual loss to other use at a rate of 2ha, an additional 40ha of employment land is also required.
- 8.67 In total, the Fenland Local Plan (2014) allocates 85ha of employment land for business, industrial and distribution uses distributed between settlements.

Conclusions

- 8.68 **The role of villages:** There are a number of successful villages that are well functioning places for residents and employment. The land constraints and costs in and on the edge of Cambridge City make rural and village locations attractive in employment development terms. Given the ongoing contraction of industrial employment floorspace in the city and expansion in South Cambridgeshire, as demonstrated by the VOA records, the villages are able to play an ongoing role in ensuring viable and available industrial floorspace to meet the needs of the city and wider Greater Cambridge area. Industrial demand for those locations with good connectivity and / or proximity to Cambridge is anticipated to remain moderately strong in the medium term.
- 8.69 **Protecting employment land:** Increasing residential land values and the scarcity of developable land in Cambridge means that there is expected to be continued pressure on employment floorspace for the development of other uses. Whilst some ad hoc employment sites in Cambridge would benefit from intensification as set out in the supply review, the market feedback is that losses of sites have led to business

constraints and rising rents. This should encourage site improvement and investment where business activities are protected. As a result this policy is considered appropriate.

8.70 Supporting employment and training opportunities through planning policy:

Planning policy can be applied to new developments where there are opportunities to provide apprenticeships or training thus raising skills and attainment and supporting people into higher paid employment, potentially connecting employers and employment opportunities to local schools, colleges, training organisations and voluntary services. There are a number of authorities in London and the South East that have effectively adopted example policies which can be considered for Greater Cambridge. Lambeth, Reading and Barnet have set out a policy requirement (as part of Section 106 planning obligation) to access employment opportunities created by the development and each council has created a supplementary planning document (SPD) outlining the context and justification of the requirement.

8.71 Provision of affordable business space through planning policy:

The market analysis and business engagement undertaken by GL Hearn has identified a floorspace affordability issue in the office and employment market in Greater Cambridge. As a result, the workspace market in Greater Cambridge can be difficult for micro-enterprise and SME's to enter. London authorities and the GLA provide good examples of planning policies that seek to secure affordable workspace. These use Section 106 agreements in order to deliver affordable workspace.

8.72 Homeworking trends:

According to the LFS, nationally 5.1% of workers mainly work from home. 2019 data on homeworking by sector indicates that up to 15% of the ICT sector mainly work at home while other office based sectors achieve 12-13%. However when looking at 'worked at home in the week prior' data, between 18-33% of largely office based sectors do so. This suggests the occasional working at home is highly prevalent.

8.73 This report's data gathering was principally undertaken prior to the COVID-19 pandemic and it is recognised that a very significant increase in homeworking has

occurred as a result and is likely to be maintained beyond the pandemic period. This may increase homeworking and therefore reduce requirements on future floorspace needs despite growth in employment in some sectors.

APPENDIX A: Employment forecasting models

9.2 This appendix provides further detail on the context to employment forecasting, including:

- Context: in terms of historical data
- Range of methods explored: including traditional econometric forecasting and experimental approaches (some of which were abandoned)
- Detailed narrative around the preferred methodology

Estimates of past and current employment

9.3 In recent years Cambridgeshire has invested heavily in the development of a wider economic evidence base, as demonstrated by the completion of the Cambridge and Peterborough Independent Economic Review (CPIER) in 2018. CPIER was a major undertaking, chaired by Dame Kate Barker, and supported by various groups. It relied on evidence submitted by partners from across Cambridgeshire and Peterborough. In addition, it drew on some new modelling and data analysis. Two elements are especially important in relation to the evidence base for the new Greater Cambridge Local Plan in respect of future employment provision:

- the development of a new methodology for estimating employment numbers across Cambridgeshire and Peterborough which was devised by the Centre for Business Research (CBR) at Judge Business School, University of Cambridge
- the creation of a new spatial equilibrium model – developed by the Department of Architecture at Cambridge University – which considered the consequences of specific levels of employment growth under different spatial scenarios.

Estimates of past and current employment

9.4 Factoring in the contribution of the CBR team, there are currently at least five different estimates of total employment across Greater Cambridge. It is important to understand the similarities and differences between these.

9.5 Across most local planning authorities, the principal source of evidence on employment has long been the **Business Register and Employment Survey**

(BRES), generated by the Office for National Statistics (ONS). BRES is a business survey. It therefore has all the issues linked to survey-based methodologies. For small geographical areas, sample sizes – particularly in relation to smaller businesses – are modest (with implications for confidence intervals). It relies hugely on how businesses define themselves within the Inter-Departmental Business Register (IDBR) which is the government list of UK businesses, in terms of Standard Industrial Classification (SIC) codes (and this is imprecise and inconsistent). It is completed annually and there is (roughly) an 18-month delay before data are published. It does not count jobs that are not organised through registered businesses (so it does not capture many self employment jobs). In short, there are known issues in relation to it. Yet it does generate data that are granular – both spatially and sectorally – and in generating an evidence base for Local Plans, it is widely used, at least as a starting point.

- 9.6 A second source is the methodology developed by the team from the **Centre for Business Research (CBR)** was different. It relied on the complete Companies House database where all companies have to register. Recognising that not all employment linked to registered addresses is local, it sought to estimate “Cambridge content”, relying on survey-based data from larger employers to calibrate its estimates. For “Cambridge active” businesses (registered elsewhere but with some activity locally), it drew on local sources of information. It also made adjustments to deal with very small companies (that file very little information) and also the relationships between parent and subsidiary businesses²⁷.
- 9.7 Having completed what was a substantial piece of work – and following a dialogue with ONS – the CBR team however took the view that the different methodologies each had strengths and weaknesses. It therefore proposed a **CBR-BRES “blended” solution**. This forms a third source of data which was shared by the CBR / CPIER

²⁷ A full account of the methodology is set out in “*CBR database methodology – companies in the Cambridge Region*” paper produced by CBR, available at <https://www.cambridgeahead.co.uk/media/1471/cbr-database-methodology-jan-2017.pdf>

team with the GL Hearn led consultancy team in summer 2019²⁸. The CBR team considered that this hybrid provided the best estimate of local employment, and this was carried forward in the main CPIER final report (p45).

9.8 There is a fourth source of data. This derives from the **East of England Forecasting Model** (EEFM). This is a model that uses in-region estimates for the East of England to develop economic, demographic and housing trends in a consistent fashion. Historic baseline data for EEFM rely substantially on BRES. However, estimates are also made for the full range of self employment jobs – so the estimate of total jobs is (generally) higher than from BRES alone.

9.9 In addition, a fifth source derives from **Cambridge Econometrics'** own estimates. These are similar to those underpinning EEFM although some adjustments have been made, notably through the inclusion of improved R&D estimates (compared to the EEFM 2017 figures)²⁹ occurring to compensate for differences in the number of sectors normally modelled by CE (45) and the EEFM sectors (31).

Comparing the different estimates

For the total economy

9.10 The table below compares the five different estimates of total employment in the years from 2011 to 2017, the latest data available at the time of the modelling work. It shows some differences between them in relation to both estimates of total employment and the implied pace of growth. It reports on the compound annual growth rate (CAGR) which is the annual change over time in percentage terms and

²⁸ The Councils engaged early in the process of developing the ELR with the CBR/CPIER team, in particular to confirm understanding of their historic employment data and methodology. Discussion was also held regarding exploratory approaches for how that data could be used in future forecasting, but these discussions did not reach a conclusion. There was no further engagement with the CBR/CPIER team as the preferred approach to forecasting future employment was developed. For clarity, engagement with the CBR/CPIER team does not constitute any endorsement by them for the analysis contained within the ELR, or the preferred approach to forecasting future employment.

²⁹ In EEFM, CE's regional 45 sector data are converted to EEFM's 31 sectors. UK level shares from more detailed sector data are used to inform the sectoral allocations. However this means that R&D employment (in Cambridge and South Cambridge) is under-counted. Therefore, instead of using UK shares, CE has used regional shares from BRES. The new estimates of R&D employment are therefore higher than in the previous EEFM estimates.

a commonly used measure of long term growth and change in economies or investments, smoothing out short term change whilst assuming a steady growth rate.

Table 43: Estimates of total employment, 2011-2017³⁰

Cambridge	2011	2012	2013	2014	2015	2016	2017	Growth 11-17	CAGR 11-17
CBR	54,553	55,905	58,979	62,323	64,753	68,173	72,617	18,064	4.9%
BRES	90,500	91,500	96,500	101,500	102,000	102,500	105,500	15,000	2.6%
CBR-BRES blended (CPIER)	93,907	92,672	99,785	103,149	104,771	106,330	110,992	17,085	2.8%
EEFM 2017	94,177	98,262	102,101	107,661	107,317	110,091	111,390	17,213	2.8%
CE estimates	94,448	98,939	102,372	108,653	108,565	108,174	112,952	18,504	3.0%
South Cambs	2011	2012	2013	2014	2015	2016	2017	Growth 11-17	CAGR 11-17
CBR	45,383	48,378	51,234	53,675	58,490	63,745	67,479	22,096	6.8%
BRES	71,000	69,000	69,000	76,500	79,500	82,500	87,500	16,500	3.5%
CBR-BRES blended (CPIER)	66,654	66,478	69,441	76,096	78,479	82,342	85,915	19,261	4.3%
EEFM 2017	79,429	78,736	74,072	82,330	84,463	86,264	86,804	7,375	1.5%
CE estimates	78,860	79,671	76,848	85,307	88,018	89,863	96,129	17,269	3.4%
Greater Cambridge	2011	2012	2013	2014	2015	2016	2017	Growth 11-17	CAGR 11-17
CBR	99,936	104,283	110,213	115,998	123,243	131,918	140,096	40,160	5.8%
BRES	161,500	160,500	165,500	178,000	181,500	185,000	193,000	31,500	3.0%
CBR-BRES blended (CPIER)³¹	159,596	159,344	169,041	179,755	182,270	188,737	197,337	37,741	3.6%
EEFM 2017	173,606	176,998	176,173	189,990	191,781	196,355	198,194	24,588	2.2%
CE estimates	173,308	178,611	179,220	193,960	196,583	198,037	209,081	35,772	3.2%

Source: EEFM and CBR/CPIER. Note that EEFM estimates for 2016 and 2017 are modelled data

Implications

9.11 Estimating employment is intrinsically difficult – and it is, arguably, becoming ever harder as forms and patterns of employment and the locations in which “work” takes

³⁰ At the time of modelling, 2017 was the latest year available

³¹ Note that the data for Greater Cambridge shown here are actually the sum of the figures for Cambridge and South Cambridgeshire provided by CBR. They are (very) slightly different from those that were provided by CBR for Greater Cambridge

place evolve. There is no unambiguously “right” answer, but the data presented above are important for several reasons.

9.12 The Local Plans that were adopted in 2018 had targets of 22,100 net additional jobs for Cambridge City and 22,000 for South Cambridgeshire District over the period 2011-2031. Drawing on the table above, it is apparent that:

- According to the hybrid CBR/BRES data, **South Cambridgeshire** had delivered 92% of the overall jobs target over the first seven years of the (20 year) Plan. Conversely the EEFM 2017 estimate implied that South Cambridgeshire had produced about a third of the jobs target (suggesting that the target was “about right”).
- The differences were less dramatic for **Cambridge** and in the opposite direction – on hybrid CBR/BRES data, it had delivered 71% of the twenty-year target while on EEFM 2017 data, it had achieved about 78%.

Comparisons at the level of individuals sectors

9.13 Differences in job estimates at the level of the total economy are also apparent at the level of some individual sectors. After converting CBR/BRES data to 3 digit SIC codes required for modelling, substantial differences were found compared to EEFM. For 2017, these included higher numbers of jobs in research & development and electronics, and lower numbers in professional services and construction.

9.14 The sectoral analysis is useful insofar as it illustrates just how much variance exists - both across estimates from different sources and on a year-on-year basis (demonstrating particularly the care that is needed in using data which are ultimately survey-based). For some sectors that are especially important for the economy of Greater Cambridge – perhaps most especially the R&D sector, these differences are quite challenging given the requirements of the plan-making process.

Employment projections for Greater Cambridge

9.15 It is, clearly, difficult to agree exactly how much employment growth Greater Cambridge has seen in the recent past. However, the new Local Plans need to look

forward not back. This process requires a view on patterns of past growth as a starting point: in practice, with a sufficiently long time series, the past is often a reasonable guide in determining what the future might look like, particularly in relative terms. Without a consistent view on the past, the challenges of developing an appropriate set of employment projections are not trivial.

Developing projections

- 9.16 In order to move the discussion forward, a number of different methods were identified as possible routes to developing alternative employment projections by the consultancy team; these drew on detailed discussions with the Officers from the Greater Cambridge Planning Service, the County Council Research Group and also with the CBR/CPIER team. These all drew on the data in Table 43, but in different ways. They also adopted different approaches to the development of forward projections.
- 9.17 Three initial methods were used by the GL Hearn led team to attempt to model future employment outcomes using the CBR/BRES hybrid data. Various issues were encountered with these models due to the short run nature of the data and difficulties integrating it with the BRES / EEFM datasets which provided a longer historical data series. The variation in sector composition compared to BRES / EEFM also caused difficulties in developing a long run forecast. As a result ultimately these experimental attempts were abandoned.
- 9.18 A further method was developed by CE which sought to provide a proxy for the CPIER outcomes at the local level (titled CPIER proxy or CP for ease). This derived future broad aggregate employment approximations for the two local districts by applying the CPIER growth rate, for the Cambridgeshire and Peterborough Combined Authority area as a whole, at district level to CE's 2017 district level employment estimates. Outcomes were a reference point but not suitable to be used for the wider study work as sector components were not available which are necessary for employment land modelling. It was also recognised as being a proxy

only and the CPIER team was not involved in its development nor did they acknowledge the outcomes.

9.19 Method E1 was an econometric projection, based on the East of England Forecasting Model.

- Method E1 uses population assumptions from ONS Mid-Year Population Estimates to 2013 and from 2014-2017 the projected population as set out in the 2014-based Sub National Population Projections, and the population growth rates from EEFM 2017 thereafter.

9.20 Separately, a method titled SM was introduced as a labour supply led economic model. This uses population assumptions from the Standard Methodology housing outputs. GL Hearn working with Justin Gardner and CE determined using a series of assumptions the effect on employment of increasing the population in line with the standard method requirement for the two districts. This generated a national policy-led baseline as opposed to an econometrically modelled baseline from method E1.

