



Report to: Greater Cambridge Partnership Executive Board

July 2018

Lead officer: Peter Blake – GCP Director of Transport

Cambridge South East Transport Study

1. Purpose

- 1.1. The A1307 Haverhill to Cambridge corridor is one of the key radial routes into Cambridge. It suffers considerably from congestion during peak times, particularly at the Cambridge end, at the junction with the A11 and around Linton, the largest settlement on the corridor. There are also some large employment sites in this corridor including the Babraham Research Campus (BRC), Granta Park, and Cambridge Biomedical Campus (CBC). The A1307 east of the A11 also has a poor accident record, particularly on the stretch around Linton and eastwards towards Horseheath.
- 1.2. The corridor has been identified by the Greater Cambridge Partnership's Executive Board, as a priority project for the Greater Cambridge Partnership's delivery programme.

2. Recommendations

- 2.1. The Executive Board is recommended to:
 - Note the results of Public Consultation
 - Approve Implementation of Phase 1 Quick Wins and the development of the other Phase 1 options for delivery from summer 2018

3. Officer comment on Joint Assembly recommendations and issues raised

Wandlebury Underpass

- 3.1. The proposal for a pedestrian/cycle underpass at Wandlebury was well supported in consultation, but also raised concerns over cost and level of use. The Assembly was concerned that the underpass would not be used.
- 3.2. The location is an accident cluster site and is at the end of the dual carriageway section. The proposed Linton Greenway is on the north side of the A1307 and Haverhill Road to Stapleford is on the south side. On the north side of the A1307 is the Wandlebury Country Park and the Gog Farm Shop, while on the south is the Magog Trust. An existing NMU path links Stapleford to the Magog Trust car park, but goes no further due to concerns over safe crossing of the A1307. There is a bus stop at Wandlebury with no current means of crossing the A1307 (dual carriageway at this point) safely.
- 3.3. Current DfT guidance for the speed of traffic and volume of traffic at this location is to provide grade separation or signals. Signal control of the Haverhill Road/Gog Farm Shop

junction was considered, but rejected on grounds of safety due to limited approach visibility from the east and high approach speeds. The limited visibility caused by the blind summit is a factor in the accident cluster at this location. On the basis that signal control of the junction had been rejected on safety grounds, providing a signal controlled pedestrian crossing was not considered sensible in view of the limited approach visibility.

- 3.4. Reducing the speed limit to 40mph was considered to reduce visibility requirements, but at the end of a dual carriageway section would raise compliance concerns.
- 3.5. A bridge was considered as an alternative to an underpass, but would have severe visual impact on the view over Cambridge and on the view of Wandlebury. It was rejected on that basis. An underpass was proposed as a means of safely connecting non-motorised users on Haverhill Road to the proposed Linton Greenway, and to provide safe crossing for bus users accessing the Country Park and Magog Trust. The underpass is supported by both Cambridge Past Present and Future and the Magog Trust.
- 3.6. A subway or underpass maybe less attractive to some users. In this case the design eliminates blind corners, and would provide end to end visibility. Given the elevated position, drainage would not be an issue. There is a risk that people will attempt to cross at grade, and urban restraints such as railing would not be appropriate.
- 3.7. In view of the Assembly concerns and the comments made by Smarter Cambridge Transport and others over cost and use, Officers propose to review the proposals and consider if there are lower cost solutions, and confirm the underpass provides value for money.

Linton Greenway

- 3.8. Concerns were expressed by the Chair of the LLF regarding the design of the Linton Greenway, particularly the width of cycleways.
- 3.9. In response to a public question to the March 2017 Assembly, Officers stated that, where reasonable and appropriate, they would adopt the standards in the latest DfT guidance for design of cycleways (IAN195/16 Cycle Traffic and the Strategic Road Network) appropriate for routes close to fast busy roads. This provides for physical separation between the path and the road.
- 3.10. This remains the intention for design of the Linton Greenway where constraints permit. Cambridge Past Present and Future, however, oppose widening through Wandlebury due to species rich verges, and do not consider widening to be necessary beyond Wandlebury. There are also locations where properties are close to the existing road. Moving the road simply to achieve separation may not be cost effective.
- 3.11. It is the intention to adopt DfT standards over as much of the route as constraints permit, but there may be locations where consideration of environmental impact and cost require a lower standard over short lengths. Constraints will be addressed on a case by case basis and solutions consulted on with stakeholders.
- 3.12. Concerns were raised in the LLF over the landscaping design of the Linton Greenway. For the design of the Greenways generally a landscape architect has been engaged. It is intended that they will also have input to the design of the Linton Greenway element of the Cambridge South East Transport Study.

4. Key issues and considerations

- 4.1. The Board's decision in November 2017 was:
 - Public consultation on the three strategies subject to Strategy 1 being considered as an off-road public transport corridor; with the most appropriate mode being the subject of further consideration and consultation at a later stage of scheme development following the outcome of this consultation.
- 4.2. A public consultation started on 9 February 2018 and finished on 9 April 2018. The original closure date of 3 April was extended to 9 April due to the snow in February delaying leaflet delivery. It was subsequently found that an area of approximately 25 dwellings had been omitted accidentally by the leaflet delivery contractor, and these were given an extension to 30 April to respond.
- 4.3. A total of 1785 responses to the consultation questionnaire have been received. In addition a further 129 written responses have been received via letter, e-mail, social media and at events.

