



**Report To:** Greater Cambridge City Deal Executive Board

13 October 2016

**Lead Officer:** Graham Hughes, Executive Director of Economy, Transport and Environment, Cambridgeshire County Council

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**A428 Cambourne to Cambridge Better Bus Journeys:  
*Selection of a Catchment Area for detailed scheme development.***

**Purpose**

- 1 Following the 2015 public consultation and subsequent technical appraisal, this report, which is based on the accompanying Option Assessment Report and Strategic Outline Business Case:
  - (a) recommends a Catchment Area (*a shaded area on the map*) and Park & Ride (P&R) location; and
  - (b) seeks authority to develop a 'specific route alignment' (*a line on the map*) within that Catchment Area, using the Transport Appraisal Guidance (TAG) approach described below, together with an associated new P&R site, both for public consultation in Summer 2017.
2. This forms part of the proposed scheme for the provision of better bus journeys between Cambourne and Cambridge in accordance with the Greater Cambridge City Deal vision and the City Deal Agreement.

**Recommendations**

- 3 The Executive Board is asked to:
  - I. Note the accompanying Option Assessment Report, the further background papers containing the Outline Strategic Business Case, and the Map Appendix to this Report;
  - II. Agree – in principle – that a segregated route between Cambourne and Cambridge, with a Park & Ride near the Madingley Mulch roundabout, best meets the strategic objectives of the City Deal and the City Deal Agreement, given the wider economic benefits;
  - III. Instruct Officers to undertake further appraisal on:
    - (a) Possible specific route alignments within Catchment Area 3a, with Catchment Area 3 as an alternative if (but only if) Option 3a proves unviable, noting that both would connect with and potentially through Cambridge West; and

(b) a new Park & Ride (P&R) at location 3 (see Figure 3 below)

all in accordance with the scheme design criteria set out in Paragraph 12 below, and within established environmental and planning policies;

IV. Delegate to the Executive Director of Economy, Transport and Environment,

acting:

- a) with input from the A428/A1303 Local Liaison Forum (LLF); from the Parish Councils and Residents' Associations along Catchment Areas 3a and 3; from interested members of the Assembly; and from interested Councillors from the County, City and District Councils; and:
- b) in consultation with the Chair and Vice Chair of the City Deal Executive Board

the responsibility to:

- (a) identify a specific route alignment(s) within Catchment Area 3a (or, if necessary, Catchment Area 3);
- (b) identify a footprint (area) for a P&R at location 3;
- (c) undertake a public consultation on that specific route alignment and P&R location, planned for May-July 2017; and
- (d) subsequent to that public consultation, provide a report to the Assembly and Executive Board, targeted for November 2017, containing a recommendation and Full Outline Business Case for a specific route alignment and one Park & Ride location; that would then subsequently be developed in detail, and an application made for Statutory Approval in 2018.

#### **Reasons for Recommendation**

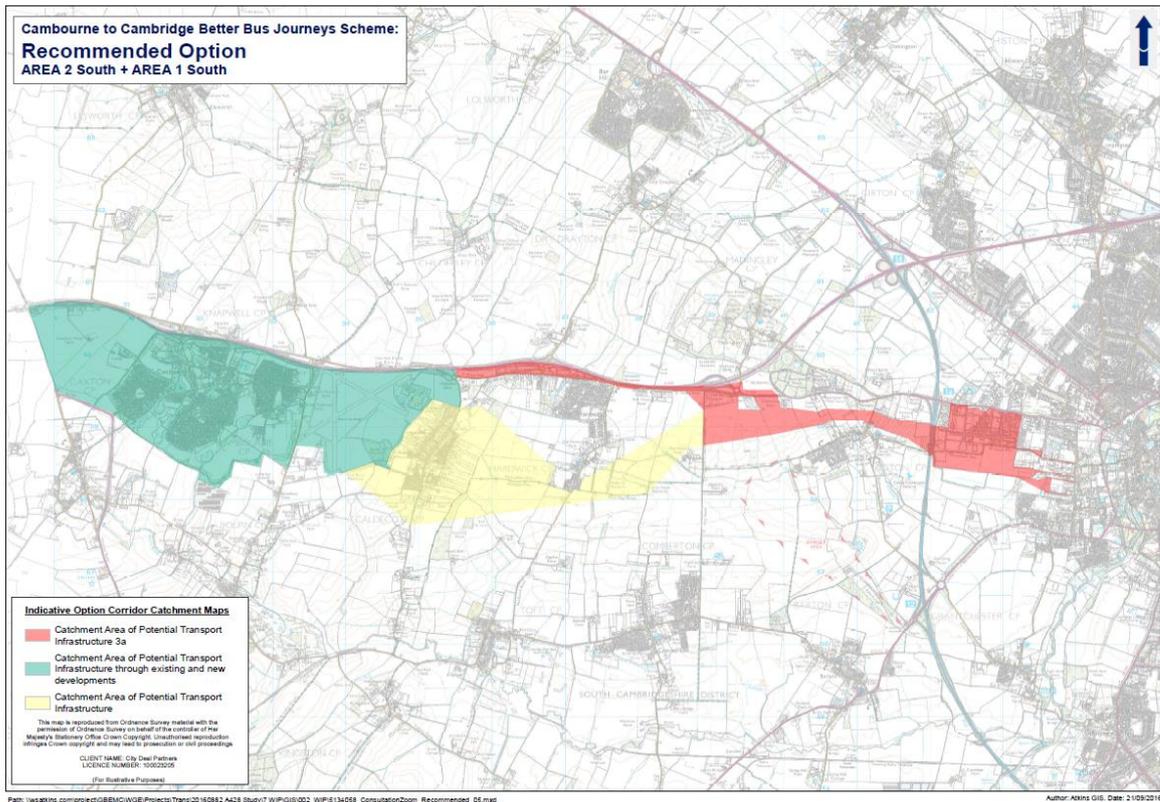
- 4. The views and comments of the October 2015 public consultation and stakeholder engagement have been incorporated into this report. The findings of the public consultation were reported in full to the City Deal Executive Board in March 2016. There was support for public transport and cycling improvements along the Cambourne to Cambridge corridor, balanced by concerns over the potential environmental effects of new offline infrastructure. This report takes on board these concerns which would be addressed within the future technical assessment on specific route alignment.
- 5. Option 3a represents the best strategic fit with the City Deal objectives, as it would address both current congestion issues (particularly between on the A1303 between Madingley Mulch roundabout and the M11 junction) and the requirement for future growth. It would create significant new capacity for bus services from the west and new areas of development in Cambourne and Bourn into Cambridge and areas of employment opportunity supporting the long term economic growth on this corridor. In total, including St Neots 8,800 new homes are planned along the A428, plus a further 5,800 in North West Cambridge together with substantial job growth in West Cambridge and the Cambourne Area. Option 3a offers a resilient solution for this long term growth.