Greater Cambridge – the case for a different approach

9.21 In generating forecasts – as opposed to projections – for a local economy, the usual approach is to rely substantially on econometric modelling. The employment numbers underpinning the adopted Local Plans across Greater Cambridge were generated in this way; and across local planning authorities nationally, this is the usual approach (or at least a core part of it) in responding to the requirements for evidence surrounding the NPPF. The inference therefore is that for Greater Cambridge, EEFM E1 (as described above) would usually prevail.

9.22 However, the out-turn from EEFM E1 appeared cautious for the economy as a whole; 0.8% per annum from 2021-41. In practice, this is quite similar to regional and national averages (for example, CE’s regional forecast suggests a growth rate in employment across the East of England of 0.6% per annum over the decade from 2021). The question that follows is whether, in forecasting terms, it is appropriate to treat Greater Cambridge as an “average” local economy within the East of England region as we plan for employment growth through to the 2040s, or whether there are reasons for suggesting a different approach.

- 9.23 With regard to the knowledge economy, there is much evidence for suggesting that Greater Cambridge is far from ‘average’ (see Box 1).

Box 1: Greater Cambridge and the regional knowledge economy: Insights from the East of England Science and Innovation Audit

The East of England Science and Innovation Audit – which was prepared in 2017 – examined scientific assets and innovation capabilities across the region. Greater Cambridge dominated the evidence and the narrative. This Audit, sponsored by BEIS and published in September 2017, was led by four Local Enterprise Partnerships (those for Hertfordshire, New Anglia, Greater Cambridge-Greater Peterborough, and the South East (i.e. Essex, Kent and East Sussex)).

The Audit observed that the University of Cambridge was (by far) the largest higher education institution, dominating the regional profile on most indicators. Data from Higher Education Statistics Agency were used to estimate the combined income from collaborative research (involving public funding) from eight higher education institutions across the region; of this, the University of Cambridge accounted for 88%, University of East Anglia for 7% and the University of Essex for 3%. In addition – and aside from the University of Cambridge – the following “research active” organisations were all identified as being within the “regional top 20” and all are located in Greater Cambridge: Babraham Institute in Cambridge; NERC British Antarctic Survey; European Bioinformatics Institute; TWI Ltd; National Institute of Agricultural Botany; MRC Laboratory of Molecular Biology; Microsoft Research Ltd; Toshiba Research Europe Ltd; and Schlumberger Cambridge Research.

The Audit went on to investigate scientific assets and innovation capabilities focused on four key sectors. In each case – albeit to varying degrees – there was evidence that Greater Cambridge accounted for the lion’s share of the regional asset base

- 9.24 However, these observations are not new: most of the associated asset base is well established and has substantially been in place for decades. To the extent that it is causing Greater Cambridge to generate employment at an accelerated rate, it ought already to be factored into historic patterns of growth which drive the econometric approaches underpinning Method E1. Yet we have seen that future growth rates derived through these econometric routes are actually quite modest.
- 9.25 In terms of deriving a perspective on future growth, the more important question is whether there is anything to suggest that business might NOT be “as usual” looking ahead. In this context, the issue is not whether policy is likely to change (and hence whether we are considering “alternative” scenarios), but whether there is anything to suggest that the underlying growth prospects of the Greater Cambridge economy

might be changing (given its asset base) and in a manner that is not seen across the rest of the region.

9.26 Overall, there does appear to have been a notable increase in R&D floorspace over recent years – as evidenced through different parts of the wider study. Although some of the provision might be expensive, it is unlikely that early-stage, knowledge intensive, businesses would be disincentivised to remain in Greater Cambridge as a result. And with the scale of investment into key local sectors, Greater Cambridge ought to be set for accelerated employment growth. There are a substantial number of proposals in terms of planning permissions, allocations and business proposals with published associated job numbers which strongly indicate continued fast growth in R&D related employment. These include West Cambridge, Wellcome Trust, North West Cambridge, former Spicers Site Sawston, Cambridge Biomedical Campus, Granta Park and potential further capacity to be released through the North East Cambridge Area Action Plan.

9.27 Reflecting on the evidence, our conclusion is that the modelled estimates of employment growth derived econometrically (i.e. through Method E1) appear very cautious: they are at odds with the scale of past growth, and there are good reasons to suggest that regional forecasts are not a proxy for the situation in Greater Cambridge. This in turn raises questions about relying too heavily on an econometric model which constrains local potential within parameters which are defined regionally.

9.28 Given the above, further modelling approaches were developed to take into account exceptional sectors in Greater Cambridge.

Developing alternative approaches: The role of key sectors (KS)

9.29 Methods KS1, KS2 and KS3 explore an alternative approach to modelling future growth. This entailed:

- Using Method E1 as a baseline for endogenous population-driven sectors

- Using a different approach for sectors which have been driven by exogenous factors and which have performed much more strongly than the regional average; these need to be considered ‘outside’ EEFM.

Identifying key sectors

- 9.30 Comparing EEFM E1 with the CBR/BRES hybrid data for the period 2010-17, there is a strong correlation between faster growth sectors, albeit with higher growth rates reported by CBR data.
- 9.31 The sectors with high growth in both datasets, either by volume or growth rate, are:
- Health and care
 - Hotel and restaurants
 - Research and development
 - Professional services
 - Computer related
- 9.32 These sectors show broad alignment with the clusters review (in Chapter 3), which considers: life sciences; ICT; and professional services (along with advanced manufacturing).
- 9.33 CE data for the 2010-17 period does not reveal rates equal to the CBR/BRES data. However, the evidence suggests that the recent period – notably from 2012/13 - has been one of exceptionally fast growth with an acceleration after 2010 compared with growth rates from 2006 and before. The aggregate growth rate 2006-17 of 1.5%, which broadly reflects the long run rate back to 1991, accelerates to 2.5% according to CE or 3.5% according to CBR. This highlights the risk of using short-run data for long term planning. The growth rates of the ‘key sectors’ are reported below.

Table 44: ‘High growth’ sectors: Comparing recent historic data (Greater Cambridge)

Sector	<u>Cambridge (CE data) 2006-17 (peak) (No)</u>	<u>Cambridge (CE data) 2006-17 (peak) (pa)</u>	<u>South Cambridgeshire (CE data) 2006-17 (peak to peak) (No) %pa</u>	<u>South Cambridgeshire (CE data) 2006-17 (peak to peak) % (pa) %pa</u>	<u>Greater Cambridge (CE data) 2006-17 (peak to peak) (No) %pa</u>	<u>Greater Cambridge (CE data) 2006-17 (peak to peak) (%pa) %pa</u>	<u>Greater Cambridge (CE data) 2010-17 (recent) (No) %pa</u>	<u>Greater Cambridge (CE data) 2010-17 (recent) (%pa) %pa</u>	<u>Greater Cambridge CBR/BRES 2010-17 (recent) (No) %pa</u>	<u>Greater Cambridge CBR/BRES 2010-17 (recent) (%pa) %pa</u>
Health and care	5,800	4.00%	4,400	4.50%	10,300	4.20%	9,600	6.10%	7,500	5.00%
Hotels and restaurants	4,800	5.90%	330	0.80%	5,100	4.20%	6,000	8.20%	5,900	8.30%
Computer related	-270	-0.40%	1,200	1.90%	950	0.70%	3,600	5.10%	6,500	10%
Research & development	1,650	3.20%	5,800	6.20%	7,500	5.10%	4,800	4.60%	5,300	4.30%
Professional services	3,500	3.90%	2,700	3.00%	6,200	3.40%	4,900	4.00%	6,500	7.40%
Total (all sectors)	14,600	1.30%	16,300	1.70%	30,100	1.50%	33,600	2.50%	42,700	3.50%

Source: EEFM, BRES, CE, CBR

Future growth rates

9.34 For the majority of sectors to 2040 (the initial modelling period), Method E1 (which is equivalent to the updated 2015 EEFM position using local BRES data to 2017) is considered appropriate for modelling future employment outcomes; it enables a correlation with population and employment that is consistent across the region and links to the national outlook. This is corroborated by similar results if the 2001-2017 local sector growth rates or other longer term historic data periods are applied going forwards (see Appendix B). Where this is not the case, further consideration has been given, as explained below.

9.35 For the exogenous key sectors identified in table 44, growth rates relating to the 2001-17 period were used as a starting point. This is considered to be a sufficiently

long run period for the Greater Cambridge economy to provide a consistent picture of performance taking into account peaks and troughs of economic growth. This incorporates a full economic cycle taking into account the 2007/08 financial crisis and takes a ‘peak to peak’ assessment. These are tested against the 1991-2017, 2006-2017 and CBR/BRES data for sensitivity.

9.36 Three sensitivities were developed for the key sectors, these are summarised below.

Table 45: Methods for developing employment projections across Greater Cambridge

Overview	Reference	Growth rate assumption
Continue past growth rate	KS1	Assumes projecting forward the 2001-2017 growth rate for key sectors and other sectors perform as EEFM (E1)
Mid point of past growth rate and baseline	KS2	Uses the mid-point of the outcome between E1 and KS1 for key sectors, essentially halving the growth rate, otherwise other sectors perform as EEFM (E1)
Lower quartile of past growth rate and baseline	KS3	Uses the lower quartile of the outcome between E1 and KS1 for key sectors, otherwise other sectors perform as EEFM (E1)

9.37 The reduction in growth rates is important to consider as it allows for the rate of growth in percentage terms to slow as the sectors expand, avoiding unrealistic absolute year-on-year changes in the sectors as they get larger. This is explored further following the results of the exercise. The outcomes are then tested against the aggregate growth rates and absolute year on year change as a sense check.

Having identified quantitatively the ‘key sectors’ a brief qualitative perspective is provided, which links to the more detailed cluster review reporting chapter 3.

Health and care

9.38 The Health and care sector has consistently seen fast growth in Greater Cambridge. Typically this is an endogenous sector reflecting local population needs. In Greater Cambridge the relationship with life sciences is causing it to perform exogenously in part and therefore driving growth beyond the regional rate, which in itself is growing driven in particular by an ageing population.

9.39 Analysis of 2017 BRES data at 5 digit SIC code for Health and Care subsectors indicates that 58% of the sector employment in Greater Cambridge is in the subsector 'Hospital activities' whereas the equivalent is 36% at the regional level. The other sub sectors are not considered to be related to exogenous growth activities (GPs, dental, social work etc). Addenbrooke's Hospital in particular is directly connected to research activities and the life sciences sector, it has expanded recently and has further planned expansion. The higher proportion of the 'Hospital activities' sub sector is assumed to have historically achieved a higher rate of growth above that of other endogenous sub sectors to lead to a rate of high growth overall for the health and care sector.

Hotels and restaurants

9.40 Cambridge has seen recent fast growth in hotels and restaurants as reported in table 44. Appendix C highlights that 2017 was an exceptional year in the City and there was a larger than normal number of developments. When this single year of data is removed (taking 2016 as an end point rather than 2017), the growth trend from 2001 or 2006 falls back to being in line with the regional / EEFM rate in the future. This highlights issues with short run data sets and as a result this sector is not modelled as a growth sector going forwards.

Computer related

9.41 The Computer related sector has seen very recent fast growth particularly in South Cambridgeshire as reported in Appendix B. It is also considered a key cluster in the local economy. However, sector employment has fluctuated considerably since 2001 after the rapid growth through the 1990s dot com boom. Despite the short run (2014-17) fast growth in South Cambridgeshire, testing growth rates from 2001 onwards does not suggest justification for modelling growth above the regional rate.

Research and development

9.42 Research and development has seen consistent fast growth particularly in South Cambridgeshire since around 1999. This is a key employment sector relating to life sciences (including biotech, natural science and engineering) and linked to recent

and planned growth across the various campuses including Granta Park, Babraham and Wellcome Genome Campus, as a result fast growth is expected to continue. Of note is that the sector has grown from a relatively low base of 7,600 jobs in 2001 to 17,700 jobs by 2017. This suggests that whilst the sector may continue to expand rapidly in absolute terms, in percentage terms it will slow down as it expands.

Professional services

9.43 Professional services is also a key sector in Greater Cambridge and both districts have seen ongoing growth albeit with significant fluctuation. The 2001 peak is considered an appropriate start point for modelling. Detailed analysis of BRES data indicates the sub-category of 'Engineering activities and related technical consultancy' is higher in both districts than it is in the region.

9.44 This section provides a detailed narrative on the modelling techniques for the preferred central and higher growth scenarios.

Testing growth rates: Cambridge

9.45 The table below explores the results for the City of continued growth rates for key sectors and the economy overall using a number of sources.

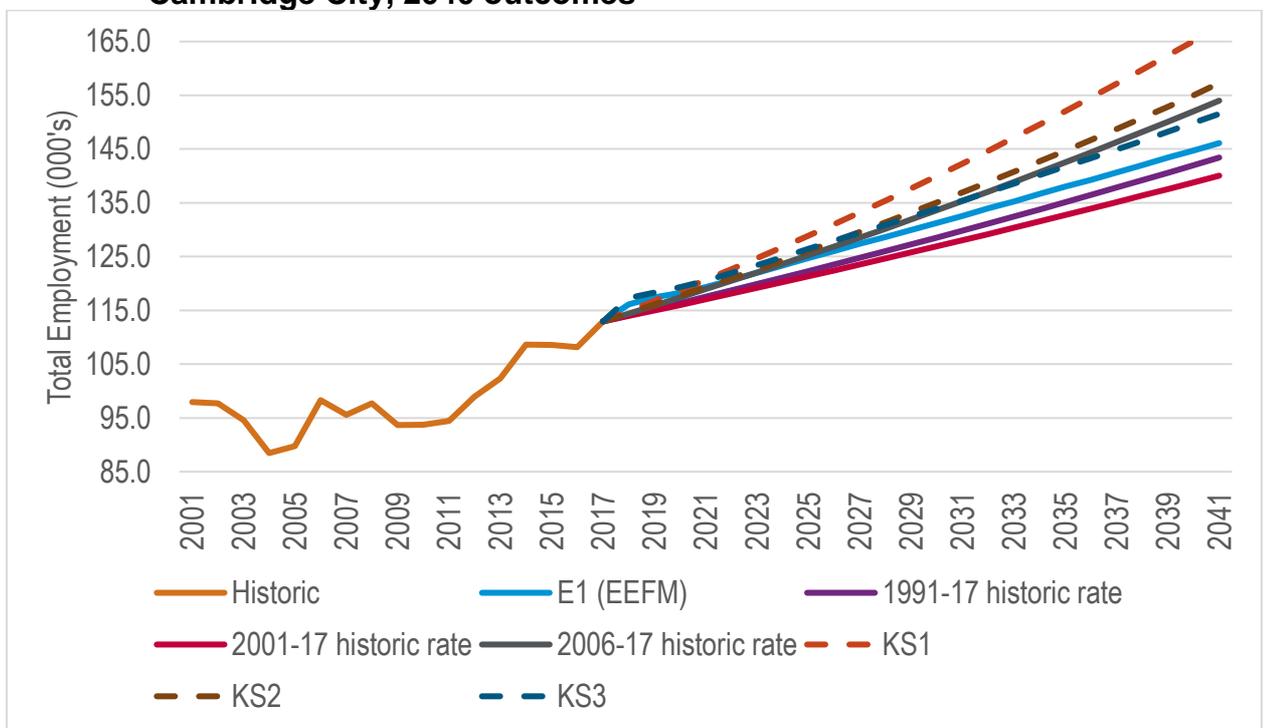
Table 46: Application of Growth Rates to 2017 data, Selected Sectors, Cambridge City, 2040 outcomes

		Professiona l services	Research & development	Health & care	Total (all sectors)
2017 employment	No	10,260	5,630	16,770	112,950
1991-17 rate	%pa	1.8%	5.1%	2.8%	1.0%
2001-17 rate	%pa	2.0%	2.4%	3.3%	0.9%
2006-17 rate	%pa	3.9%	3.2%	4%	1.3%
E1 - EEFM	No	11,100	6,400	23,400	144,800
E1 - EEFM	%pa	0.3%	0.5%	1.5%	1.1%
KS1 (CC)	No	16,300	9,800	35,200	165,100
KS1 (CC)	%pa	2.0%	2.4%	3.3%	1.7%
KS2 (CC)	No	13,700	8,100	29,300	155,000
KS2 (CC)	%pa	1.3%	1.7%	2.5%	1.4%
KS3 (CC)	No	12,400	7,200	26,300	149,900
KS3 (CC)	%pa	0.8%	1.1%	2.0%	1.2%

Source: CE, CBR, GL Hearn

9.46 The data is presented in the chart below.

Figure 29: Application of Growth Rates to 2017 data, Selected Sectors, Cambridge City, 2040 outcomes



Source: CE, GL Hearn. Historic growth rates are projected for comparison.