5. Scheme Options

Response to Public Consultation

- 5.1. A summary of the responses to the public consultation can be found in Appendix A. Overall the responses were supportive of all the proposals, with support outweighing opposition.
- 5.2. Officers have considered the responses to the consultation and propose the following changes/additions to the proposals;

Cycle Improvements Newmarket Road, Great Abington

- 5.3. Consultation with Granta Park identified concerns over cycle safety on Newmarket Road, Great Abington. A cycle access to Granta Park from Bourn Bridge Road was closed by the landowner. Cyclists were therefore required to use Newmarket Road to access Granta Park. Newmarket Road is a section of road that used to be the A11 before the A11 was dualled in the 1990s. It is used by relatively little traffic, but what traffic does use it is fast. Measures to reduce speed have been ineffectual, and the County Council is using S106 funding to add additional signs and markings to warn of cyclists.
- 5.4. Due to the closure of the permitted path into Granta Park, Newmarket Road is the route by which cyclists would reach Granta Park from the proposed Linton Greenway. Officers recommend that the GCP proposals include measures such as a cycleway or traffic calming to improve cycle safety between the proposed Linton Greenway and Granta Park.

Babraham High Street Junction

- 5.5. In connection with a park and ride site proposal at Babraham a roundabout was proposed to provide access to/from the A1307. As it was primarily associated with the park and ride site, and it did not feature in the Local Liaison Forum workshops in 2017, the roundabout was withdrawn from the strategies presented to the LLF, and the Board. However, the lack of measures at Babraham High Street, which is an accident cluster site, were challenged in the February 7th 2018 Local Liaison Forum.

- 5.6. GCP proposals here are to provide a short section of bus lane between Babraham High Street and the A11. Officers agreed to reconsider junction improvements as part of the bus lane proposals.
- 5.7. Officers will consult with Babraham Parish Council who have ideas for improvement, and will address the comments made by Babraham Research Campus regarding safety crossing the road which is dual carriageway at this point.

Dean Road Junction

- 5.8. Although proposals for closing the central reserve here are more supported than opposed, it may be possible to amend the proposals to address concerns over access to West Wickham. Accidents are primarily clustered around the gap for the Bartlow turn, and the West Wickham turn has fewer accidents. Officers propose to consult with the CCC Road Safety Team and local stakeholders over closing only the Bartlow gap, leaving the West Wickham gap open, but with additional safety measures if needed.

Linton High Street – Right-Turn Ban

- 5.9. Overall, signalling the High Street junction was supported in the public consultation. However, strong opinions in opposition have been made by the Parish Council and others. Officers will re-evaluate this proposal, and continue the existing dialogue with Linton Parish Council.

Linton Greenway

- 5.10. The alternative route via the Strategy 1 tramway proposed by CTC Cambridge will be considered in further work on Strategy 1. Consideration will also be given to the alternatives proposed by Great Abington Parish Council.

Haverhill Road/Gog Farm Shop Junction and Underpass

- 5.11. Concern has been raised over the scale of the works, and the cost of the proposed underpass. The proposals will be subjected to further value engineering and review in developing the proposals further to ensure that they are appropriate. The signal alternative proposed by Smarter Cambridge Transport, previously rejected on safety grounds, will be reconsidered.

Phase 1 Quick Wins

- 5.12. Officers have considered the responses to the consultation and propose the following quick wins along the corridor to deliver some short term improvements to the route:

Dalehead Foods and Eastbound Bus Lane

- 5.13. Cambridgeshire County Council is carrying out major maintenance on the A1307 in 2018. This presents an opportunity to implement measures that can be delivered without requiring land or planning consent.
- 5.14. One of the areas of work is on the short section of dual carriageway west of Linton. This is an existing accident cluster site, associated with the entrance to Dalehead Foods. In the evening, peak hour traffic queues back from Linton to the start of the dual carriageway past the entrance to Dalehead Foods. Traffic tends to queue only in Lane 1, leaving Lane 2 clear.
- 5.15. Requests for merge in turn signing to make better use of both lanes were declined by the County Council who considered existing signs to be adequate.

- 5.16. GCP is proposing to use Lane 1 as a peak hour only bus lane enabling buses to pass the queue of traffic. Opportunity would be taken to improve signing on approach to the dual carriageway section. The bus lane combined with keep clear markings would address the existing safety problem at Dalehead Foods.
- 5.17. With major maintenance planned here in 2018, there is an opportunity to carry out these works at the same time, enabling an early intervention to improve bus journey times in the pm peak hour and improve road safety. A Traffic Regulation Order will be needed for the bus lane, but the works do not require land or planning consent.

Additional cycle storage and electric charging points at Babraham Road P&R site

- 5.18. Adding cycle storage was well supported in public consultation, and adding more electric charging points will further support the adoption of electric vehicles. The provision of increased cycle storage will encourage park and cycle to the Addenbrooke's Campus.

Upgrading the traffic signal controller at Linton Village College

- 5.19. The existing signals cause delay on the A1307. It is proposed to upgrade the signals to incorporate MOVA (Microprocessor Optimised Vehicle Actuation). MOVA caters for the full range of traffic conditions, from very low flows through to a junction that is overloaded. In normal conditions, it works to minimise delay. If any approach becomes overloaded, the controller switches to maximising capacity.

Speed management measures between Linton and Horseheath

- 5.20. These were well supported in public consultation. However, there was less support for reducing the speed limit. Main concerns from the public and stakeholders were around excess speed by overtaking vehicles. The introduction of average speed camera enforcement and monitoring success, before reductions in speed limit, would be a way forward.