6. Option 3a offers the widest economic benefits for the Greater Cambridge area with presently estimated wider economic benefits of approximately £680m over 30 years.
7. Option 3a involves the provision of a new high quality segregated transport infrastructure with the capacity to underpin economic growth as set out in the Greater Cambridge City Deal vision and to support the submitted Local Plans.
8. Option 3 (which represents the highest level of segregation) also represents a high strategic fit, with an overall contribution to economic growth and providing more reliable journey times. However, officers consider that Option 3a can retain these strategic benefits but with an improved Benefit to Cost Ratio (BCR) over Option 3. Furthermore, Option 3a may have less visual effects and is within an existing transport corridor.
9. Between Cambourne and Cambridge journey times for bus services using end to end segregated infrastructure would be significantly faster than those using conventional bus lanes or hybrids of bus lanes and segregated infrastructure as set out in Table 1.

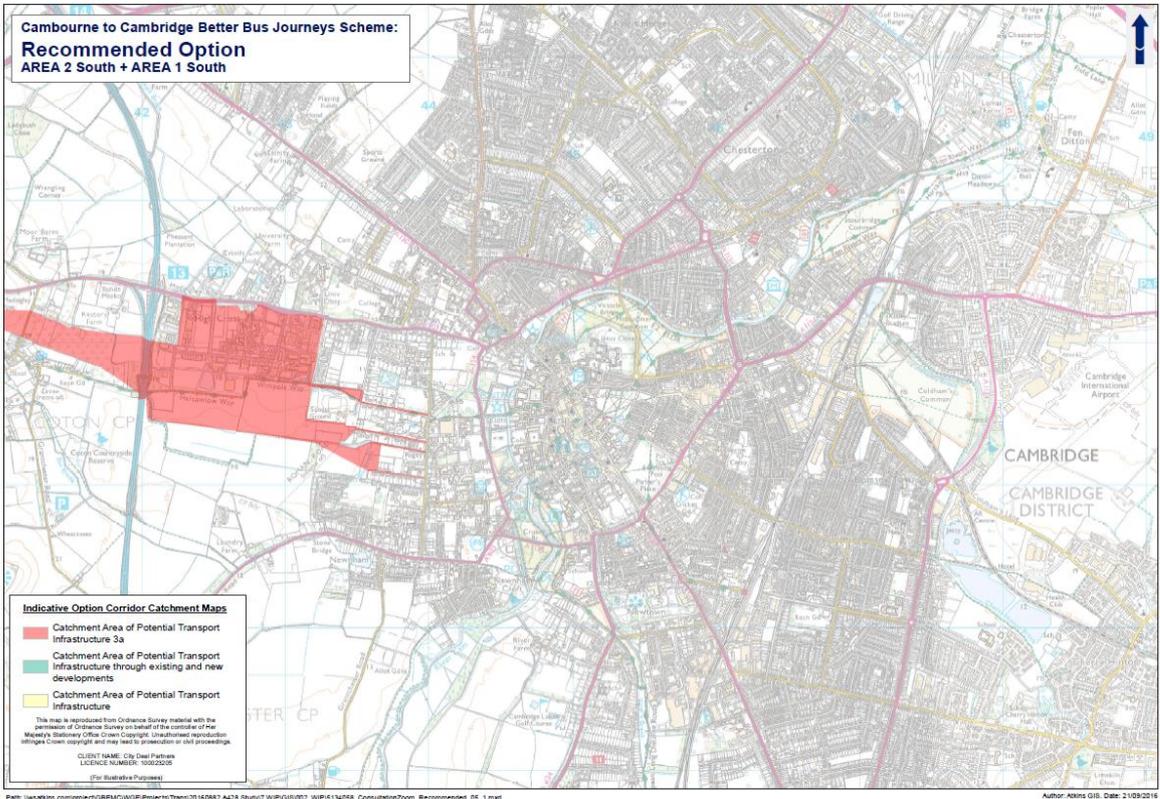
<b>Option</b>	<b>Cambourne-Queens Rd-Cambourne JTs (Minutes)</b>
<b>Do minimum</b>	75
<b>Option 1</b>	64
<b>Option 2</b>	38
<b>Option 3 Recommended</b>	28
<b>Option 4</b>	32
<b>Option 5</b>	30

***Table 1: Journey times for options***

10. The ongoing development of the Full Outline Business Case would allow for more detailed analysis of the costs and benefits of the recommended specific route alignment and P&R site, including benefit optimisation.
11. A P&R at Location 3 would offer the best operational fit with Option 3a or 3, therefore maximising the strategic and economic benefits of the Recommended Option further assessment would be needed. An *Option Assessment Report* setting out the reasons for the recommendation is in **Appendix 1. Figure 1** sets out the Recommended Option Catchment Area Maps and **Figure 3** sets out the recommended P&R sites.