- 9.47 The EEFM model itself draws on a series of interactions and forecasts at the regional and local level to produce a future average growth rate of 1.1%. The historic rates for the City according to EEFM range from 0.9 to 1.3% per annum. This is plausible and most comparable to KS3 which has a similar outcome but with greater emphasis on the Key Sectors.
- 9.48 Method KS1 in table 46 draws on the 2001-2017 growth for the key sectors identified and draws on E1 for all other sectors. This increases total employment to 20,400 by 2040 within the City in comparison to the baseline model Method E1.
- 9.49 The rate and level of growth for the City under method KS1 appears unrealistic in the context of historic performance and given the physical constraints of the urban fabric and tight boundaries of the City, increasingly relying on intensification of sites to achieve and accommodate growth – the CB1 development being a good example.
- 9.50 Therefore, to avoid an unrealistically high level of growth, KS2 and KS3 provide a balanced position between method E1 and KS1. The absolute numbers and growth rates for key sectors therefore move closer to E1. KS2 still leads to an overall position where the total economy growth rate is above its recent historic performance. Jobs growth overall is 42,050 by 2040 under Method KS2 compared with 31,850 for Method E1 being around 24% higher.
- 9.51 Method KS3 uses a lower quartile outcome between method KS1 and E1. The overall rate here is 1.2% which is slightly above the long-term average but lower than the recent growth rate. Jobs growth above baseline E1 is 5,100 by 2040.

Testing growth rates: South Cambridgeshire

- 9.52 Table 47 reports the growth rate and outcome testing for South Cambridge.

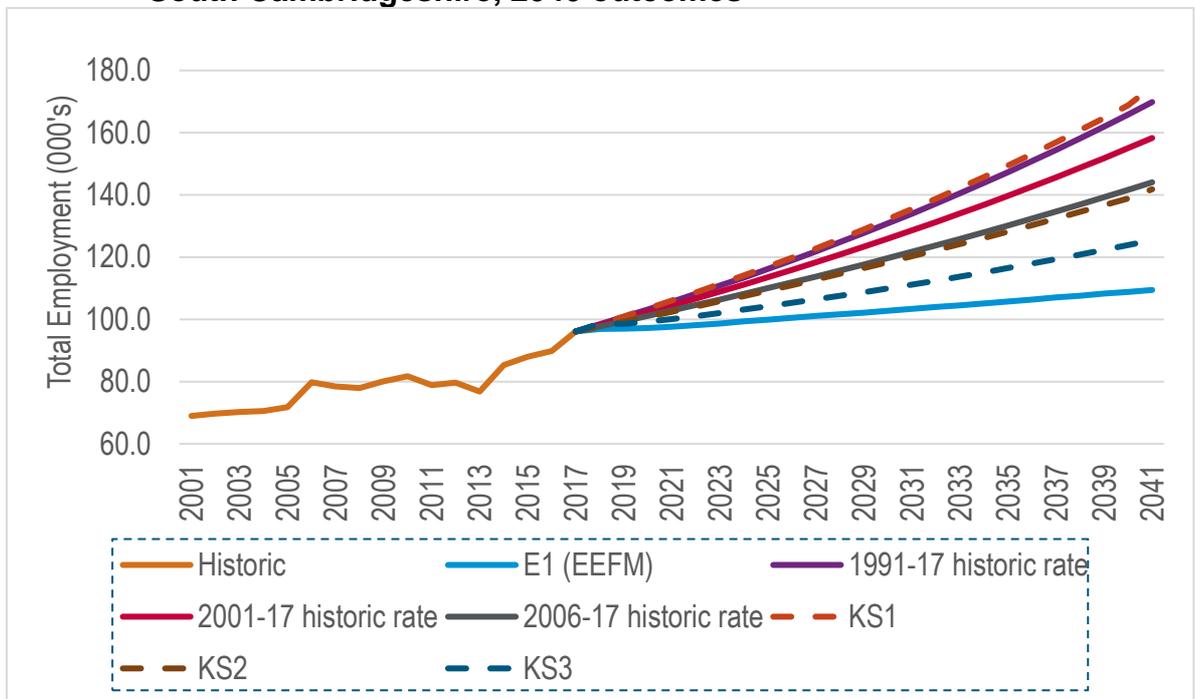
Table 47: Application of Growth Rates to 2017 data, South Cambs, 2040 outcomes

Sector		Professiona l services	Research & development	Health & care	Total (all sectors)
2017 count	No	10,000	12,110	11,550	96,130
1991-17 rate	%pa	3.4%	9.4%	3.3%	2.4%
2001-17 rate	%pa	1.5%	7.5%	2.8%	2.1%
2006-17 rate	%pa	2.9%	6.2%	4.5%	1.7%
E1 - EEFM	No	10,800	14,600	14,000	108,900
E1 - EEFM	%pa	0.3%	0.8%	0.8%	0.5%
KS1 (SC)	No	14,000	63,700	21,800	168,900
KS1 (SC)	%pa	1.5%	7.5%	2.8%	2.5%
KS2 (SC)	No	12,400	39,100	17,900	138,900
KS2 (SC)	%pa	0.9%	5.2%	1.9%	1.6%
KS3 (SC)	No	11,600	26,900	15,900	123,900
KS3 (SC)	%pa	0.7%	3.5%	1.4%	1.1%

Source: CE, GL Hearn

9.53 The same approach is applied to the figure below.

Figure 30: Application of Growth Rates to 2017 data, Selected Sectors, South Cambridgeshire, 2040 outcomes



Source: CE, GL Hearn. Historic growth rates are projected for comparison.

9.54 Table 47 for South Cambridgeshire sees very low sector and aggregate growth rates forecast under E1 whereas KS1 reports 60,000 additional jobs by 2040 compared

with E1. This is driven in particular by Healthcare and R&D, the latter growing to five times the size of the 2017 position and Health & Care almost doubling. Neither of these outcomes are considered realistic. Historically in R&D, the sector from 2001 to 2017 grew quickly from a low base (see Appendix B & C) resulting in a fast growth rate which will inevitably fall as the sector becomes larger.

- 9.55 At the aggregate level for South Cambridgeshire, total employment growth rates have historically exceeded method KS2 and KS3. However, it can be seen that total employment growth has steadily fallen from the 90s as overall employment has expanded, which is to be expected. This suggests such an outcome as method KS2 reports would be a high rate of growth, requiring a greater rate of year on year absolute change than seen historically, but not is not implausible. On this basis method KS3 is considered reasonable but could underestimate growth potential.

Testing growth rates: Greater Cambridge

- 9.56 Turning to Greater Cambridge as a whole, table 48 reports the aggregated results.

Table 48: Application of Growth Rates to 2017 data, Greater Cambridge, 2040 (aggregated)

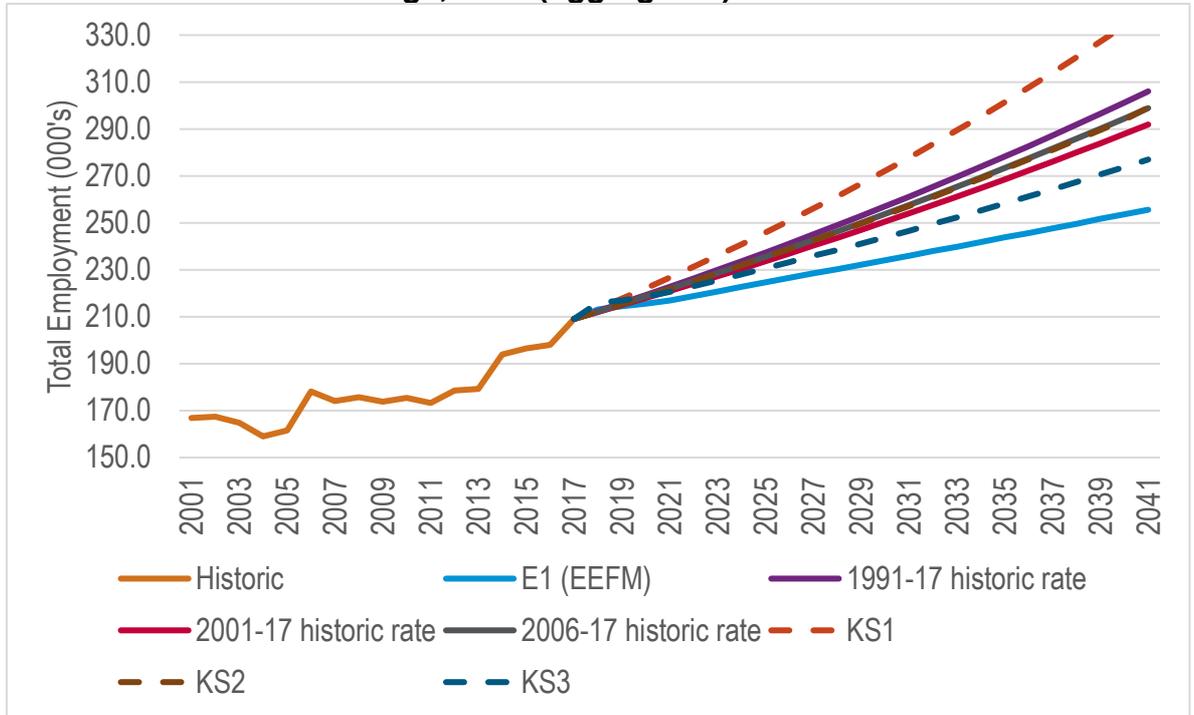
Sector		Professional services	Research & development	Health & care	Total (all sectors)
2017 count	No	20,270	17,730	28,320	209,100
1991-17 rate	%pa	2.5%	7.5%	3.0%	1.6%
2001-17 rate	%pa	1.8%	5.4%	3.1%	1.4%
2006-17 rate	%pa	3.4%	5.1%	4.2%	1.5%
E1 - EEFM	No	21,900	21,000	37,400	253,600
E1 - EEFM	%pa	0.3%	0.7%	1.2%	0.8%
KS1 (GC)	No*	30,300	73,500	57,000	334,000
KS1 (GC)	%pa	1.8%	6.4%	3.1%	2.1%
KS2 (GC)	No*	26,100	47,200	47,200	293,900
KS2 (GC)	%pa	1.1%	4.4%	2.2%	1.5%
KS3 (GC)	No*	24,000	34,100	42,300	273,800
KS3 (GC)	%pa	0.7%	2.9%	1.8%	1.2%

Source: BRES, EEFM

* aggregated from authorities, Greater Cambridge historic rates derived at Greater Cambridge level data, accounting for differences

9.57 This is charted below.

Figure 31: Application of Growth Rates to 2017 data, Selected Sectors, Greater Cambridge, 2040 (aggregated)



Source: CE, GL Hearn. Historic growth rates are projected for comparison.

9.58 The additional jobs for KS1 for Greater Cambridge at 2040 compared with E1 is 80,400 with a total of 334,000. This aggregate figure also exceeds CE’s estimate of the CPIER growth model for the two authorities of 309,010 to 2040 (growth rate of 1.7%).

9.59 The growth rate for KS1 is 2.1% which exceeds historic rates - this is due to high long-term average annual growth rates for growing individual sectors leading to disproportionate absolute change. This rate or level of growth should not be considered realistic given the population, development and environmental implications.

9.60 Method KS2 identifies the mid-point of the outcomes between KS1 and E1 for the key sectors whilst KS3 reports a lower quartile.

- 9.61 For Greater Cambridge KS2 reports an outcome as a whole comparable to historic rates of growth. Two sectors in particular drive growth, Health & care and R&D, which are discussed further.
- 9.62 In the case of Health & care, as noted, this is traditionally an endogenous sector typically linked to population growth. For the sector to double to 2040 (KS1) non endogenous elements i.e. 'hospital activities' employment would need to reach around 40,000 jobs, assuming the remainder of the sub sectors grew at the population driven rate (E1). The scale of labour, skills and demand for such growth is considered unrealistic.
- 9.63 As a sense check, between 2001-17 this sector added an average 680 jobs per year. To achieve KS2 Health & care growth would require an extra 820 jobs per year which should be considered as the upper most level of growth. A continuation of the historic absolute annual change (the 680 jobs) would see 43,300 jobs in Health & care rather than 47,200 under Method KS2 and 42,300 under Method KS3. The range of these outcomes is therefore considered plausible, taking into account population growth and the ongoing expansion of Addenbrooke's Hospital.
- 9.64 R&D jobs growth has come from a low base in the districts over the last two decades (see Appendix C) leading to high percentage growth rates. As a sense check, year on year averages across Greater Cambridge have seen 630 extra jobs per year from 2001-17 with sizeable fluctuations. Disregarding KS1, method KS2 requires an increase to an average of 1,300 jobs each year. Whilst this might be achievable in occasional years (and is comparable to the 2011-17 average, with a further 2,000 jobs reported by BRES in 2018, published after the primary modelling work was undertaken), such a consistent rise over 20 years lacks evidence. It would entail a very strong supply of highly skilled labour being drawn perhaps from university graduates but also from in-migration both domestically and internationally. Equally though, a continuation of the 630 jobs absolute change seen over the last two decades could be considered an underestimation of growth given the sector and Greater Cambridge cluster potential. Method KS3 sees growth of 16,400 jobs or an

average of 710 jobs per annum. Whilst this remains a significant number, it is considered to be a minimum to plan for, given it is only slightly above the annual historic absolute change which occurred from a smaller base. Information within planning applications provided by the applicants as of spring 2020 reports an anticipated employment capacity direct growth of over 13,000 B1b related jobs in the proposal area including West Cambridge, Wellcome Genome Campus, North West Cambridge and former Spicers Site at Sawston, before considering Addenbrooke's, Granta Park and the North East Cambridge Area Action Plan capacity (and further developments coming forward over of the 2020-41 period).