Phase 1 Medium Term

- 5.21. Subject to the proposed alterations above, officers are recommending the Board authorise the development of the remaining Phase 1 proposals for delivery by the end of 2020. This includes:
- Granham's Road junction - right-turn lane;
 - Linton Greenway;
 - Haverhill Road and the Gog Farm Shop junction safety improvement;
 - Multi-user underpass at Wandlebury;
 - Signalised crossing at the Babraham Research Campus roundabout;
 - Eastbound bus lane at A11 and safety improvements at Babraham High Street;
 - Multi-user crossing of A11 via improved footbridge & underpass;
 - Signalise Hildersham crossroads with Toucan/Pegasus crossing;
 - Signalisation and right-turn ban (except buses) from Linton High Street;
 - Measures to ease bus movements in Linton;
 - Westbound bus lanes on approach to B1052;
 - Bartlow Road roundabout and rural hub;
 - Dean Road crossroads.

5.22. These would be packaged for delivery as soon as possible. Larger measures requiring planning consent, land acquisition, and a longer lead in period, would be completed in 2020. These would include:

- Haverhill Road and the Gog Farm Shop junction safety improvement
- Multi-user underpass at Wandlebury
- Multi-user crossing of A11 via improved footbridge & underpass
- Westbound bus lanes on approach to B1052
- Bartlow Road roundabout and rural hub

5.23. Others could be completed in 2019.

Phase 2 Longer Term Strategy

5.24. The GCP Board has agreed to a “pause” on strategic decisions until July 2018 to allow time to work with the Combined Authority on ensuring alignment of the major transport proposals.

Business Case

5.25. The business case for Phase 1 is summarised in Appendix B.

5.26. The stated aims of the project are to:

- Cut congestion;
- Improve air quality;
- Provide faster and more reliable transport routes into Cambridge and to employment sites;
- Link villages together;
- Improve junction safety through highway improvements;
- Provide high-quality walking and cycling facilities.

5.27. The scheme would positively contribute to growth along the corridor by:

- Improving local sustainable transport links between homes and jobs;
- Improving road safety along the corridor by making changes to key junctions to reduce conflict or by reducing the speed of vehicles with appropriate enforcement where there have been speed-related accidents;
- Support the delivery of job and housing growth along the corridor including important growth sites at Granta Park, Babraham Research Campus and the Cambridge Biomedical Campus;
- Help address local transport issues, for example, bus reliability along the A1307 corridor.

5.28. In the shorter term the Phase 1 measures will enhance road safety by addressing accident clusters along the route with junction enhancements, improve bus journeys in terms of reliability and journey times, especially in an eastbound direction at PM peak times and in the westbound direction around Linton in the AM peak.

- 5.29. The new pedestrian and cycle links including the Linton Greenway and safer crossing facilities will also reduce severance, improve access for all non-motorised users (pedestrians, cycles and equestrians), improve access to bus stops and improve linkages between homes, jobs and schools.

6. Conclusions

- 6.1. There is a strong case for progressing the Phase 1 works, which are all well supported, with changes where necessary to respond to public consultation feedback. These proposals, which are discrete interventions to improve road safety, improve cycling and walking, and provide localised bus priority are not in conflict with the Combined Authority proposals. They can therefore be progressed without waiting for the review by the CA.
- 6.2. Strategy 1 is the Phase 2 solution that has the greatest public support, and is the one most strongly aligned to off-highway, segregated, public mass transit options. Further technical and environmental work is needed on Strategy 1. A decision on a preferred strategy cannot be made until the Combined Authority have completed their review, and any changes required as part of the review implemented.
- 6.3. Phase 2 will be brought to the Board in autumn 2018 subject to alignment with the Combined Authority.

7. Implications

Financial and other resources

- 7.1. The estimated cost profile for Phase 1, excluding further development work on Phase 2 is:

2018/19	£	750,000.00
2019/20	£	6,600,000.00
2020/21	£	9,150,000.00

Risk management

- 7.2. There are no extraordinary risks. The key risks are:
- Obtaining agreement of Highways England to modification of the bridge over the A11 to increase parapet height and add ramps;
 - Securing planning consent for works in greenbelt and sensitive areas;
 - Decision on Phase 2.

8. List of appendices

Appendix A	Public Consultation Response
Appendix B	Business Case Summary
Appendix C	Figures
Appendix D	Programme