**Figure 1: Recommended Option**



**Figure 2: Recommended Option east of M11**

## **Scheme Design Criteria**

12. The City Deal will produce environmental design criteria to guide design through the scheme development and minimise negative environmental impacts. The criteria will be based on the City Deal objectives and include design approaches that would ensure that new infrastructure would integrate into the existing landscape and urban realm and protect the continuity and character of open space and green belt. The Design Criteria will consider the following issues:
  - I. Location of infrastructure – respecting the urban and rural context for example through assessing proximity to and the relationship with the existing built up areas
  - II. A specific route alignment assessment to test accessibility from the start to the end of journeys through the centres of employment (e.g. Cambridge West) and housing (e.g. Bourn) and the environmental effects with a view to integrating with existing infrastructure and minimising impacts
  - III. Siting – positioning of infrastructure to minimise visual intrusion on the existing landscape through considering issues such as ground levels, slopes and other natural features and also minimising impact on important features such as ecological and heritage assets
  - IV. Design – the materials, features and introduced landscaping that will form the new infrastructure and achieve high quality design, minimising environmental impacts consistent with delivering the scheme’s objectives, and integration with existing infrastructure and the ends of the route and along it.
13. These design criteria will reflect and supplement the existing statutory assessments, local and national policy and guidance and will update the Urban and Environmental Design Guidance adopted in June 2016.

### **Background**

14. The Greater Cambridge City Deal aims to enable a new wave of innovation-led growth by investing in the infrastructure, housing and skills that will facilitate the continuation of the Cambridge Phenomenon. The role of Cambridge in supporting wider economic growth across the UK has been recognised by the Government which has identified the Cambridge-Milton Keynes Corridor as a key priority for national infrastructure investment. The City Deal is an important part of national economic growth.
15. The City Deal is based on the policy framework established by the local planning and transport authorities. This aligns the spatial and transport planning policies into what amounts to a single overarching development, infrastructure and delivery strategy for Greater Cambridge intended to achieve the reduction of current and future predicted congestion by means of a shift to public transport and to active modes such as cycling and walking.
16. The Transport Strategy for Cambridgeshire and South Cambridgeshire (TSCSC) prepared in parallel with the Submitted Local Plans was adopted in March 2014. The strategy provides a plan to manage the rising population and increasing demand on the travel network by shifting people from cars to other means of travel including public transport, walking and cycling. Policy envisages a range of infrastructure interventions on the St Neots and Cambourne to Cambridge

corridor as a key part of the integrated land use and transport strategy responding to levels of planned growth. The Cambourne to Cambridge corridor is one of the key growth areas identified in the Submitted Local Plan.

### **Progress to date**

17. In October/ November 2015 a public consultation was undertaken on the Options. The public consultation was extensive. 13,000 leaflets containing the survey and 30,000 postcards were produced. Over 8,000 leaflets and 20,000 postcards were delivered to those who lived along the A428 corridor, whilst the others were distributed at a variety of local outlets, as well as through informal exhibitions. Eleven events were held between Tuesday 27th October and Thursday 19th November, gathering a combined attendance of over 300 members of the public. 2,193 surveys responses were received.
  - 70.3% of respondents agreed in principle to better bus journeys between Cambourne and Cambridge.
  - Over 50% of respondents indicated that they were often in slow or stationary traffic between the Madingley Road Roundabout and the M11 junction.
  - 66.3% of respondents felt it was important or very important that cycling and pedestrian facilities are improved within this scheme;
  - Options Area 1 Central and Area 2 Central received majority support (66.8% and 58.1% respectively);
  - Options Area 1 South and Area 2 South received majority opposition (65.5% and 58.2% respectively) as did Option Area 1 North (57.8%);
  - From comments and communications sent in separately to the survey, the most opposition was seen for Area 1 South, due to the potential negative environmental effect it might have on Coton and the landscape of the area;
18. The Cambridge to Cambourne Better Bus Journeys scheme objective is to deliver new public transport infrastructure to achieve improved connectivity and reduced congestion between residential and employment areas, while improving the quality of life. The scheme will support economic growth by improving connectivity – making travel times faster, more frequent and more reliable - between existing and planned residential and employment sites to the west and north-west of Cambridge, including at Cambourne, Bourn Airfield, West Cambridge and St Neots.
19. The A428 and A1303 are key routes into Cambridge from the west and already operate at capacity at peak times, with significant congestion between the Madingley Mulch roundabout and junction 13 of the M11. The proposed new P&R will help reduce congestion on the A1303 and will include cycling facilities. High quality cycling facilities will be integral to the proposed scheme providing direct segregated and safe cycle journeys from Cambourne to Cambridge.
20. In line with national guidance and the Greater Cambridge City Deal Assurance Framework agreed with the Department for Transport (DfT), officers have been taking forward a step by step scheme development process to appraise options for public transport and cycling infrastructure interventions along the corridor to meet these policy objectives.

21. **Table 2** summarises the process and the current stage of the project.