- 9.65 For Professional services, the E1 outcomes appear very low in relation to past growth rates whilst methods KS2 and KS3 are more realistic outcomes. Year on year average change has been around 300 jobs since 2001, which would lead to around 7,000 additional jobs by 2040 if continued, close to KS2 outcomes. However this sector is more mature than for example R&D, so the KS2 – KS3 range is considered appropriate.
- 9.66 Overall, Methods KS2 and KS3 are considered to act as a more realistic range than other projections. They allow for an outcome where the key growth sectors continue to grow quickly over the next two decades, however their rate of growth slows to reflect stabilisation in the absolute year on year change. Method KS2 totals 293,900 jobs by 2040 or 1.5% p.a. and is comparable with the rate of growth seen over the 2001-17 period overall. Method KS3 totals 273,800 or 1.2% allowing for a deflation in the growth rate as the total employment base grows.

Considering multipliers

- 9.67 Method KS2 is considered to overestimate R&D jobs, as the average year on year absolute change would have to remain around double its historic rate. To avoid an over estimation of R&D jobs creation, as a sense check it is assumed that the midpoint of annual job change growth between the historic rate and KS2 rate is created, being a 'cap' of 960 jobs per annum (still above the KS3 rate) or 39,700 overall.

- 9.68 However, given that the aggregate economy growth rate under KS2 is within the range of historic rates, consideration has been given as to how other non-key (endogenous) sectors might perform as total jobs and population increase.
- 9.69 In-economy multiplier effects relate to those generated through additional population growth (induced) and through business supply chains (indirect). The GLA estimate that every 1,000 additional residents generates around 171 jobs³² whilst CE estimate 178. A rise of 30,000 residents (Greater Cambridge Housing and Employment Relationships Report, September 2020) therefore generates over 5,000 population related jobs particularly in retail and education. Further indirect job creation will occur outside of the key sectors in a range of other sectors.
- 9.70 Whilst multiplier jobs have not been modelled in full, the difference between the 960 jobs per annum in R&D ‘cap’ and the ‘uncapped’ R&D job growth (1,300) under KS2 is considered a useful estimate of multiplier effects for the economic growth as a whole under this scenario as it rises proportionately over time once the capped rate has been exceeded. These additional multiplier jobs are assumed to occur across endogenous (non key) sectors.

Implications in terms of employment forecasts

- 9.71 Reflecting on the evidence and arguments set out in this report – and taking on board the important work initiated by Cambridge Ahead and then CPIER which has been completed over recent years – our conclusion is that the modelled estimates of employment growth derived econometrically (i.e. through EEFM) appear cautious. They are at odds with the scale of past growth, and Greater Cambridge is far from an “average” economy – yet the effect of the econometric model is to constrain its potential within parameters which are defined regionally.
- 9.72 On the other hand, the forward extrapolation of employment estimates based on the sector growth rates observed through hybrid CBR/CPIER-BRES data from 2010-17

³² GLA Economics Working Paper 71 - More residents, more jobs? 2015 update - The relationship between population, employment and accessibility in London

generates outcomes that are implausibly high. Attempts to use this data to arrive at more reasonable outcomes were unsuccessful.

- 9.73 This then leaves modelling effects of selected key sectors. Whilst we have no reason to assume that sectors driven largely by population growth behave differently in Greater Cambridge from the rest of the region, there is evidence that adjustments should be made to account for sectors with a very different growth dynamic. This refers specifically to the knowledge intensive sectors (or in the case of Health & care a related sector) which are underpinned by Greater Cambridge's outstanding scientific assets and innovation capabilities. These attributes are unique and "off model" adjustments ought to be made to reflect them.
- 9.74 There is a broad correlation in the key sectors to be treated as exogenous across the data sources analysed. Examined historically (from 1991 or 2001 to 2017), local employment growth is exceptional (compared to the regional performance) in Professional services, Research & Development and Health & Care.
- 9.75 Simply using the 2001-2017 annual average growth rate for the key growth sectors results in an employment count by 2040 (KS1) which is unrealistic in the increments of job change that could occur year on year.
- 9.76 Lower ranges (KS2 and KS3) use the mid-point and lower quartile of outcomes for the baseline and 2001-2017 rate applied to key sectors. More detailed examination of year on year growth indicates that for R&D it is unlikely that even KS2 rates can be achieved.
- 9.77 The headline results are reported below. Methods KS2 and KS3 compound growth rates of 1.2%-1.5% are with the range of historic growth rates being 1.4% to 1.6% so are both considered achievable and suitable for employment testing.

Table 49: Employment by method, Greater Cambridge 2017-40

Method	2017	E1 (EEFM)	KS1	KS2	KS3	CP (CPIER proxy)
Growth rate from 2017		0.8	2.1	1.5	1.2	1.7
Change from 2017		44,500	124,900	84,800	64,700	99,900
Total	209,100	253,600	334,000	293,900	273,800	309,000

Source: GLH Analysis

- 9.78 Following the initial modelling exercise 2017-2040, the Local Plan Period was confirmed for 2020-41. This period results in the following outputs which include the standard method model which was only tested for the Local Plan period.

Table 50: Employment by method, Greater Cambridge 2020-41*

	E1 (EEFM)	KS1	KS2	KS3	SM (standard method)	CP (CPIER proxy)
Growth rate from 2020	0.8	2.1	1.5	1.1	0.9	1.7
Change from 2020	40,100	120,800	78,700	58,400	45,800	92,100
Total	255,600	342,900	299,100	277,000	257,600	314,000

Source: GLH Analysis

* base historic data is 2017, therefore modelling commences 2017. As a result 2020 data start is different in each method.

- 9.79 Finally as a sense check, the preferred forecasts (KS2 and KS3) have been tested against the aggregate historical absolute jobs year on year average change figures as below.

Table 51: Year on year absolute employment change projections ('000s jobs) to 2041

	1991 - 2017 (pa)	1991-2017 Proj'd 2020-41	2001-2017 (pa)	2001-2017 Proj'd 2020-41	2011-2017 (pa)	2011-2017 Proj'd 2020-41	KS2 (pa)	KS2 Proj'd 2020-41	KS3 (pa)	KS3 Proj'd 2020-41

Cambridge City	1.0	21.4	0.9	19.7	3.1	64.8	1.8	37.2	1.5	32.2
South Cambridgeshire	1.7	36.0	1.7	35.6	2.9	60.4	2.0	41.6	1.2	26.2
Greater Cambridge	2.7	57.4	2.6	55.3	6.0	125.2	3.8	78.7	2.7	58.4

Source: GLH Analysis

- 9.80 The results above confirm that the recent period has been one of fast growth. It is reasonable to expect that whilst the economy can perform at this higher rate for a period, over time this falls back towards longer run absolute change that is constrained by macro economic, population and environmental factors. It is of note that in KS2 and KS3 there is a greater emphasis on growth in Cambridge rather than South Cambridgeshire compared to the past. This is due to the underlying endogenous sectors in EEFM anticipating greater population and related jobs growth - which may in fact manifest in South Cambridgeshire given the area's physical capacity for growth (such as North East Cambridge or Welcome Trust Genome Campus).
- 9.81 Method KS3 has alignment with past absolute change and as a result reflects a 'business as usual' or **central growth** scenario which is the most likely outcome as it takes into account overall historic patterns including the fast growth recent past.
- 9.82 Method KS2 outcomes sits broadly in the middle of the longer term historic (1991 or 2001 - 2017) and recent historic (2011-17) absolute change. This is considered as a **higher growth** scenario, which places greater weight on the on fast growth in the recent past, particularly in key sectors.

Table 52: Recommended growth employment range for Greater Cambridge to 2041

	KS2 (Higher Growth)	KS3 (Central Growth)
Growth rate from 2020	1.5	1.1
Change from 2020 CC	39.6	32.2
Change from 2020 SC	40.1	26.2
Change from 2020 GC	78,700	58,400
Total	299,100	277,000

Source: GLH Analysis

APPENDIX B: Employment Rates – South Cambridgeshire and Cambridge City

The following tables set out the sector by sector comparison of the outcomes of different historic rates applied to 2017 data.

Cambridge City Jobs Growth by 2040 (000s)

Industry	2017	Meth E1	CC 1991-17 rte	CC 2001-17 rte	CC 2006-17 rte
Agriculture & fishing	0.05	0.0	0.0	0.1	0.0
Mining & quarrying	0.00	0.0	0.0	0.0	0.0
Food manufacturing	0.14	0.1	0.0	0.1	0.5
General manufacturing	0.50	0.3	0.1	0.0	0.1
Chemicals excluding pharmaceuticals	0.16	0.1	0.1	0.0	0.2
Pharmaceuticals	0.01	0.0	0.0	0.0	0.0
Metals manufacturing	0.10	0.1	0.0	0.0	0.0
Transport equipment, machinery	0.14	0.1	0.1	0.3	0.1
Electronics	1.01	0.8	0.5	0.7	1.4
Utilities	0.65	0.7	1.4	3.6	2.4
Waste & remediation	0.26	0.3	1.8	0.4	0.2
Construction	2.09	2.3	1.1	1.5	1.4
Wholesale	2.62	3.1	2.0	1.4	1.6
Retail	9.32	13.2	9.5	10.4	9.3
Land transport	1.66	1.7	1.3	1.2	1.6
Water & air transport	0.03	0.0	0.0	0.0	0.0
Hotels & restaurants	10.24	19.0	22.7	16.3*	38.3
Publishing & broadcasting	3.19	3.1	3.3	3.0	3.2
Telecoms	0.81	0.9	0.8	1.0	0.6
Computer related activities	5.60	5.8	12.9	6.0	5.1
Finance	1.30	1.1	0.6	0.4	0.7
Real estate	1.79	2.1	3.0	3.8	4.7
Professional services excluding R&D activity	10.26	11.1	15.5	16.3	24.7
Research & development	5.63	6.4	17.7	9.8	11.6
Business services excluding employment activity	2.87	3.2	4.3	2.9	3.8
Employment activities	2.88	3.2	3.0	4.5	2.6
Public administration	2.14	2.7	1.0	1.0	0.5
Education	24.14	30.8	31.9	27.5	26.7
Health & care	16.77	23.4	31.4	35.2	41.0
Arts & entertainment	2.98	4.4	5.8	8.0	6.0
Other services	3.60	4.8	6.0	9.2	9.8

Total (sum)	112.95	144.8	177.9	164.6	197.8
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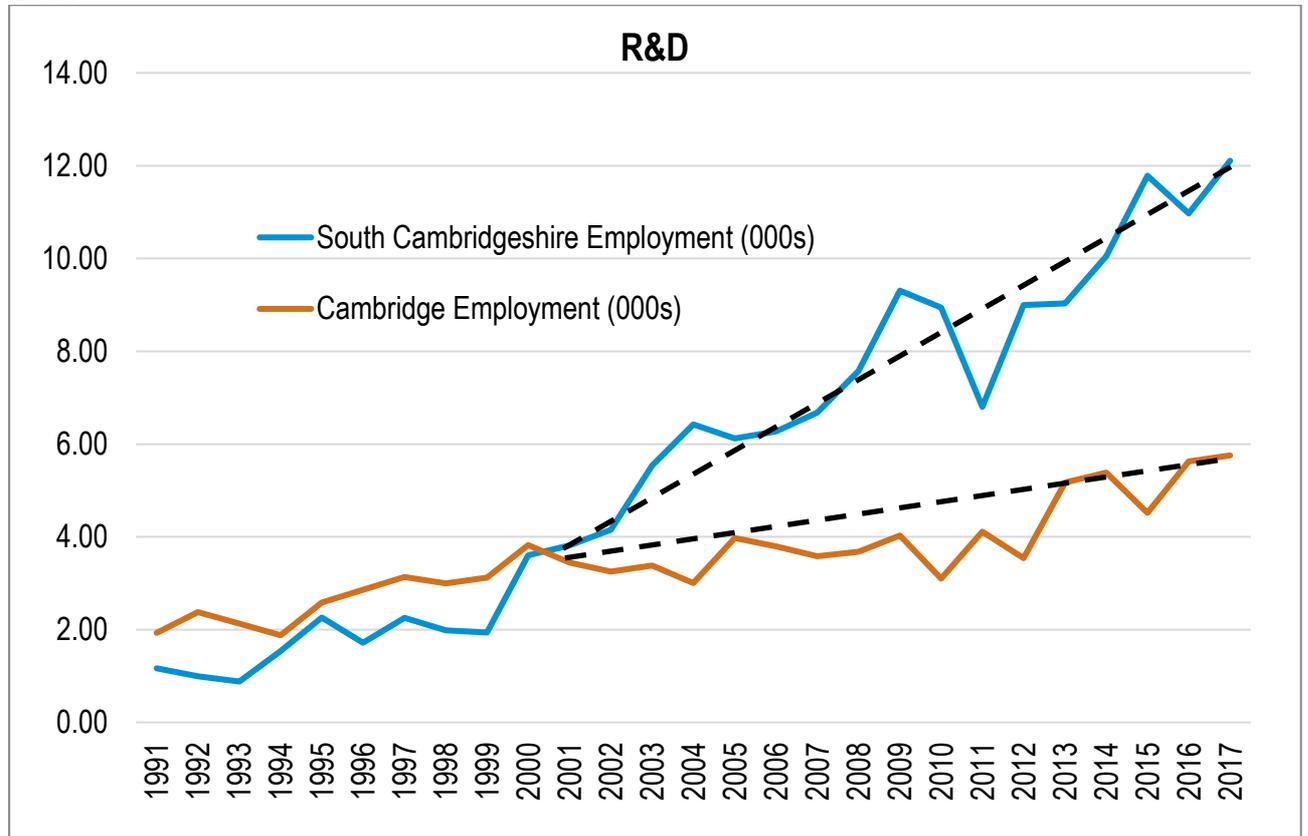
*Adjusted to 2016 rather than 2017