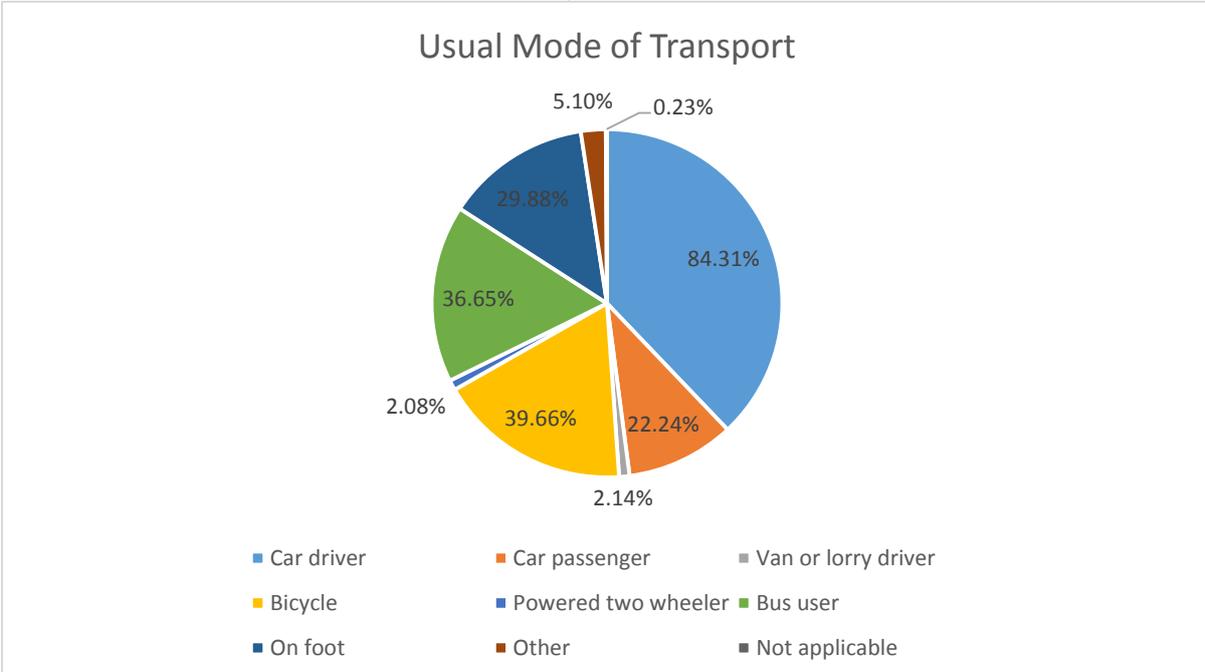
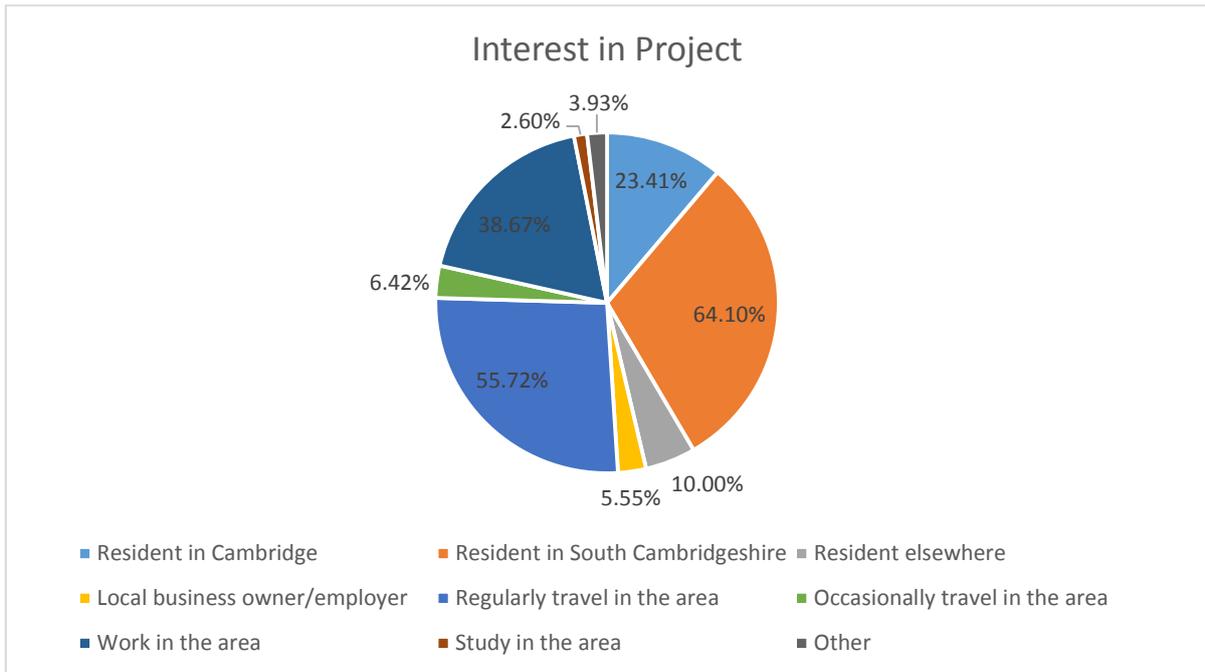
9. Background papers