<b>Step 1</b>	Identify feasible options	
<b>Step 2</b>	Identify options for further single scheme option development on the basis of a Strategic Outline Business Case	 This Report
<b>Step 3</b>	Present a Full Outline Business Case for single scheme approval	
<b>Step 4</b>	Seek formal consent to construct	

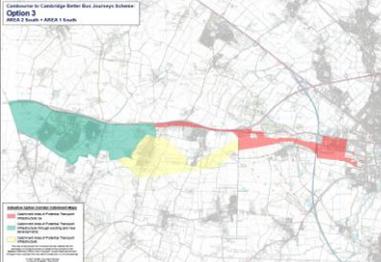
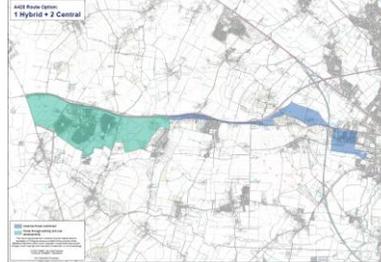
**Table 2: Project Development Steps**

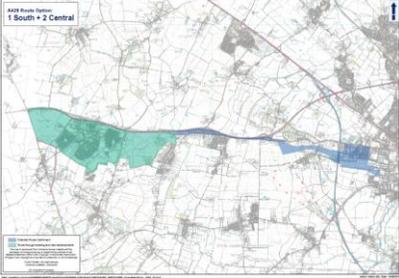
22. The results of the public consultation on options were presented to the City Deal Executive Board in March 2016 and have informed the ongoing assessment to date. The consultation highlighted support for public transport and cycling improvements along the corridor but significant concern that new off line bus infrastructure would represent poor value for money and adversely affect the environment.
23. The strategic assessment shows that, when the broader economic growth and housing growth benefits are considered, an off-line scheme would provide significant benefits in line with the City Deal Agreement and objectives and the business case will be further developed involving full consultation. Design Criteria will ensure that local concerns about potential environmental effects of off line infrastructure are a full part of the design process. Appraising and mitigating environmental impacts referencing national and local policy is part of the scheme development process.
24. New segregated public transport infrastructure also provides the prospect for space for new cycling infrastructure which 66.3% of respondents agreed was a priority for any scheme proposal.
25. The consultation also raised concerns about the impact of a route north of the A1303 (Madingley Road) on the 800 Acre Wood and the American Cemetery. It is recommended that these options are not pursued. The potential for routing through the West Cambridge site was identified through consultation and will be considered further through the route option development and design work described above
26. A Local Liaison Forum (LLF) of local Members and stakeholders was established in March 2016 to assist in the ongoing detailed development of the Scheme, and informal engagement continues to take place with stakeholders, landowners and statutory consultees, and the LLF will be involved at each key stage, assisted by meetings between officers and the LLF chair and Vice Chair, and by input from the LLF at decision stages, including at meetings of the Board and Assembly.

## Considerations

27. The Department for Transport (DfT) Web Transport Assessment Guidance (TAG) is the standard method to appraise transport investment options.
28. The TAG guidance supports public investment decisions for transport schemes that deliver the greatest value for money considering the following 5 Cases for investment:
  - Strategic case including those wider economic benefits which capture the added value of the scheme beyond its direct impacts;
  - Economic case (including environmental considerations);
  - Commercial case;
  - Financial case;
  - Management case.
29. Appendix 1 – The Option Assessment Report summarises and draws together the 5 cases and assesses the merits of 5 the options and reaches a recommendation on the most appropriate option The 5 Cases are produced in full in the Background Papers to this report including an Executive Summary.
30. At the early stages of option appraisal, the main focus is the strategic fit with the overall objectives of the scheme promoters. This is considered in a Strategic Outline Business Case which is the sum of the 5 cases. TAG recommends that proportionate resources are used appropriately at each stage of the development process. At this stage, the assessment is 'high level' and the details of the Economic, Commercial, Financial and Management Cases will be refined once a strategic direction is set and a single option is agreed for further appraisal.
31. The key strategic consideration has been the extent to which options fit the Greater Cambridge City Deal Agreement objectives. These are:
  - i. to nurture the conditions necessary to enable the potential of Greater Cambridge to create and retain the international high-tech businesses of the future;
  - ii. to better target investment to the needs of the Greater Cambridge economy by ensuring those decisions are informed by the needs of businesses and other key stakeholders such as the universities;
  - iii. to markedly improve connectivity and networks between clusters and labour markets so that the right conditions are in place to drive further growth;
  - iv. to attract and retain more skilled people by investing in transport and housing whilst maintaining a good quality of life, in turn allowing a long-term increase in jobs emerging from the internationally competitive clusters and more university spin-outs.
32. 5 options have been assessed representing 3 levels of infrastructure intervention:
  - I. High – a significant degree of offline segregation for all or the majority of the route with integral high quality cycle improvements
  - II. Medium - a hybrid of both on and off highway measures such as a stretch of busway combined with an on road bus lane with high quality provision on segregated sections but with minimal improvement on highway sections and
  - III. Low - conventional highway improvements such as bus lanes with minimal improvements for cycling