South Cambridgeshire Jobs Growth by 2040 (000s)

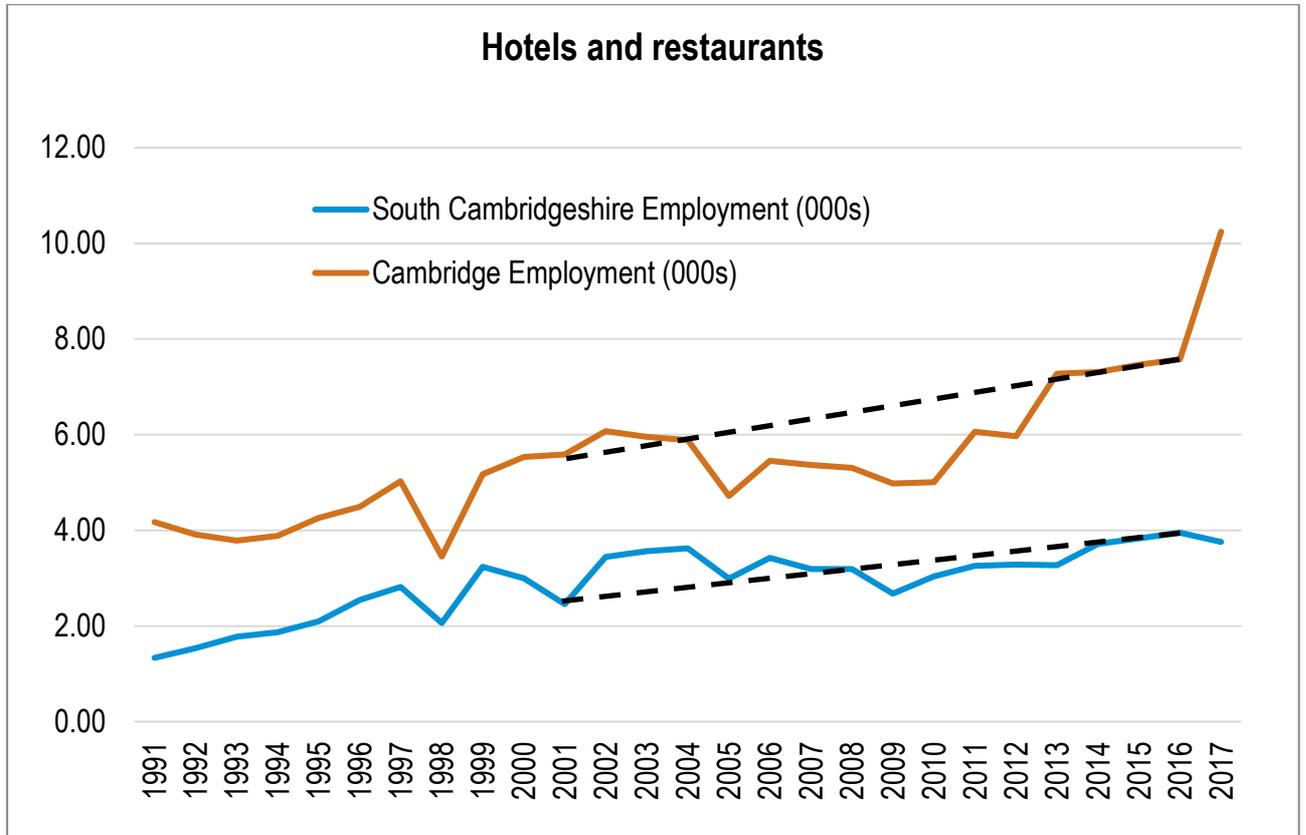
Industry	2017	Meth E1	SC 1991-17 rte	SC 2001-17 rte	SC 2006-17 rte
Agriculture & fishing	1.28	0.8	0.9	2.0	0.7
Mining & quarrying	0.05	0.0	0.0	0.1	0.0
Food manufacturing	1.07	1.1	0.8	1.1	1.0
General manufacturing	2.19	1.3	1.4	0.9	1.4
Chemicals excluding pharmaceuticals	1.32	0.9	0.6	0.4	0.9
Pharmaceuticals	0.56	0.6	0.3	2.0	0.2
Metals manufacturing	0.63	0.6	0.5	0.3	0.3
Transport equipment, machinery	3.88	3.8	6.9	5.1	6.4
Electronics	1.69	1.3	3.0	1.5	2.9
Utilities	0.12	0.1	0.0	0.0	0.0
Waste & remediation	0.39	0.5	0.3	0.9	1.0
Construction	7.38	9.6	10.4	18.3	12.6
Wholesale	5.28	5.8	7.8	6.4	7.3
Retail	4.23	5.1	4.8	9.2	5.5
Land transport	1.63	1.6	1.7	1.8	1.6
Water & air transport	0.03	0.0	0.0	0.0	0.0
Hotels & restaurants	3.76	5.9	9.4	6.9	4.6
Publishing & broadcasting	1.00	1.0	4.1	0.6	0.4
Telecoms	0.53	0.6	4.6	0.3	2.2
Computer related activities	6.60	7.0	14.4	6.9	10.1
Finance	0.90	0.9	1.4	1.8	0.7
Real estate	0.75	1.0	2.3	1.0	0.7
Prof services excl R&D activity	10.00	10.8	21.8	14.0	19.2
Research & development	12.11	14.6	95.7	63.7	47.9
Business services excluding employment activity	3.58	4.4	12.1	8.6	3.9
Employment activities	1.24	1.5	2.0	8.3	12.3
Public administration	1.09	1.2	2.0	1.5	0.4
Education	7.49	8.2	16.7	23.9	7.9
Health & care	11.55	14.0	24.1	21.8	31.5
Arts & entertainment	1.24	1.5	2.3	1.4	1.1
Other services	2.57	3.0	4.3	3.8	1.6
Total (sum)	96.13	108.9	256.7	214.4	186.4

APPENDIX C: Growth sectors 1991-2017

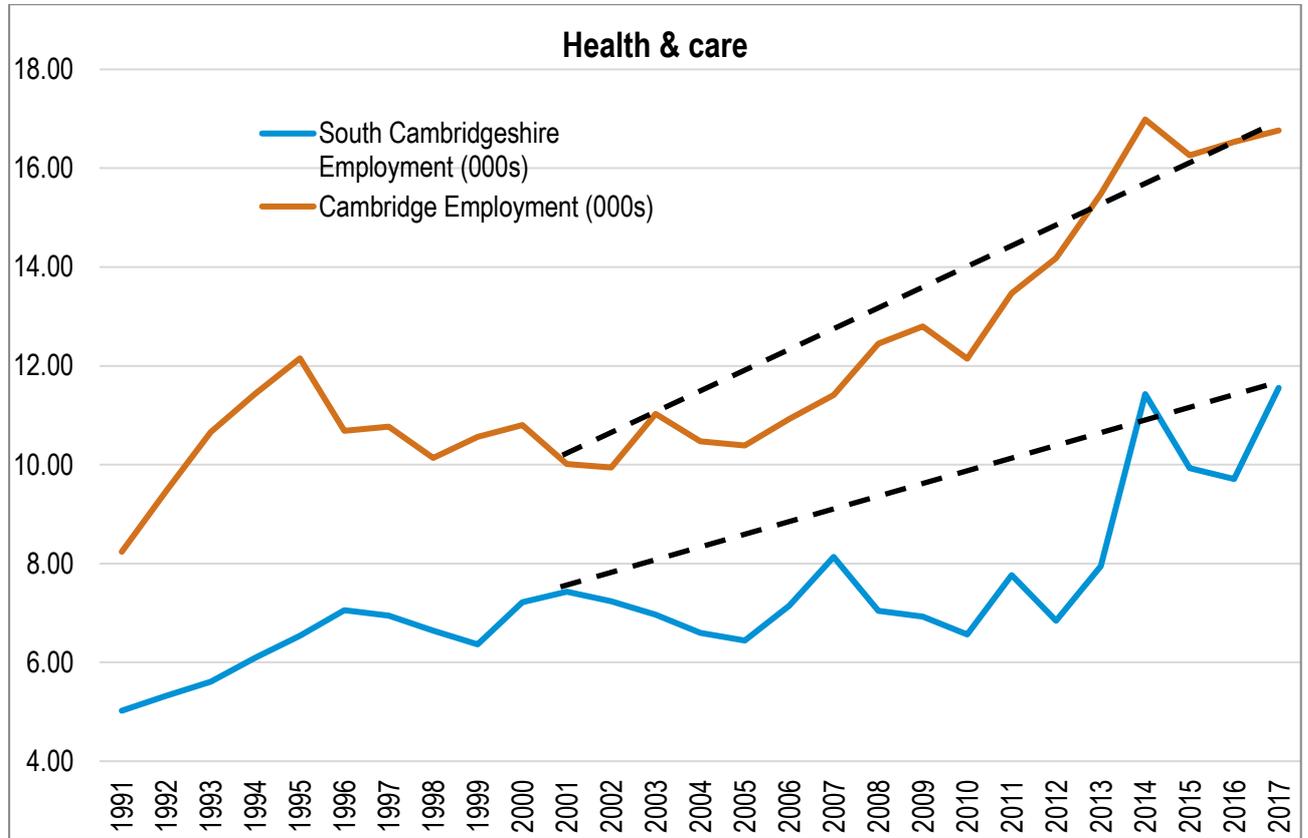
The following charts set out the employment change since 1991 and average rate since 2001



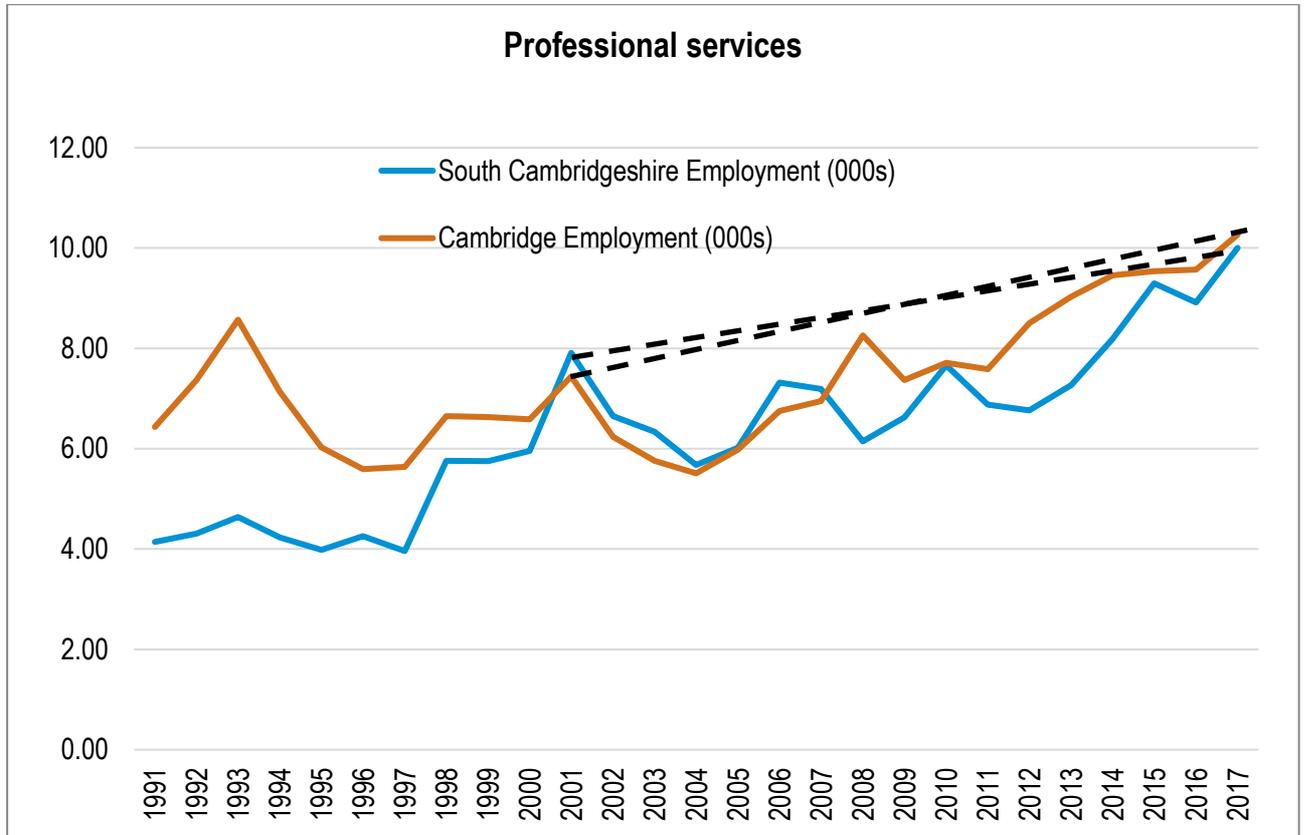
Source: EEFM updated to 2017 BRES data by Cambridge Econometrics



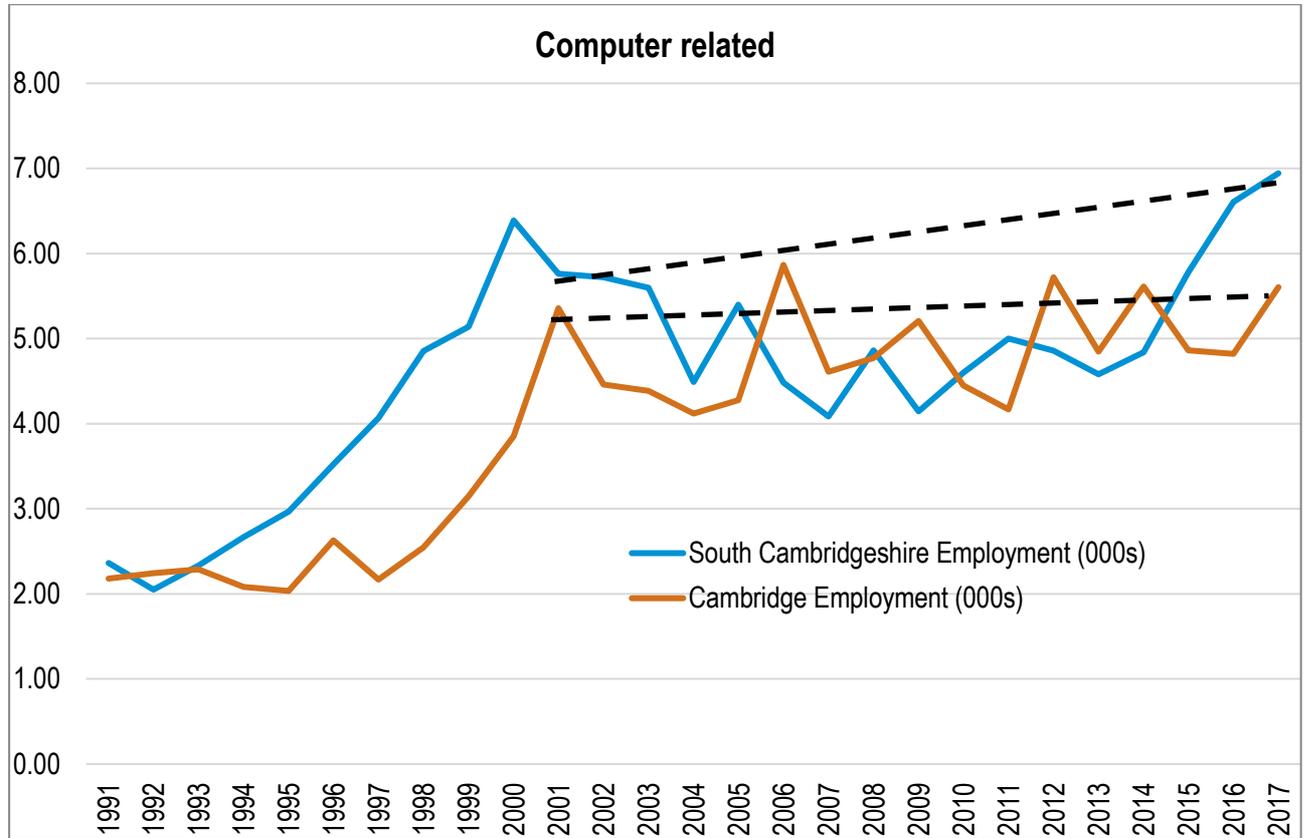
Source: EEFM updated to 2017 BRES data by Cambridge Econometrics