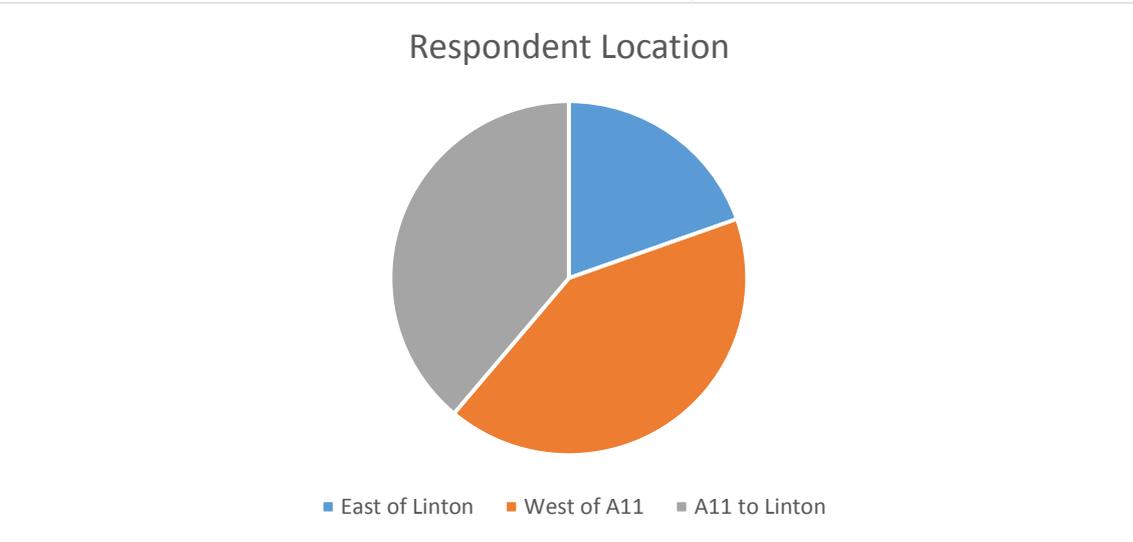
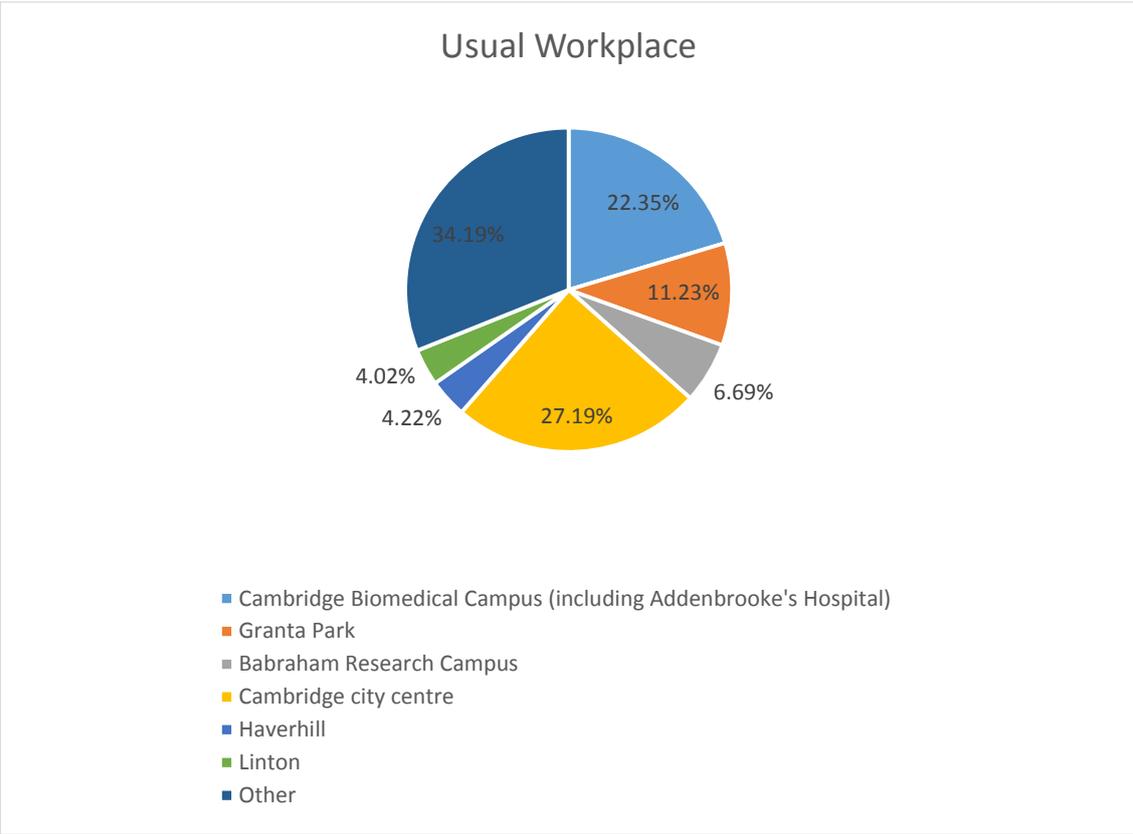
[Public Consultation Report](#)

Appendix A – Results of Public Consultation

- A.1. Public consultation started on 9 February 2018 and finished on 9 April 2018. The original closure date of 3 April was extended to 9 April due to the snow in February delaying leaflet delivery. It was subsequently found that an area of approximately 25 dwellings had been omitted accidentally by the leaflet delivery contractor, and these were given an extension to 30 April to respond.
- A.2. The consultation adopted a multi-channel approach to promote and seek feedback including through traditional and online, paid-for, owned and earned media, community engagement events in key or high footfall locations along the route and through the wide-spread distribution of more than 22,000 consultation leaflets.
- A.3. Thirteen drop-in events were held across the area to enable people to have their say in person and the opportunity to question transport officers and consultants.
- A.4. Quantitative data was recorded through a formal consultation questionnaire (online and hard-copy) with 1785 complete responses in total recorded. A significant amount of qualitative feedback was gathered via the questionnaire, at road-shows, via email and social media and at other meetings.
- A.5. A consultation leaflet was the principle paper-based mechanism for providing information about the consultation to people across the area. The leaflet included a questionnaire to invite comments on the level of support for each strategy proposed, for elements common to all strategies as well as other relevant information such as whether respondents would consider switching their mode of transport. The questionnaire sought profile information in order to facilitate further analysis. The leaflet was made available in other formats on request.
- A.6. In addition to the leaflet a consultation brochure, providing further background information on the three strategies and the scheme as a whole, was available at events and on request.
- A.7. The documents were made available online with links to the project webpage sent electronically at the commencement of the consultation to over 4500 interested parties. The availability of further online information and the online survey was referenced in the leaflet.
- A.8. Other means of publicity included events, earned media from news releases and distribution via the Partnership's owned channels both on and offline e.g. leaflets at the County's Park & Ride sites and at local libraries. Paid for media included Park & Ride bus screens, advertising in local newspapers and on radio, and poster sites including city centre boards. Online promotion included targeted Facebook advertising across the wider identified area. Twitter posts encouraging retweets via local people and organisations' feeds. The public consultation material presented the scheme to be delivered in two phases. Phase 1 comprised 17 elements along the A1307 between Cambridge and Haverhill. Phase 2 comprised three public transport strategies.
- A.9. A total of 1785 responses to consultation have been received to the questionnaire. In addition a further 129 written responses have been received via letter, e-mail, social media and at events.
- A.10. A few respondents indicated that they hadn't put forward an opinion on some of the elements as they felt they were lacking information on how they would be implemented and what they would achieve.