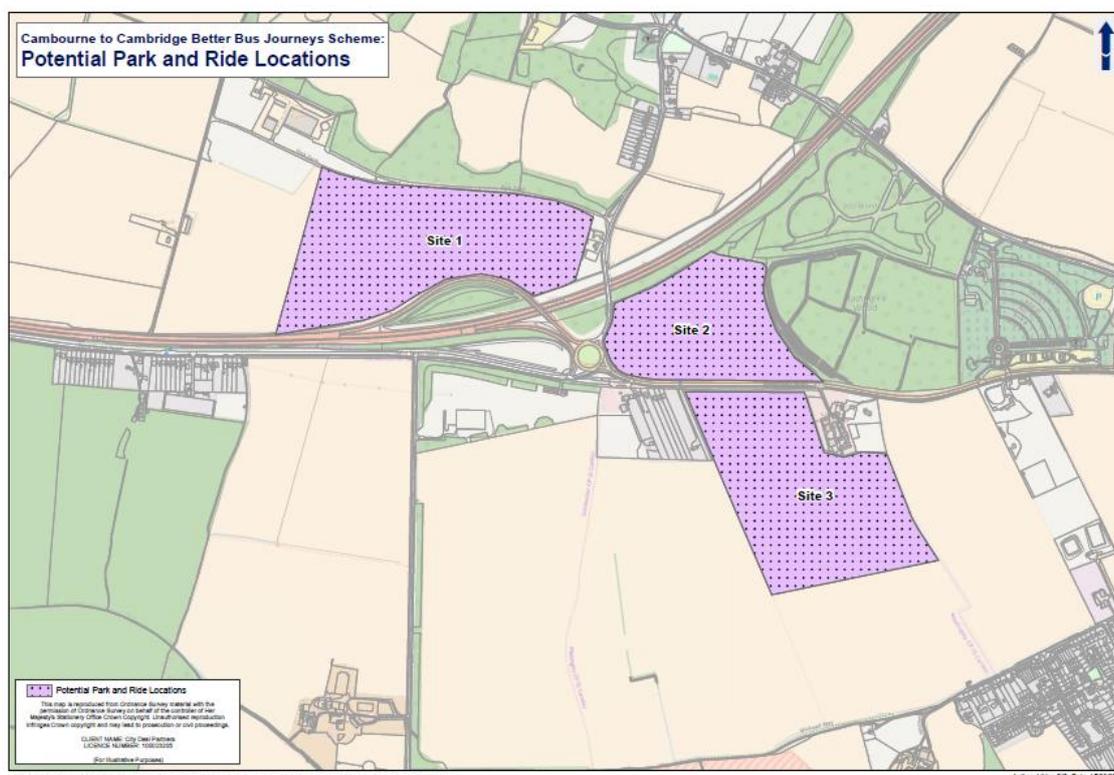
33. Officers in seeking to reduce potential environmental effects and cost which were highlighted in the public consultation as concerns related to off line infrastructure have identified a modification of Option 3 termed **Option 3a** which would offer a segregated route alongside St Neots Road from Bourn to Madingley Mulch roundabout before continuing as Option 3. Option 3a has been considered on an early transport planning and engineering basis to offer a feasible variation to Option 3. Option 3a has not been modelled.
34. The options modelled are briefly summarised and illustrated in Table 3 below.

Scheme	Level of intervention	Brief description	THUMBMAILS FOR REFERENCE - FULL SIZE VERSIONS OF THESE PLANS ARE PROVIDED IN THE PLAN APPENDIX
Option 1	Low	Improvement to bus services, which will run along existing roads. No bus priority is proposed on the existing A428 dual carriageway. Signalisation of Madingley Mulch roundabout Eastbound bus lanes from Madingley Mulch roundabout to Lady Margaret Road.	
Option 2	Medium	A new segregated bus route linking Cambourne and the proposed Bourn Airfield new settlement. Continues along St Neots Road with bus priority measures to the A1303 / A428 junction; from here a new segregated bus route going north-east connecting to Madingley Road just west of the M11. Eastbound bus lane on Madingley Road to Lady Margaret Road.	
Options 3 and 3a	High	A new segregated dedicated bus route connection between Cambourne and Bourn Airfield before running either south of Hardwick (Option 3) or in between the St Neots Road and the A428 (Option 3) to Madingley Mulch roundabout. From here a new segregated dedicated bus route running north of Coton, across the M11 at a new bridge, and thence to Grange Road, with a connection along the way to the West Cambridge University site. Also allows for a high-quality segregated cycle route.	
Option 4	Medium	Segregated bus route linking Cambourne and Bourn Airfield. The route continues along St Neots Road with bus priority measures to the A1303 / A428 junction. From here a new off line segregated bus route going north-east from connecting in to Madingley Road west of the M11 bridge. Uses the existing bridge to cross the M11 and using route through West Cambridge to Grange Road.	

Option 5	Medium	<p>A new offline segregated bus route linking Cambourne and the proposed Bourn Airfield new settlement. The route continues along St Neots Road with bus priority measures in place to the A1303 / A428 junction, new Park &amp; Ride provided at Madingley Mulch roundabout. From here a new offline dedicated bus route running north of Coton and parallel to Madingley Road and Madingley Rise to Grange Road, with a connection to the West Cambridge University site.</p>	 <p>The map displays a geographical area with a network of roads. A specific route is highlighted: a green shaded area on the left side, a blue line extending horizontally across the middle, and a blue line extending horizontally on the right side. A legend in the top left corner of the map area reads '4000 Route Network' and '1 South • 2 Central'. A scale bar is visible in the bottom left corner of the map area.</p>	
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**Table 3: Summary of Options**

35. All of the options included a Park & Ride at Madingley Mulch roundabout as this was assessed as the best strategic location. In the public consultation 46.1% expressed no preference for a specific location at Madingley Mulch roundabout for a P&R site. For those who expressed a preference, north west of the roundabout received 22% support, 17% preferred to the south and 9% preferred the north.
36. A site at Madingley Mulch is considered suitable based on the nature of the predicted congestion around Cambridge, and the balance between access and operating costs. It is considered that a site at Madingley Mulch would alleviate capacity constraints at the existing Madingley Road Park and Ride site.
37. A series of locations at Madingley Mulch roundabout were considered feasible as set out in the plan attached in **Figure 3**.