Source: EEFM updated to 2017 BRES data by Cambridge Econometrics



Source: EEFM updated to 2017 BRES data by Cambridge Econometrics



Source: EEFM updated to 2017 BRES data by Cambridge Econometrics

APPENDIX D: Full Time Equivalent conversion

The following tables set out how FTEs required for floorspace density are converted to employment outcomes, derived from BRES 2017 ratios, held consistent going forward 2017-41

Full Time Equivalent conversion (Cambridge City)

Sector	FTE %
Agriculture	96%
Mining & quarrying	100%
Manufacturing - food	94%
Manufacturing - general	92%
Manufacturing - chemicals only	92%
Manufacturing - pharmaceuticals	100%
Manufacturing - metals	98%
Manufacturing - transport equipment	100%
Manufacturing - electronics	97%
Utilities	98%
Waste & remediation	97%
Construction	93%
Wholesale	94%
Retail	72%
Land transport	95%
Water & air transport	92%
Accommodation & food services	73%
Publishing & broadcasting	93%
Telecoms	95%
Computer related activity	94%
Finance	92%
Real estate	88%
Professional services	93%
Research & development	94%
Business services	83%
Employment activities	79%
Public administration	89%
Education	83%
Health & care	86%
Arts & entertainment	80%
Other services	84%

Full Time Equivalent conversion (South Cambridgeshire)

Sector	FTE %
Agriculture	96%
Mining & quarrying	100%
Manufacturing - food	98%
Manufacturing - general	93%
Manufacturing - chemicals only	93%
Manufacturing - pharmaceuticals	97%
Manufacturing - metals	98%
Manufacturing - transport equipment	97%
Manufacturing - electronics	95%
Utilities	100%
Waste & remediation	99%
Construction	93%
Wholesale	94%
Retail	72%
Land transport	95%
Water & air transport	75%
Accommodation & food services	72%
Publishing & broadcasting	92%
Telecoms	92%
Computer related activity	94%
Finance	95%
Real estate	86%
Professional services	90%
Research & development	96%
Business services	84%
Employment activities	84%
Public administration	85%
Education	75%
Health & care	76%
Arts & entertainment	78%
Other services	82%

APPENDIX E: Land Use Classification of Sectors

The following table sets out the assumptions in converting jobs to floorspace requirements.

	B1a	B1b	B1c	B2	B8	Other
Agriculture & fishing						100%
Mining & quarrying						100%
Food manufacturing			20%	80%		0%
General manufacturing			20%	80%		0%
Chemicals excl. pharmaceuticals			20%	80%		0%
Pharmaceuticals			20%	80%		0%
Metals manufacturing			20%	80%		0%
Transport equipment, machinery & equipment, etc			50%	50%		0%
Electronics		25%	25%	50%		0%
Utilities						100%
Waste & remediation				20%		80%
Construction						100%
Wholesale				10%	70%	20%
Retail						100%
Land transport				20%	20%	60%
Water & air transport					20%	80%
Hotels & restaurants						100%
Publishing & broadcasting	50%		40%	5%	5%	0%
Telecoms	80%				20%	0%
Computer related activities	70%	30%				0%
Finance	80%					20%
Real estate	60%					40%
Professional services excl. R&D activities	70%	25%				5%
Research & development	20%	80%				0%
Business services excl. employment activities	40%	20%				40%
Employment activities	14%	6%	6%	6%	8%	60%
Public administration	61%					39%
Education						100%
Health & care						100%
Arts & entertainment						100%
Other services						100%

APPENDIX F: Providers of flexible workspace in Greater Cambridge

Site	Heading	Workspace	Floor-space	Occupier by Industry	Cost PCM
Cambridge Science Park	The Bradfield Centre	Innovation Centre/Business Accelerator/Co-working Hub	40,000	Tech Sector	£150-£450
The Hauser Forum	ideasSpace	Co-working Hub	n/a	University of Cambridge	£80-£250
Madingley Road	Aurora Innovation Centre	Innovation Centre/Co-Working Hub	n/a	Environmental	£250
King Hedges Road	Future Business centre	Innovation Centre/Business incubator. Co-working Hub	41,000	Social and Environmental	£50-£180
Station Road	50-60 Station Road	Co-Working Hub	n/a	n/a	n/a
Station Road	CB1	Business Incubator/Co-Working Hub	n/a	Variety of Businesses	£45-£700
Royston Road, Duxford	The Officers' Mess	Serviced Offices/Co-working Hib	12,000	Variety of Businesses	£45-£4,000
Milton Road	St John's Innovation Centre	Innovation Centre	65,000	IT, Communications. Digital printing, clean tech & electronics	£700
Wellington House, Cambridge Services and Cambourne Business Park	Regus Centres	Serviced Offices/Co-working Hub	54,541	Variety of Firms	£450-£670
Grange Road	Cambridge Space	Co-working hub	n/a	Variety of Businesses	£60-£195
Mill Lane	Makespace	Co-working hub	n/a	Manufacturing and engineering	£40
Chesterton Road	Cambridge Incubator	Business Incubator/Business	n/a	Artificial Intelligence and machine learning	£99-£349

		Accelerator/Co-working Hib			
Cherry Hinton	Cambridge Maker Space	Business Incubator/Business Accelerator/Co-Working Hub	n/a	Variety of Businesses	n/a
Ely Road	Milton Hall	Serviced Offices	n/a	Variety of Businesses	£2,200
Sheraton House, Castle Park	Citibase Cambridge	Serviced Offices	10,000	Variety of Businesses	£350-£450 per day
Cambridge Innovation Park, Denny End Road	Incubyte	Business Incubator/Co-working hub	3,000	Technology sectors	£125-£500
Cambridge Innovation Park, Denny End Road	Cambridge Innovation Park	Business Incubator/ Serviced Officers	75,000	Variety of businesses	n/a

Source: South Cambridgeshire District Council

APPENDIX G: NPPF and PPG requirements

This document in part responds to Paragraph 26 of the PPG (Reference ID: 2a-026-20190220) which requires local authorities to assess:

Reference	Report Section
the best fit functional economic market area	Chapter 4 (see Cambridgeshire and Peterborough Authorities' Statutory Governance Review)
the existing stock of land for employment uses within the area	Chapter 2 & 4
the recent pattern of employment land supply and loss – for example based on extant planning permissions and planning applications (or losses to permitted development)	Chapter 4 & 6
evidence of market demand (including the locational and premises requirements of particular types of business) – sourced from local data and market intelligence, such as recent surveys of business needs, discussions with developers and property agents and engagement with business and economic forums	Chapter 2 & 3
wider market signals relating to economic growth, diversification and innovation; and	Chapter 3 & 5
any evidence of market failure – such as physical or ownership constraints that prevent the employment site being used effectively.	Chapter 2 & 4

Paragraph 27 of the PPG (2a-027-20190220) also requires local authorities to develop an idea of future needs based on a range of data which is current and robust, such as:

Reference	Report Section
sectoral and employment forecasts and projections which take account of likely changes in skills needed (labour demand)	Chapter 5
demographically derived assessments of current and future local labour supply (labour supply techniques)	Chapter 6
analysis based on the past take-up of employment land and property and/or future property market requirements	Chapter 6
consultation with relevant organisations, studies of business trends, an understanding of innovative and changing business models, particularly those which make use of online platforms to respond to consumer demand and monitoring of business, economic and employment statistics.	Chapter 3

Paragraphs 016, 017, 018, 019, 020, 021 and 022 PPG (Reference ID: 3-016-20190722 through to Reference ID: 3-022-20190722) provide guidance on how local authorities should assess locations for development. In particular, this includes the suitability, availability and achievability of sites. This is set out in part 2 of the report (site assessments) and summarised in chapter 4.

APPENDIX H: Summary of Land Availability in Greater Cambridge

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
1	1 & 7 - 11 Hills Road, Cambridge	1.4	Fully developed employment site	-	-	-	-	-	The site is fully developed, and the focus should be on maintaining existing floorspace. It falls in the Cambridge Local Plan 2018 Hills Road Opportunity Area (Policy 25) and is allocated as site E5. There may be long-term intensification opportunities through increased density.	Consider removing allocation given level of development already on site.
2	379 - 381 Milton Road, Cambridge	0.53	Fully developed employment site	-	-	-	-	-	The site is identified for mixed use in the Cambridge Local Plan 2018 (Site M1). This site is proposed to be included within the North East Cambridge AAP in the July 2020 draft plan. It is currently a low density active employment site. Given its location mixed-use development may be appropriate and should consider intensification of employment floorspace.	Retain allocation.
3	82 - 90 Hills Road & 57 - 63 Bateman Street, Cambridge	0.5	Fully developed employment site	-	-	-	-	-	This is a fully developed, active employment site providing flexible floorspace. It falls in the Cambridge Local Plan 2018 Hills Road Opportunity Area (Policy 25) and is allocated as site M5. Any intensification would be through renewal of existing buildings.	Consider removing allocation given level of development already on site.
4	Addenbrooke's Hospital and Biomedical Campus, Cambridge / South Cambridgeshire	80.0	Developed employment site, with vacant allocated land	-	30,685 sqm approx (8.9 ha)	-	105,517 sqm (8.0 ha.)	136,202 sqm (16.9ha.)	The site is identified as an area of Major Change (Policy 17). Phase 2 has permission for over 100,000 sqm of development. Following the completion of phase 2 development, there is around 8.9 Ha of greenfield land on the southern boundary allocated in the South Cambridgeshire Local Plan 2018 for employment development as an extension to the Campus.	Retain allocation for additional phase (South Cambridgeshire).
5	Cambridge Technopark, Newmarket Road, Cambridge	1.0	Fully developed employment site	-	-	-	-	-	The site is fully developed with limited intensification opportunities.	Consider employment designation.
6	Cambridge University Press, Cambridge	11.1	Fully developed employment site	-	-	-	-	-	This is a well-established site with research and office floorspace. There may be long term opportunities to intensify the functional printing element and associated parking on the southern boundary.	Retain via existing policy framework or a possible employment designation.
7	Cheddars Lane, Cambridge	1.9	Fully developed employment site	-	-	-700 sqm (0.4 ha)	-	-700 sqm (0.4 ha)	There is no vacant land for development, yet the stock is in part dated. Current residential permissions granted for loss of 700 sqm B Class uses.	Mixed use development is appropriate given the residential location and stock quality.

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
8	Clifton Road Area, Cambridge	5	Fully developed employment site	-	-	-21,000 sqm (-5 ha)	9,192 sqm (1.35 ha)	-11,808 sqm (-3.65 ha)	The site is an Area of Major Change. Cambridge Local Plan 2018 Policy 21 / Site M2 details capacity for c. 2 Ha of B1(a) and B1(b) and up to 550 dwellings. Existing industrial, office and leisure uses will be lost to enable residential development. Planning permission has not yet been sought.	Retain allocation, seek to maximise B1 employment floorspace given city centre location and requirements for office space. The existing Clifton Road Industrial Estate continues to perform well.
9	Beadle Industrial Estate, Ditton Walk, Cambridge	1.5	Developed employment site	-	-	-	-	-	The site is a Protected Industrial Estate in the Cambridge Local Plan 2018. There is 0.6 Ha of brownfield land on the eastern boundary which is allocated for housing as site R5 in Local Plan 2018.	Maintain policy protection for existing employment floorspace.
10	Henley Road, Cambridge	18.4	Fully developed employment site	-	-	-	-	-	The site is located in the wider Newmarket Road employment land corridor providing bulky good retail, trade counter and local light industrial floorspace. Part of the site in the north west falls in the Policy 23 Eastern Gate Opportunity Area.	B Class uses outside the Opportunity Area should be retained through the existing policy framework. An employment designation could be considered to protect the industrial activities.
11	Marshall of Cambridge	364.0 (Operational Airfield) of which c16 ha employment north of A1303 (wing)	Airfield and related operations (south A1303), fully developed employment site (north A1303).	-	-	-36,000 sqm (-10.2 ha) north of A1303 (wing)	1,975 sqm (0.5 ha) north of A1303 (wing)	-34,025 sqm (9.7 ha), north of A1303 (wing)	This area is subject to Cambridge East Area Plan and the amount of developable land is dependent on the relocation of Cambridge Airport. The airport site was safeguarded for development in the Cambridge and South Cambridgeshire 2018 local plans should it become available. Future airport development is anticipated to be residential led with an element of employment. This has the potential to form an employment cluster of high and lower value industries, potentially including opportunities for lost light industrial floorspace from inner city employment areas and alongside office / R&D. The permitted Wing residential development north of the airport site (north of A1303) includes provision for 1600 sqm of employment space in the Park Pavilion and opportunity for further B1 uses in the flexible mixed use units following redevelopment of existing industrial area.	Seek to ensure the inclusion of a range of employment floorspace through any future redevelopment of the airport, for higher density and lower density uses..
12	Mercers Row Industrial Estate (including Swanns Road), Cambridge	6.0	Fully developed employment site	-	-	-	-	-	The site is a Protected Industrial Estate in the Cambridge Local Plan 2018 serving the needs of the local market. Intensification opportunities are limited.	Maintain policy protection for existing employment floorspace.