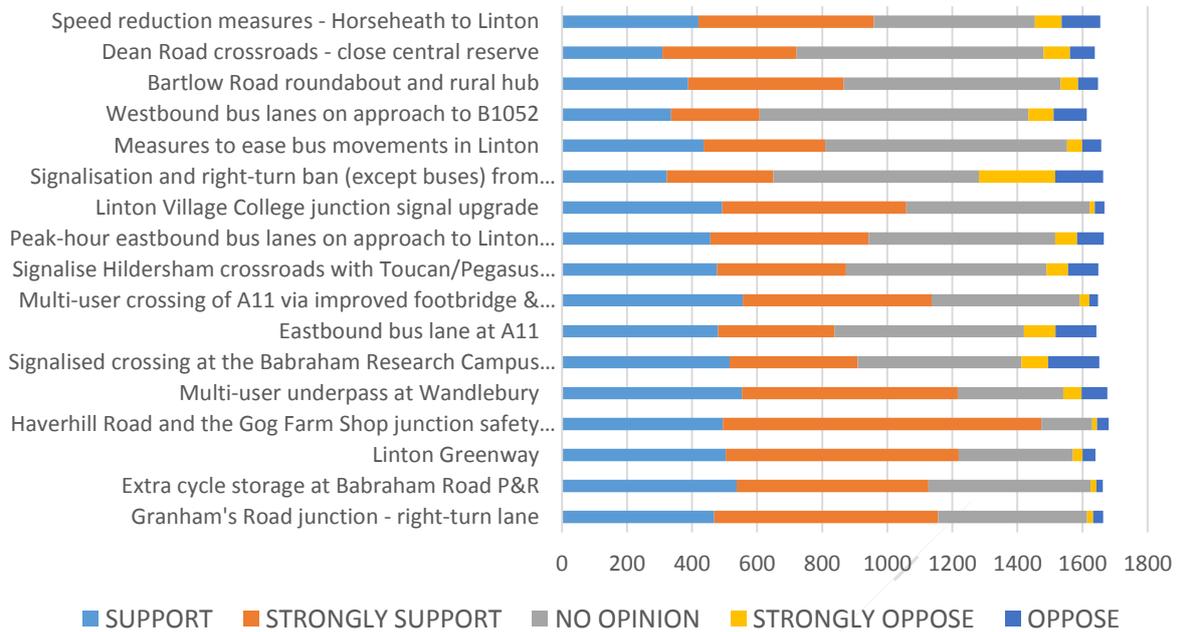
- A.11. Respondents were asked for their postcodes during the survey, but were not forced to enter a response. 1364 respondents entered recognisable postcodes, while nearly a quarter did not (421 respondents). Based on the postcode data provided most respondents resided in Linton (14.01%), Queen Edith's (9.64%), Great Shelford (7.9%) and Sawston (7.62%).
- A.12. These postcodes were also used to group respondents by parish (or ward in the case of Cambridge) and then into one of three categories; 'East of Linton' (covering 14.9% of respondents); 'Babraham to Linton', for respondents along the proposed route (covering 29.69% of respondents); and 'West of Babraham' (covering 31.54% of respondents).



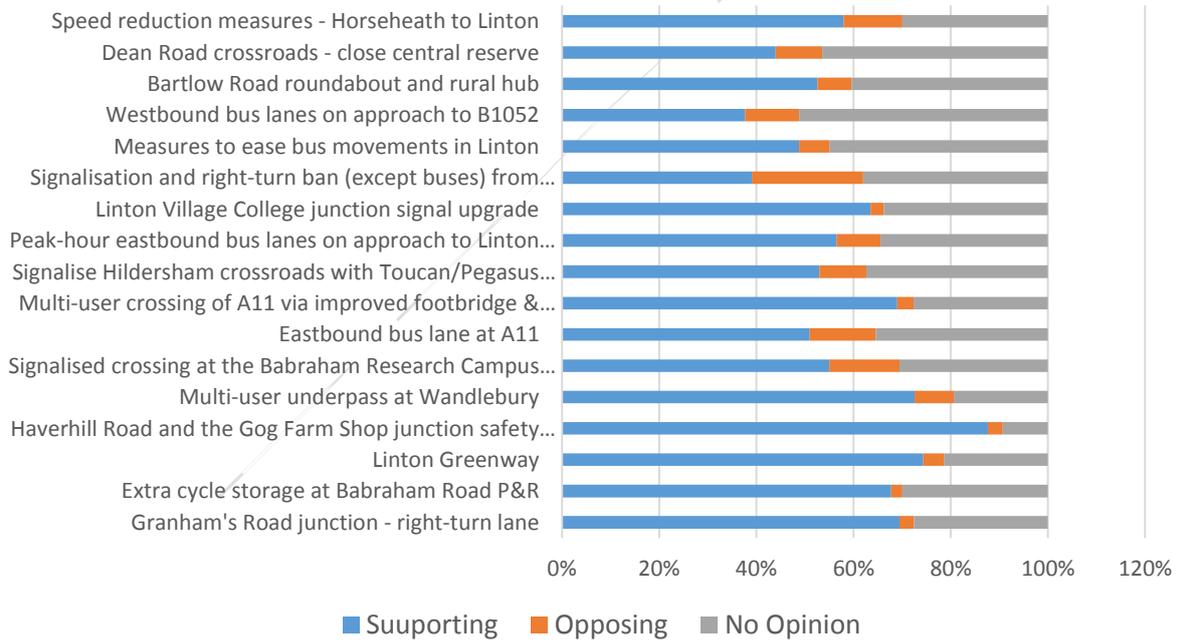


A.13. The overall picture was one of support in varying degrees for all the proposals:

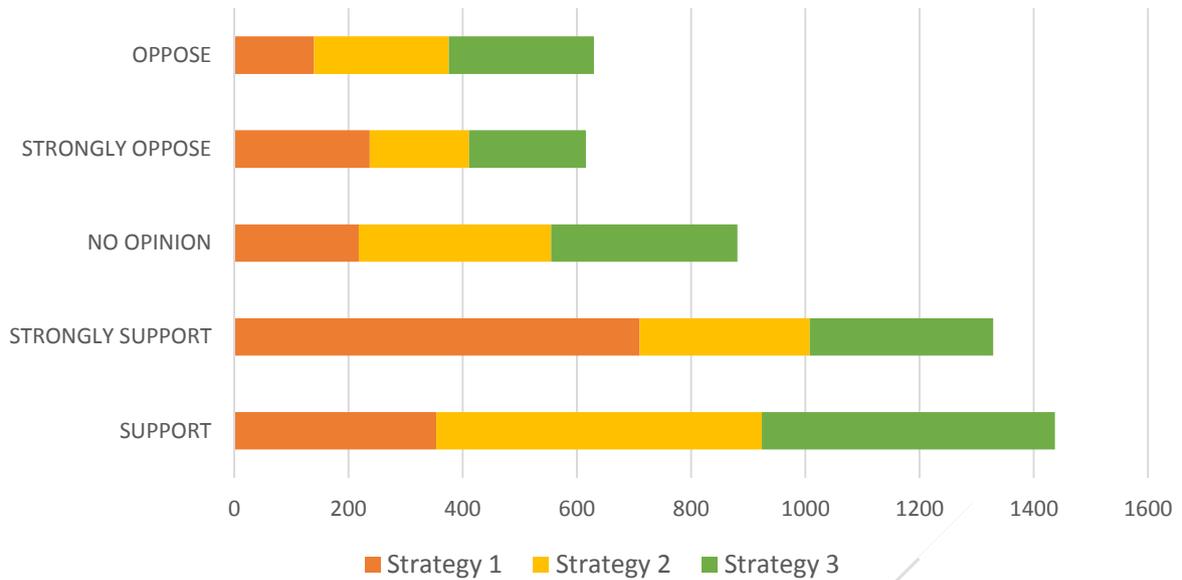
Phase 1 Consultation Response



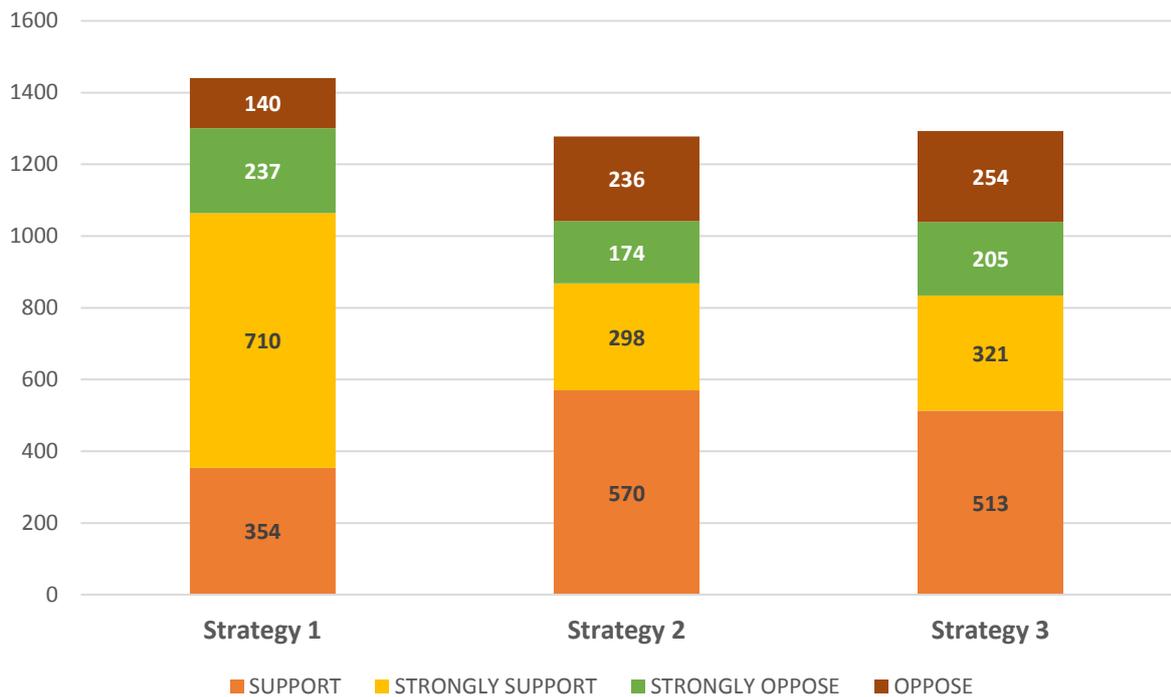
Phase 1 - Supporting vs Opposing



Phase 2 - Strategies Support



Phase 2 - Strategies Support



Phase 1 Themes

A.14. **Signalisation and right-turn ban (except buses) from Linton High Street.** Many respondents were concerned about this element, particularly the right-turn ban. They felt that stopping vehicles from turning right will force drivers to take alternative routes, none of which were felt to be suitable. There were concerns drivers would instead use Back Road or Bartlow Road, roads felt to be unsuitable for high volumes of traffic and currently in poor condition,

to access the junction at Abington that was also felt to be unsuitable for an increase in traffic. Respondents also felt that it would increase congestion for Linton residents and make accessing Cambridge difficult for the village.