**Figure 3 P&R Options assessed**

### Strategic and Economic Case

38. The Strategic Case focuses on the overall policy objectives of the City Deal partners and the extent to which options meet those objectives and address the need to undertake a scheme. The Strategic Case also includes assessment of how options will impact the local and national economy through Gross Value Added (GVA or wider economic benefits).
39. The Economic Case considers direct transport and economic benefits for each option, and includes a desktop assessment of environmental impacts. The Economic Case also provides a Benefit Cost Ratio (BCR) which can assist in the

overall ranking of options. The following is a brief summary of performance of each option under these Cases.

***Low Level Interventions: Option 1***

40. This Option has a low fit with strategic objectives. It does not offer high quality public transport infrastructure along the corridor. Buses will not be segregated from other road users and therefore not benefit from the highest level of reliability. Only one way eastbound bus priority is provided and no long term additional capacity for growth is identified in this option. Some third party land would be likely to be required. The wider impact on economic growth is considered the lowest. This option does not provide improvements to existing cycling infrastructure along the A1303 as there is limited scope for enhanced cycling provision.
41. The option has the highest initial BCR of 1.03 but this is still low according to TAG classifications. The potential for improvement of the BCR is limited due to highway constraints. This option has lowest environmental impacts as it is on the existing highway but would impact on streetscape and urban realm.

***Medium Level Interventions: Options 2,4 and 5***

42. These 'hybrid' options have medium strategic fit, performing better against the strategic objectives than Option 1, but not as well as the fully segregated route that would be provided by Option 3. Each option would provide segregation along partial areas of existing congestion, but do not provide end to end solutions and as such are compromised. As they interact with the general highway there is reduction in reliability and capacity, and the benefits of the segregated sections are therefore dissipated. The impact on wider economic growth of these options is significantly higher than the low level intervention, but not at high as the fully segregated Option 3.
43. The initial BCRs for these options are all classified as 'poor' according to TAG classifications:
  - Option 2: 0.489
  - Option 4: 0.043
  - Option 5: 0.054
44. There is limited potential for improvement of the BCRs due to the constraints of the highway sections of the route. Any additional benefits for cycling are potentially greater on the segregated new infrastructure than on-line sections of the corridor.
45. These options all have significant potential environmental impacts where off line routes are proposed. Of particular concern in the public consultation were effects to the north of Madingley Hill including those on Madingley Wood and the 800 Wood.

***High Level Interventions: Option 3 (and 3a)***

46. This option has the highest strategic fit as it provides segregated infrastructure for public transport across the whole route offering the benefits of fast, frequent and reliable journeys. It also has potential to offer greater capacity for future growth in public transport provision by creating a new public transport corridor

into Cambridge from the west. Consequently it is considered to have the highest impact on wider economic growth as measured through Gross Value Added.

47. The initial BCR for this option is 'poor' according to TAG classifications at 0.20. It has the highest costs and potential environmental impacts due to off line segregation across the route. However it also has potential to materially improve the BCR during the next stage of work. This option includes new high quality provision for cycling throughout the entire corridor.
48. In major transport infrastructure schemes the BCR will evolve as further detailed development of the scheme proceeds at each successive Step. At this stage the strategic fit aligned with City Deal objectives is prioritised. The BCR will be refined during the next Step, for example as cost certainty increases and/ or the level of third party contributions to the scheme is more clearly understood. Additionally benefits can be optimised e.g. journey time improvements.
49. Option 3a is considered a viable variation of Option 3 which may improve the BCR, for example through reduced infrastructure lengths, improved journey times and lower environmental effects.
50. The City Deal Assurance Framework requires options to achieve a BCR of more than 2 unless there are clear wider economic benefits. The Strategic Case appraisal has estimated Gross Value Added of the different levels of infrastructure intervention as set in **Table 4**.

Benefit	Option		
	Low (On highway)	Medium (Hybrid) Option	High (Segregated) Option
<b>GVA benefits – Greater Cambridge level (£s in discounted 2010 factor prices)</b>			
Direct jobs	189	606	786
Direct GVA per annum	5.2	17.5	22.6
<b>TOTAL GVA</b>	<b>155.7</b>	<b>526.2</b>	<b>679.3</b>

**Table 4: Estimated GVA Benefits to Greater Cambridge of different levels of infrastructure intervention on A428-A1303 corridor.**

51. Initial engagement has taken place with the DfT on the Strategic Outline Business Case development. This discussion has focused on the general approach to capturing costs and benefits within the overall evaluation framework of TAG applied to City Deal. The DfT, as part of its national remit, is currently finalising guidance on how Gross Value Added should be incorporated within TAG. GVA is a key measure of success for City Deal Programmes. This guidance once adopted can be used to refine the inputs into the Full Outline Business Case during the next step of option development.
52. The DfT confirmed that at the early stage of option selection, BCR considerations should only form part of the broad value for money assessment which encompasses the wider strategic case for investment. Further refinement of the BCR and closer alignment with the GVA assessment will form the key part of the Full Outline Business Case for the Recommended Option before seeking statutory approvals.