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
13	North of Coldham's Lane, Cambridge	5.0	Fully developed employment site	-	-	-	-	-	The site is active and fully developed. Part of the site is subject to Cambridge Local Plan 2018 Policy 41 Protected Business Space. Any intensification opportunities may be presented through redevelopment of existing plots.	Maintain policy protection for existing employment floorspace.
14	South of Coldham's Lane, Cambridge	67.0	Developed employment site, with vacant land	7.9 ha	-	-	-	7.9 ha	The site is a Cambridge Local Plan 2018 Protected Business Space (Policy 41) and an Area of Major Change under Policy 16. The undeveloped part to the north east could accommodate employment development in the short to medium term and could be a mix of employment uses.	Provide for light industrial and potentially a wider mix of employment uses that may be displaced from other city employment sites. Retain designation.
15	Station Road, Cambridge	4.0	Partially developed employment site	-	-	-12,346 sqm (-0.7 ha)	27,038 sqm (0.7 ha)	14,692 sqm	The site is a Cambridge Local Plan 2018 Opportunity Area (Policy 25) and Area of Major Change (Policy 21). The site is well established, providing quality office floorspace and should be retained through the existing policy framework.	Retain existing policy designation given site is not yet fully developed.
16	Barnwell Business Park, Cambridge	0.6	Fully developed employment site	-	-	-	-	-	The site is a Cambridge Local Plan 2018 Protected Business Space (Policy 41). It is a fully developed and active site with limited opportunities for intensification. Any form of intensification would require redevelopment of the existing structures for increased density.	Maintain policy protection for existing employment floorspace.
17	The Quorum, Barnwell Road, Cambridge	1.0	Fully developed employment site	-	-	-	-	-	The site benefits from access to Cambridge city centre and regional markets. It is functioning as an office floorspace site and there are no opportunities for intensification.	This site should be retained as an employment site through the existing policy framework.
18	Kings Hedges Road, Kirkwood Road/Kilmaine Estate, Cambridge	2.7	Fully developed employment site	-	-	-	-	-	The site is positioned south of Cambridge Science Park providing light industrial and mixed employment. It benefits from proximity to strategic roads and public transport connecting to Cambridge city centre. Opportunities for growth are limited.	Retain for local industrial floorspace through the existing policy framework.
19	Ronald Rolph Court, Ditton Walk, Cambridge	0.6	Fully developed employment site	-	-	-	-	-	This is a protected employment site under Cambridge Local Plan 2018 Policy 41. The site performs well as a local population serving estate, meeting the needs of the local market. Site is not appropriately located to accommodate intensification.	Maintain policy protection for existing employment floorspace.
20	Broad Lane Industrial Estate, Cottenham	2.3	Fully developed employment site	-	-	-	-	-	The site is fully developed and functions as a local light industrial estate meeting the needs of the local population.	The site should be retained through the existing policy framework..

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
21	Brookfields Business Estate, Cottenham	3.7	Developed employment site, with vacant land	-	-	-	-	-	The site is recognised as an Established Employment Area (Policy E/15) in the South Cambridgeshire Local Plan 2018, and caters for the accommodation needs of the local light industrial needs. Around 0.6 Ha of land is allocated for Minerals and Waste and could come forward in the medium to long term if the County Council deem it is not required. The Proposed submission Minerals and Waste Plan 2019 no longer allocates it. This would likely attract demand for local light industrial floorspace.	Potential allocation of additional 0.6 ha land outside current employment site to be considered.
22	Buckingway Business Park, Swavesey	15.0	Developed employment site, with vacant land	-	-	-	-	-	The site is an Established Employment Area (Policy E/15) in the South Cambridgeshire Local Plan 2018. The site has experienced recent development delivering a mix of new office and industrial floorspace.	The site should be retained as an established employment area.
23	Cambridge Innovation Park, Waterbeach	8.2	Developed employment site, with vacant land	1.5	-	-	-	7,500 sqm (est.) (1.5 ha)	The site is located south of the area covered by the Waterbeach New Town SPD. It provides office based start-up and flexible floorspace. There is around 1.5 Ha of greenfield land on the site.	Key employment area, consider designation.
24	Cambridge Research Park, Landbeach	29.0	Fully developed employment site, with vacant land	7.2 ha	-	-	1.4 ha	7.2 ha	This is a distinct employment site accommodating Bioscience, Professional Services and Information and Technology sectors. The site is recognised as an Established Employment Area (Policy E/15) in the South Cambridgeshire Local Plan 2018. There is 7.2 Ha of land available for new office and research and development floorspace, of which 1.4 ha on plot Y has planning permission. The remainder of the land had outline planning permission, which has now lapsed. A new outline planning application is being considered (for the remainder of the land and the extant land in plot Y) for up to 28,000 sqm.	Maintain designation as established employment area.
25	Cave Industrial Estate Fen Road Cambridge	9.8	Fully developed employment site	-	-	-	-	-	The site contains local light industrial units in need of investment. It presents long-term opportunities for mixed use development with either office, laboratory or industrial employment floorspace, however accessibility is a significant challenge and any development is reliant on investment in access improvements.	Consider for long term release subject to improved accessibility.
26	Vision Park, Histon	12.0	Developed employment site, with vacant land	-	-	-265 sqm	150 sqm	115 sqm	The site is fully developed and active. It contains a mix of office floorspace at Vision Park and industrial uses along Chivers Way, benefiting from the busway. Station Road Garage to the	Important employment area, consider designation.

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
									south east received permission for housing in in September 2019 including 4 live work units delivering 150 sqm B1a, with loss of 265 sqm B1c from the garage, which is near to Vision Park.	
27	Convent Drive, Waterbeach	8.3	Fully developed employment site	-	-	-	-	-	The site is recognised as an Established Employment Area (Policy E/15) in the South Cambridgeshire Local Plan 2018. It is an active industrial employment site meeting the needs of local and strategic industrial markets. Planning has been received for the delivery of 552 sqm (0.1 Ha) industrial floorspace. It is fully developed, and future intensification requires redevelopment of existing buildings.	Retain as an established employment area.
28	North of Hattons Road, Longstanton	6.7	Greenfield	-	6.7 ha	-		6.7 ha	This greenfield site is allocated employment land (Policy E/4). Permission was granted in 2004, now lapsed, nothing has been implemented. The site has the potential to attract industrial floorspace in the medium to long-term.	Given the relative isolation and length of inactivity consideration should be given to removing the allocation.
29	Northstowe	7.05	Greenfield and Brownfield (former barracks)	-	0.95 ha	-	6.1 ha	7.05ha	<p>The New Town of Northstowe will eventually include up to 10,000 dwellings and a range of other uses. The site is subject to the Northstowe Area Action Plan and South Cambridgeshire Local Plan 2018 Policy NS/8 Northstowe Extension. Phase 1 has outline planning permission including mixed use employment land. Phase 2 has outline planning permission including the town centre, and mixed B1 uses. Outline planning applications for Phase 3 are being considered which include further employment provision. No employment floorspace has yet been completed within the new settlement which is in early phases of development. Demand is anticipated to be long term.</p> <p>The Economic Development Strategy submitted with the phase 3 planning applications suggests that phase 1 will provide 14,560 sqm on 3.7 ha of B uses employment (B1, B2, B8 and pumping station), phase 2 will provide 16,200 sqm on 2.4 ha of B uses employment (B1, B1a, B1c), phase 3a will provide 5,882 sqm on 0.9 ha of B uses (B1, B1c), and phase 3b will provide 330 sqm on 0.05 ha of B uses employment (office type uses).</p>	Support a flexible approach to employment provision within the new town, supporting potential for development in the longer term to meet demand.

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
30	Winship Estate and Cambridge Road, Milton	7.0	Fully developed employment site	-	-	-	-	-	It is strategically located at Junction 33 on A14 and located north of North East Cambridge Area Action Plan. The site is completely developed, however, some of the structures are quite dated. Opportunities for growth could be achieved through intensification. The site could accommodate relocation of industrial uses displaced from other inner-city sites.	Consider designating as an employment area to support intensification.
31	Oakington Business Park, Dry Drayton Road, Oakington	1.3	Fully developed employment site	-	-	-	-	-	The site hosts new office floorspace with occupiers that specialise in the Information Technology sector. There are limited intensification options.	The site should be retained for employment through the existing policy framework.
32	Dickenson Industrial Estate (north of Cambridge Research Park)	8.1	Fully developed employment site	-	-	-	-	-	This is an Established Employment Area (Policy E/15) in the South Cambridgeshire Local Plan 2018. It is a traditional industrial site meeting the land requirements of occupiers. There are limited opportunities for intensification.	Retain as an established employment area - the hard standing land on the western boundary may be explored for future growth.
33	Waterbeach New Town	13.8	Greenfield and Brownfield	-	24,800 sqm (8.8 ha assumed from pending application)	-	15,000 sqm (5.0 ha)	39,800 sqm (13.8 ha, assumed land area)	New Town allocated in the South Cambridgeshire Local Plan 2018. Policy is guided by Waterbeach New Town SPD. It is located within access to the strategic road network (A10). Employment development will likely be long term benefitting from existing local business space agglomeration - Cambridge Research Park is located to the west and Cambridge Innovation Park to the south. The site is coming forward through applications from two landownerships. Current planning applications propose: <ul style="list-style-type: none"> • Up to 15,000sqm of business space (now granted permission) • Up to 24,800m² B use (comprising 22,400 B1a office, and 2,400 B1c/B8) 	Support a flexible approach to employment provision within the new town, supporting potential for development in the longer term to meet demand.
34	Norman Way Industrial Estate, Over	6.2	Developed employment site, with vacant land	-	1.7 ha	-	-	1.7 ha	This is identified as an Established Employment site (Policy E/15) in the South Cambridgeshire Local Plan 2018. There is 1.7 Ha of greenfield land on the southern boundary allocated in the Local Plan 2018 which would likely absorb medium to long term demand for light industrial floorspace.	Maintain allocation and retain as established employment area.
35	Cambridge Business Park, Milton Road, Cambridge	8.7	Fully developed employment site	-	-	-	-	-	This developed office site benefits from good access to the city and the North East Cambridge Area Action Plan designation. Future opportunities for intensification are anticipated,	Seek intensification through the AAP for employment uses.

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
									to be established in the North East Cambridge Area Action Plan.	
36	Cowley Road Estate	10.3	Developed employment site, with vacant land	-	-	-	-	-	Industrial site in a desirable gateway location following North Cambridge Station reinstatement, captured in the North East Cambridge AAP area. Major intensification is anticipated however re-provision for a number of existing activities should be included whilst other non sensitive activities can be relocated.	Seek intensification through the AAP retaining location sensitive functional floorspace.
37	Merlin Place, Milton Road, Cambridge	0.7	Fully developed employment site	-	-	-	-	-	Office site, fully developed. Opportunities for future intensification would have to be comprehensively considered within the North East Cambridge Area Action Plan.	Seek intensification through the AAP for employment uses.
38	Nuffield Road Estate, Cambridge	6.0	Fully developed employment site	-	-	-	-	-	Large industrial site with good road / busway access forming part of the North East Cambridge Area Action Plan. It is a well performing site with limited vacancy but major intensification could be considered through increased density to manage land use efficiently whilst retaining effective functional industrial floorspace.	Seek intensification through the AAP retaining location sensitive functional floorspace.
39	St Johns Innovation Park, Cowley Road, Cambridge	10.0	Fully developed employment site	-	-	-	2,687 sqm (0.37 ha)	2,687 sqm (0.37 ha)	The site forms a key research and development area and is fully developed. In the medium term, development opportunities may be achieved through upgrading or intensification of existing building stock, parking and open spaces. Future development will be informed by the North East Cambridge Area Action Plan. Existing commitments include 2,687 sqm on 0.37 ha.	Seek intensification through the AAP for employment uses.
40	Cambridge Science Park	61.2	Fully developed employment site	-	-	-338 sqm (-1.71 ha)	46,419 sqm (7.08 ha est.)	46,081 sqm (5.37 ha est.)	This is a key office and R&D employment site for the city. It forms part of the North East Cambridge Area Action Plan area. There is future floorspace in the development pipeline providing new laboratory and office floorspace amounting to 46,081 sqm (net) with planning permission as of March 2019, and further capacity for intensification and renewal. A framework for development and intensification will be established in the North East Cambridge Area Action Plan.	Seek intensification through the AAP for employment uses
41	Capital Park, Fulbourn	4.0	Developed employment site	-	-	-	-	-	Western edge of city office and R&D park with good road access. Intensification opportunities are limited on the site. There is potential for intensification of smaller sites and / or at grade parking.	Retain through existing policies, support intensification where feasible.

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
42	Fielding Industrial Estate, Wilbraham Road, Fulbourn	2.3	Fully developed employment site	-	-	-	-	-	More isolated industrial site. Fully developed and there are no opportunities for future intensification. The site is not specifically identified as an employment site in the Local Plan 2018, however it is an active site which meets the needs of the local market.	Retain through existing employment policy framework .
43	Fulbourn Road West (Peterhouse Technology Park), Cambridge	8.0	Developed employment site, with vacant land	-	1.6 ha	-	-	1.6 ha	Large office/R&D site has a strong tech focus providing a mix of dry laboratory and office floorspace. The western part of the site was allocated for development in the Cambridge Local Plan 2018 (Site GB3 & GB4). Development is underway (2019). Following the development of these plots, there will be 1.6 ha of land remaining.	Retain allocation.
44	Land east of Peterhouse Technology Park, Cambridge	6.9	Greenfield	-	6.9 ha	-	-	6.9 ha	This greenfield land is an allocated employment site in the South Cambridgeshire Local Plan 2018 (Policy E/3). The site is located east of Peterhouse Technology Park. The entire site is anticipated to be developed in the medium term to accommodate demand for laboratory and office floorspace.	Retain allocation.
45	Babraham Institute, Babraham	c27	Fully developed employment site	-	-	-	-	-	The site is located in the Cambridge Green Belt, and is not subject to a specific policy related to employment, however it is a high value institute accommodating a range of start-up and scale-up opportunities with a distinct focus on bioscience. Planning permission was granted in 2014 for 10,000 sqm of additional floorspace on 8.4 ha to the north west of the site, which has now been constructed. Intensification opportunities are limited given greenbelt sensitivities.	The site should be considered for employment designation.
46	Dales Manor Business Park, Sawston	15.4	Fully developed employment site	-	-	-	5,886 sqm (approx. 1.38 ha)	-	A light industrial site allocated for residential (200 units), light industrial and office (Policy H/1a) in the South Cambridgeshire Local Plan 2018. It is currently an established industrial site primarily meeting the needs of the industrial and distribution market. There is a mixed planning history and demand appears to be maintained. On the north-western part of the site a detailed planning permission for 27 units for B1c, B2 and B8 uses is being implemented, therefore making this area of the site unavailable for the proposed residential use as anticipated by the allocation. Phase 1 of this development has been completed, however there is still 5,886 sqm outstanding. If the remainder of the site is	Given the active commercial interest in the site and recent completions, the residential component is unlikely to be brought forward in full if not in entirety. A removal of the mixed use allocation should be considered and employment otherwise retained under the wider existing policy framework.