53. The case for investment should make clear reference to the wider economic context, considering long term development scenarios which reflect the City Deal objectives including additional/expedited housing and jobs growth. This approach has already been reflected in other schemes where transport proposals with relatively low pure transport BCRs have been approved where there are clear wider additional benefits

### Financial, Management and Commercial Cases

54. These three Cases consider issues and risks associated with the delivery of Options. As these Cases are more dependent on detailed analysis which under TAG is carried out, proportionately and in detail, for a recommended option only, they will only be of consideration at this stage if they identify significant strategic differentials between options that cannot be addressed in more detail at the next stage of option development.
55. The Management and Commercial Cases have concluded that while all options have risks and issues associated with delivery, these are within the County Council's capacity and experience to manage for example due to recent experience on delivering the Cambridgeshire Guided Busway.
56. The financial case sets out high level capital costs estimates for each option on an "end-to-end" basis, i.e. Cambourne-to-Cambridge, which in practice will be allocated between Tranche 1 (Madingley Mulch to Cambridge) and Tranche 2 (Cambourne to Madingley Mulch). These are as set out in **Table 5**:

Cost item	Option 1 cost (000's)	Option 2 cost (000's)	Option 3 cost (000's)	Option 4 cost (000's)	Option 5 cost (000's)
Preparatory costs	£2,238	£5,106	£10,140	£5,945	£7,286
Construction costs	£22,827	£52,082	£103,426	£60,640	£74,314
Land costs	£2,407	£3,435	£9,119	£3,484	£3,435
Risk	£5,164	£11,703	£19,147	£13,603	£16,679
<b>Total</b>	<b>£32,636</b>	<b>£72,326</b>	<b>£141,833</b>	<b>£83,673</b>	<b>£101,713</b>

**Table 5: Early estimate of outturn capital costs for each option**

57. Option 3a has potential to offer similar benefits to Option 3 with a reduction of cost over the provision of an entirely new corridor. The estimation of costs of Option 3a will form part of the next Steps of work along with refined estimates for Option 3. Operational costs are estimated in the Economic Case and will also be subject to further estimation and refinement.
58. These estimated costs show significant differential but at this stage are subject to significant refinement in areas such as risk, optimism bias and third party contributions. These costs are for the complete scheme from Cambourne to Cambridge. The Board have allocated £59m from Tranche 1 for the section from the A428 at Madingley Mulch to Cambridge. The remaining section would require funding under tranche 2 (2020-2025).

## Summary of Strategic Outline Business Case

59. Focusing on strategic fit as required at this stage of scheme development, of the modelled Options, Option 3 has the best outcome. Option 3a is considered to, subject to further assessment and modelling, retain these strategic benefits but with reduced costs. While all options currently have poor to low BCRs according to the TAG classifications, this is to be expected at this stage of the scheme development process and both Option 3 and Option 3a have significant potential to improve this through further work due to their segregation. The other Cases do not at this stage offer any strategic reason to differentiate between the options.

### Further integration of recommended option

#### *City Centre Access*

60. The section of route on highway within the City Centre will be subject to further detailed development at the next step of work. The issues around passenger demand, route optimisation and on street measures will be considered. The City Centre Access Study proposals for tackling peak time congestion, in particular the Peak Congestion Control Points which are proposed for Queen Street and Grange Road will complement the preferred option. It is envisaged that as part of the A428 scheme delivery a number of on street measures may be promoted to benefit all public transport and active modes.

#### *Western Orbital*

61. In December 2015, the Executive Board agreed that high level Options for a Western Orbital bus link should be consulted on as part of ongoing development work. Due to its proximity the Western Orbital bus link has close strategic links with the Cambourne to Cambridge Corridor. A report will be presented to City Deal Board for selection of its preferred option (s) in November 2016.
62. There is a high level of synergy between these two City Deal schemes and the potential positive impact on the benefits by considering both schemes strategically as scheme development for both moves forward.

#### *Cambridge West*

63. The recommended option serves the Cambridge West development and could either pass to the south of the development or pass through the development. Early engagement has taken place with the Cambridge West land owner who is supportive. This will continue during the next Step of further scheme development to discuss the interface, alignment and extent of segregation achievable.

#### *Cycle/ Pedestrian provision*

64. There is great potential in this corridor to enhance multi-modal journeys by enhancing cycling and pedestrian routes. Segregated continuous cycling and pedestrian infrastructure would be an integral part of the scheme similar to the existing Cambridgeshire Guided Busway

### *Bus stops*

65. The rationale behind the entire project, and the choice of a segregated route, is partly driven by the desire to reduce journey times to an absolute minimum. That implies that there would be few bus stops along the route, aside from the one at the new Park & Ride. However, in respect of Catchment Areas 3a (and its fall-back 3), there may be scope for a bus-stop near Hardwick. Local access provision stops and service patterns would form part of the next step of defining the specific route alignment. The number of stops and their location would be balanced against journey time consideration and patronage demand.

### **Next Steps**

66. The next Step of the scheme development will be to produce a Full Outline Business Case for a specific route alignment for the proposed scheme. This will include full outline assessments on the range of potential costs and benefits identified in the Strategic Outline Business Case and set out more information on the detail of procurement of the scheme e.g. implementation.
67. The Catchment Area maps in the Map Appendix are based on broad catchments within which a specific alignment would be identified. This will require further assessment including engineering and transport modelling. Specific considerations will include:
- Undertaking further feasibility assessment of Option 3a using the route of St Neots Road. If it is considered feasible then this option will be adopted as the Recommend Option
  - Further stakeholder engagement with developers along the corridor to identify potential alignments through sites under planning consideration: Cambourne West, Bourn Airfield and West Cambridge.
  - Considering the onward routes within the highway network taken by bus services into the City Centre

### Further environmental assessment and design principles

68. Identification of the optimum alignment will require further environmental assessment. Environmental impacts were a key concern at the initial consultation. Siting of the specific alignment, design measures or other relevant mitigation measures can be taken to reduce or avoid negative effects. In some instances environmental enhancements may result e.g. the creation of new or improvement to ecological habitats. The impacts of changes in traffic flows on settlements e.g. Coton, will be assessed and, if required, traffic management measures identified. The overall approach to the design measures will be defined by local and national policy and guidance and the proposed City Deal design criteria.
69. When assessing the recommended specific route alignment or the section of Option 3/3a that would run broadly east-west between Madingley Hill (to its north) and Coton (to its south), Officers will (in conjunction with the A428 LLF and Coton Parish Council) take the landscape topography into consideration, and investigate ways of mitigating the potential visual impact of the route.
70. As part of the further scheme development, traffic management assessment will be carried out for all interfaces with existing highways e.g. Cambridge Road Coton. Safety to the public will be the primary concern in developing the design

of the interface the scheme. Any outline designs will be subject to Road Safety Audit and any recommendations for scheme mitigation taken forward.

#### Carry out further public consultation and ongoing stakeholder engagement

71. The next public consultation before recommendation of a Full Outline Business Case for single scheme approval to the City Deal Board will be held on the proposed alignment(s) within the Recommended Option catchment area. Within the public consultation, the range of alignments considered with the benefits and disbenefits including environmental effects of each alignment will be set out.
72. Stakeholder engagement will support officers in developing the next public consultation. Views will be sought from the LLF, Assembly, and the local authorities and Parish Councils and including local Councillor and stakeholder organisation input

#### Refinement of business case to deliver a Final Outline Business Case for a single option

73. The next key decision Report to the City Deal Board is proposed at the Completion of STEP 3 in November 2017.
74. The culmination of STEP 3 is the Full Outline Business Case. The City Deal Board will consider the Full Outline Business Case to decide whether a proposal should proceed to implementation which will include the detailed design of a scheme and application for statutory approvals.
75. In line with TAG guidance, it will be necessary to continue to develop a lower cost option for comparative purposes to inform further decision that the City Deal Executive Board will be required to consider. As such Option 1 (on line option) will also continue to be assessed but not included in further consultation.

#### Programme

76. The Recommended Option may require a Transport and Works Act (TWA) Order or possibly (depending on the nature and scale of the scheme) a suite of consents including Highways Act powers and planning powers to achieve the range of consents necessary to deliver the scheme.
77. The Cambridgeshire Guided Busway Order 2005 took approximately 3 years to achieve and given the extent of powers which may be required for Option 3 an updated timescale from the generic programme reported to the City Deal Executive Board in March 2016 is now set out in the following **Table 6**:

<b>Stage</b>	<b>Target Completion Date</b>
Report to GCCD Executive Board on strategic outline business case in order to select a Recommended Option <b>Completion of STEP 2</b>	October 2016 (this report)
Refinement of Recommended Option(s) detail to ensure sufficient public information available during next consultation	End 2016
Consult on Recommended Option(s) alignments	Summer 2017
Completion of Full Outline Business Case for Recommended Option	October 2017
Report to GCCD Executive Board on a Full Outline Business Case for the Recommended Option and to seek authority to commence statutory processes and procurement <b>Completion of STEP 3</b>	November 2017
Substantially complete statutory Approvals	June 2019
Report to GCCD Executive Board on final scheme for authority to construct <b>Completion STEP 4</b>	September 2019
Start construction of scheme	February 2020
Substantially complete construction of entire scheme Cambourne to Cambridge	Summer 2024

**Table 6 Programme**

78. A detailed implementation strategy including procurement, contract management and construction timetable would form part of the Step 3 report to be presented to the Executive Board in November 2017.
79. Currently Tranche 1 prioritises a P&R close to Madingley Mulch roundabout and the corridor from Madingley Mulch roundabout to Cambridge City Centre. Tranche 2 is from Madingley Mulch roundabout to Cambourne. Selection of priorities for Tranche 2 follows in 2017.

### **Options**

80. It is recommended that the Option 3a should be the basis of Executive Board selection of a preferred option, and Option 3 only if Option 3a does not prove to be viable.
81. Alternatively, the GCCD Executive Board may consider another Option to be selected as the preferred Option against the officer recommendation for detailed design and further consultation.

82. It is also possible to select more than one Option for detailed design and further consultation.
83. The approach recommended is based on the full assessment of each option representing levels of intervention using appropriate methodologies and against the City Deal objectives and success criteria as well as local policies. Any other Option will not meet the overall programme objectives to the same extent.
84. Selecting 2 or more Options for detailed design would significantly increase both resource costs and timescales before a single Option for statutory consent can be agreed.

### **Implications**

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

- **Financial:** Resources are allocated as part City Deal Tranche 1. Developer contributions would, subject to agreement, also form part of a funding package for a final scheme. Growth Deal funding is also available for this corridor.
- **Staffing:** Project management undertaken by the Cambridgeshire County Council Major Infrastructure Delivery team
- **Risk;** A project risk register has been developed and will be updated throughout the course of the project

### **APPENDICES**

#### *MAP APPENDIX*

##### *1: OPTION ASSESSMENT REPORT*

### **BACKGROUND PAPERS**

#### *1: PHASE 2 END STAGE REPORT – OUTLINE BUSINESS CASE APPRAISAL – WS ATKINS*

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