No.	Site	Site Area (Ha)	Land Classification	Vacant (existing) (Ha)	Vacant (allocated) (Ha)	Permitted Loss (Ha)	Permitted Gain (Ha)	Total Supply (Ha)	Summary	Policy Recommendation
									developed/redeveloped for residential, light industrial and office, as per the allocation, a further 3.7 ha (net) of business land could be lost.	
47	Button End Industrial Estate, Harston	1.6	Fully developed employment site	-	-	-	-	-	The site is not subject to a specific planning policy designation in the South Cambridgeshire Local Plan 2018; however, it is an active local employment site meeting the needs of businesses that seek small scale industrial floorspace. The site is fully developed and there are no intensification opportunities. The site should be retained.	Retain through existing employment policy framework.
48	Daleshead Food, Linton	4.0	Fully developed employment site	-	-	-	-	-	This site is identified as an Established Employment Area in the South Cambridgeshire Local Plan 2018 (Policy E/15). The industrial floorspace on the site is active. It benefits from access to the strategic road network.	Retain as established employment area.
49	Eternit site, Meldreth	14.7	Fully developed employment site	-	-	-	-	-	This site is identified as an Established Employment Area in the South Cambridgeshire Local Plan 2018 (Policy E/15). The site meets the needs of the current occupier who require proximity to the road network to access the regional market.	Retain as established employment area.
50	Former Bayer Crop Science, Hauxton	8.7	Developed employment site, with vacant land	0.4 ha	-	0	4,000 sqm (0.4 ha)	4,000 sqm (0.4 ha)	The site is a former employment site subject to a residential-led mixed use development allocation (Policy H/2 of the South Cambridgeshire Local Plan 2018). The residential component has come forward, however the identified capacity for 4,000 sqm of B1 floorspace has not. This is an appropriate location for B1 floorspace and will likely experience demand given proximity to the strategic network and nearby employment.	Retain allocation.
51	Former Spicers Site, Sawston	20.2	Developed employment site, with vacant land	7.3 ha	-	-	-	7.3 ha	This site is identified as an Established Employment Area in the South Cambridgeshire Local Plan 2018 (Policy E/15). Planning permission for the development of commercial floorspace including 50,445 sqm B1b was granted in August 2020, and there is potential for future phases. The site is located outside of Cambridge centre and has the potential to create a cluster for future employment floorspace.	Retain as established employment area.

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52	Wellcome Trust Genome Campus, Hinxton	27.9 ha	Fully developed employment site	-	-	-	55.0 ³³ ha	55.0 ha	<p>Major bioscience park, A11 access, part of local cluster, creating a well-established science cluster, specialising in genomics and computational biology with global links. The existing part of the site is identified as an Established Employment Area in the South Cambridgeshire Local Plan 2018 (Policy E/15). There is land within this existing site which has not yet been developed – an outline planning permission for phases 2 & 3 lapsed in December 2019 without the final grow-on unit being brought forward - anticipated to be 3000 sqm of B1b on 2.86 ha.</p> <p>South Cambridgeshire has resolved to grant permission for a mixed use application for 150,000 sqm of employment floorspace and this will likely respond to the short to medium term demand for laboratory and associated office floorspace. The proposal includes the vacant land that previously had outline planning permission.</p>	Site with anticipated significant expansion supporting economic growth in a specialist sector. The delivery of the proposals should be supported through the existing policy framework and expansion of the Established Employment Area would be suitable as the development progresses.
53	Granta Park, Great Abington	47.0	Employment site with undeveloped phases	11.3	-	-	32,490 sqm (11.3 ha)	32,490 sqm (11.3 ha)	Major site, A11 access, well-established strategic employment site meeting the floorspace needs of the bioscience sector close to Babraham with a number of recently completed developments in B1b. A further outline unimplemented permission exists for 32,490 sqm for phase 2. The site should continue to be protected.	Retain and consider protection through designation.
54	Grip Industrial Estate, Linton	2.9	Fully developed employment site	-	-	-	-	-	Local industrial site, local access, fully developed with no opportunities for intensification. The site is active and provides floorspace to meet the needs of the local industrial market.	The site should be retained as employment land through the existing policy framework.
55	Land at Hinxton Road, South of Duxford	23.3	Developed employment site, with vacant land	-	-	-	-	-	This is identified as an Established Employment Area in the South Cambridgeshire Local Plan 2018 (Policy E/15). The site is fully active and specialises high tech engineering and manufacturing. There is around 2.0ha of undeveloped land on the southern boundary of the site, part of this is a former protected rail head. Further development has historically been permitted and lapsed, suggesting some	Site should be retained as an established employment area. Around 2.0 ha of land could be included for future development and intensification through an allocation to encourage development.

³³ Resolution to grant planning permission given by planning committee in October 2019 for the expansion of the campus for a mixed use development comprising of up to 150,000 sqm of mixed B Class floorspace (around 50 Ha applying a plot ratio of 0.3), 1,500 dwellings, some retail and a hotel. Once implemented, the development will expand the site boundary.

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									intensification opportunities. The site should be retained for employment uses.	
56	Sagentia Research Park, Harston Mill	5.5	Fully developed employment site	-	-	-	-	-	The employment site is located in the Green Belt and is not specifically designated by other policies in the South Cambridgeshire Local Plan 2018. A10 access. The site hosts a niche focus on medical science and technological sectors.	This site should be retained as an employment site through the existing policy framework.
57	Saxon Way, Melbourn	17.0	Developed employment site, with vacant land	-	-	-	-	-	This is an active employment site hosting a local industrial cluster and a large-scale building used for office use. There is an intensification opportunity for new office or laboratory floorspace surrounding the existing office building to the west of the site. Intensification of this site is likely to be long-term and dependent on landowner intentions. Local access is limited before reaching the A10.	Potential to intensify some of the car park / campus area if desirable which can be considered through the application route. The site can be protected through the existing policy framework although may benefit from a designation given its local importance.
58	Melbourn Science Park, Melbourn	6.1	Developed employment site, with vacant land	-	-	-	10,974 sqm (9.3 ha)	10,974 sqm (9.3 ha)	This is a well-established employment site providing laboratory and office floorspace for occupiers specialising in science industries. Opportunities for intensification are limited. In 2019 planning permission was granted for land North of Melbourn Science Park for the expansion of the TPP site	This site should be retained as an employment site through the existing policy framework.
59	West of London Road, Pampisford	8.0	Developed employment site, with vacant land		-	-8,486 sqm (-3.3 ha est.)	19,833 sqm (3.3 ha est)	11,347 sqm	This is an active employment site meeting demand for industrial and commercial uses. Through one hybrid planning application the centre of the site has received planning for the redevelopment of Sawston Trade Park and the vacant land at the rear of the site (western fringe) has received planning for a new business park (Use Class B1). Construction has commenced and development will result in a loss of industrial floorspace. The future floorspace will respond to the short to medium term demand for office and research floorspace.	This site should be retained as an employment site through the existing policy framework and the allocation is no longer required.
60	Cambridge Road, Linton	4.0	Developed employment site, with vacant land	-	-	-	-	-	Mixed industrial units at the site subject to Policy H/6 South of A1307 Linton. This policy protects the site from windfall residential development and protects the existing properties.	There is around 0.5 Ha of undeveloped land on the southern boundary that may be considered for development in the medium to long term through an allocation, subject to constraints.
61	Bourn Airfield, Bourn	9.2	Brownfield	-	1,500 sqm (approx. 1.1 ha)	-	26,037 sqm (8.1 ha est.)	27,537 sqm (9.2 ha est.)	The site was allocated in the South Cambridgeshire Local Plan 2018 (Policy SS/7) for a new settlement. Subsequently the Bourn	Given the strategic location of the site, employment uses

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									Airfield SPD was adopted. Planning permission was granted in 2013 for 17,723 sqm of B2 employment floorspace to replace existing employment uses. After the allocation of this area as part of the new settlement, Diageo Pension Fund submitted an outline planning application in March 2019 proposing 24,620 sqm of employment floorspace (B1c & B8) instead, which has now been withdrawn. A further hybrid planning application in June 2020 for up to 26,757 sqm of commercial floorspace (B1c, B1b, B8, A3, D1 & D2) and is undetermined at time of writing. It is understood that the extant planning permission will not be implemented and therefore the most recent planning application has been used to anticipate the likely floorspace that will be provided on the industrial area within this new village ³⁴ . Further employment uses are proposed by Countryside properties in their application for the main part of the airfield site, 1,500 sqm GEA of employment uses comprising offices, research and development and light industry only (Class B1a, b and c uses).	should be provided in accordance with the SPD.
62	Cambourne Business Park, Cambourne	15.4	Developed employment site, with vacant land	9.5 (including non B class elements)	4,400 sqm (1.5 ha est.)	-	4,978 sqm (1.5 ha est.)	9,378 sqm (3.0 ha est.)	<p>This is identified as an Established Employment Area in the South Cambridgeshire Local Plan 2018 (Policy E/15). hosting a collection of modern office buildings in a purpose-built campus with a range of professional services occupiers and flexible floorspace.</p> <p>The Cambridge Compass Enterprise Zone includes part of the Cambourne Business Park site. The vacant land south of the Business Park Road is anticipated to deliver a mixed use development, incorporating around 240 dwellings and 4,400 sqm B1.</p> <p>In addition, north of the business park road, Building 4010 has planning permission for 4,978 sqm B1.</p>	Retain the established employment area - the strategic position of the site in the Enterprise Zone creates opportunities to provide a mix of floorspace types and respond to the demand for start-up office and potentially incubator floorspace.
63	Cambourne West	6.3 ha	Greenfield	-	-	-	6.3 ha	6.3 ha	This is a greenfield mixed use site allocated in the South Cambridgeshire Local Plan 2018	Retain allocation – provides a long term pipeline of

³⁴ The submitted planning application does not provide a breakdown between use classes, therefore the floorspace anticipated for the café/restaurant, nursery and gym (use classes A3, D1 & D2) has been estimated as 720 sqm (based on the floorspace for these uses on Granta Park and the size (in hectares) of this proposed development in comparison to the size (in hectares) of Granta Park). The floorspace for B uses is therefore estimated as 26,037 sqm.

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									(Policy SS/8). Outline planning permission for Cambourne West (S/2903/14/OL) was granted on 29 December 2017, for a larger site than allocated in the South Cambridgeshire Local Plan 2018. The development description includes: 'offices/light industry, use class B1 (up to 6.25ha). Employment areas targeted at small to medium sized operators will be provided in two locations: to the north east of the site - extending from the existing area of employment along Sheepfold Lane into the main site, and by Caxton Gibbet to the north west.	employment floorspace along the A428 with planned housing and population growth.
64	Green End Industrial Estate, Gamlingay	4.1	Fully developed employment site		-	-3.1 ha	-	-3.1 ha	This is an active employment site meeting the needs of the local industrial market. The site is subject to South Cambridgeshire Local Plan 2018 Policy H/1f which focuses on mixed-use development. The site received planning permission for 90 dwellings which when implemented, will result in a loss of employment floorspace from 75% of the site. The remaining part of the site should be retained for employment to meet local floorspace needs.	Retain remaining elements of employment floorspace to meet local market needs through the existing policy framework.
65	Horizon Park, Comberton	1.1	Developed employment site, with vacant land	-	-	-	-	-	This is a small-scale employment site specialising in science research. It is currently meeting the needs of the active occupiers.	The site should be retained for employment purposes through the existing policy framework.
66	North West Cambridge (Eddington)	10.0	Greenfield	-	-	-	40,000 sqm (10.0 ha)	40,000 sqm (10.0 ha)	The site is subject to the North West Cambridge Area Action Plan, a joint plan adopted by Cambridge City and South Cambridgeshire District Councils. Part of the site is under construction for a new residential settlement with local retail, student accommodation and university associated floorspace. The developable land will support the expansion of the university by providing education and associated research and commercial floorspace. The planning permission for the development includes 100,000 sqm of research facilities, including up to 40,000 sqm for research institutes and 60,000 sqm private research facilities linked to the University.	Retain allocation, part of academic and commercial expansion of the University.
67	Papworth Business Park, Papworth Everard	8.7	Developed employment site, with vacant land	-	-	-	640 sqm (0.3 ha)	640 sqm (0.3 ha)	Active local industrial site. The land at the northern part of the site is allocated for employment in the South Cambridgeshire Local Plan 2018 (Policy E/5). This has recently been developed. Application permitted in 2018	The site should be retained for employment purposes through the existing policy framework.

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									enabled 640 sqm B1 on a former car park thus facilitating intensification.	
68	Trafalgar Way, Bar Hill	11.5	Fully developed employment site	-	-	-	-	-	This is a local light industrial site meeting the floorspace needs of the local light industrial and distribution market. There will likely remain a need for this site to continue to accommodate local light industrial uses, however there are no intensification opportunities.	The site should be retained for employment purposes through the existing policy framework.
69	Viking Way, Bar Hill	4.4	Fully developed employment site	-	-	-	-	-	The uses on the site contribute to the industrial landscape of Greater Cambridge and the site is strategically positioned near the A14 which provides strong links to the rest of Greater Cambridge and to regional markets. There are no opportunities for intensification.	The site should be retained for future employment purposes through the existing policy framework.
70	West Cambridge	66.0	Developed employment site, with vacant land	-	-	-	17,786 sqm (1.7 ha)	17,786 sqm (1.7 ha)	The site is subject to Cambridge Local Plan 2018 Policy 19 West Cambridge Area of Major Change. Development has recently occurred on the southern boundary of the site as part of a Masterplan accommodating floorspace needs of university departments. There are large amounts of open space on the site. A further application (undecided) has been submitted for major development to facilitate the implementation of the wider masterplan for the University across the site totalling 336,410 sqm including 170,000 sqm B1b commercial and 158,150 educational floorspace.	Major University research and development expansion area supporting commercial R&D, existing policy should be retained given development is ongoing.
71	Station Road, Gamlingay	4.5	Fully developed employment site	-	-	-	-	-	Site is quite detached from the strategic road network making it more appealing to small industrial uses that benefit from access to nearby markets. It is unlikely to experience demand for intensification; however it is an active site that meets the needs of its current occupiers and should be retained. There is an extant permission for an extension to the existing buildings.	Retain for employment through the existing policy framework.

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