- A.15. **Bartlow Road roundabout and rural hub.** Some respondents were supportive of this element, feeling the roundabout would increase the safety of this area of the A1307 and assist drivers needing to get from Linton from Bartlow. The rural hub was felt to be a positive move to improve modal shift to bus use, cycle use or encourage car sharing. It was also felt to ease parking issues on High Street, as some drivers use it for Park & Ride currently. A few of these respondents were concerned that drivers from Bartlow might struggle to get out onto the A1307 however, as roundabout precedence would go to drivers coming from Haverhill. Some respondents were opposed to this element. These respondents felt that the hill would limit visibility of traffic at the roundabout and that drivers may not slow down appropriately. Some of these respondents were concerned the amount of parking at the rural hub was too limited and would become inadequate for use quickly. A few respondents supported the roundabout but opposed the rural hub.
- A.16. **Congestion.** Many respondents discussed this theme. These respondents felt that some of these improvements would increase congestion or not be enough in the long term with current development plans, particularly for new homes in Haverhill. These respondents felt that bus lanes would force other traffic into less space and increase congestion. Respondents who indicated they were from villages along the route particularly felt this and other improvements aimed at buses would penalise them as current bus services were not felt to be adequate in the villages along the route. It was felt that the safety measures would slow traffic flow which would encourage drivers to take alternative routes around the A1307, including the villages along the route. It was also felt that anything that slowed the flow of traffic would increase frustration in impatient drivers, who would take more risks.
- A.17. **Dean Road crossroads – close central reserve.** Many respondents discussed this theme. Most of these respondents felt that this element was a high priority, as they considered it to be a high accident area. Some respondents felt that consideration needed to be taken for non-motorised traffic who needed to cross this area, suggesting a footbridge or underpass. A few respondents discussed the nearby dual carriageway and felt this should be reduced back to a single lane, as the limited distance it covers encourages drivers to pull in at the last moment. A few respondents discussed their opposition to this element. These respondents felt that it would encourage rat running on minor roads as they would not be able to get into Balsham. Some of these respondents highlighted the area is used by heavy goods vehicles who need to access either side of the road and felt this needed to be taken into consideration.
- A.18. **Speed reduction measures – Horseheath to Linton.** Many respondents discussed this theme. These respondents felt this would be a positive move towards reducing both accidents and the severity of accidents in the area. Some of these respondents felt that this speed reduction should cover the entire road, as the changes in speeds along the route was felt to add to safety problems. Some of these respondents felt that alongside the speed reduction more enforcement was needed, either through cameras or police presence, as many drivers were felt to ignore the current limits. A few respondents felt that reducing the speed in the area would not be of benefit, that enforcement was the only beneficial way to improve safety.
- A.19. **Travel safety.** Many respondents felt that the A1307 and connected villages are dangerous routes. Junctions, areas of village or business access were all discussed in relation to this theme. Some of these respondents felt that driver error and impatience were the key factors in accidents in these areas and that mechanical measures would not be effective enough at

reducing accidents, that this road needed more safety enforcement. Respondents who indicated they travelled on foot, by bicycle or by horse, felt that where off-road routes joined or crossed on road were often very dangerous with little in place to protect them.

- A.20. **Cycle paths.** Many respondents felt that the improvements to cycle routes were positive. Some of these respondents felt that the Greenway should carry on towards Haverhill and some felt there should be a cycle path to Granta Park. Some of these respondents discussed the poor maintenance of existing paths and the limited space available on current shared use pathways.
- A.21. **Haverhill Road and the Gog Farm Shop junction safety improvement.** Some respondents felt that these improvements were a positive move to making this area safe for all road users. Some of these respondents felt that they potentially needed to be taken further, through speed reductions, a traffic light system or a roundabout. Some felt that more cost effective measures could be used, such as improving visibility by trimming hedges regularly or a right-turn restrictions on those coming from Haverhill Road and the Gog Farm Shop. A few respondents were concerned about damage to wildlife from roadworks in the area.
- A.22. **Signalise Hildersham crossroads with Toucan/Pegasus crossing.** Some respondents felt that there were some potential issues with this element. It was felt that this could increase congestion along this route, as it would affect traffic flow, and that the dual carriageway leading up to this crossing would require reducing to one lane to avoid drivers approaching it at high speeds. Some respondents felt these issues were acceptable for the benefit of non-motorised traffic being able to safely cross the road and allowing buses and other traffic from Abington to exit on to the A1307 in a timely manner. Some respondents felt that the increase in congestion caused by this element was unacceptable and that the amount of people needing to cross that road was low. A few of these respondents felt that a footbridge or underpass would be a better improvement.
- A.23. **Eastbound bus lane at A11.** Some respondents felt that a bus lane would add to an already congested route and that buses did not travel down this route often enough to make this investment of benefit. Some of these respondents felt that improvements to the roundabout by making the left lane for left hand turns only and improving the signage to encourage users to make use of both lanes to go straight over would be effective for all traffic. A few respondents felt there needed to be improved safety measures for crossing the A1307 to and from Babraham village, as workers at Babraham Research Campus had difficulty crossing this road when using public transport.
- A.24. **Bus lanes.** Some respondents felt that the bus lanes proposed would only add to congestion along these routes, without having a significant benefit on bus journey times. Some of these respondents felt that a bus lane would need to extend to the whole route to be worthwhile. Some of these respondents felt that the bus lanes would have a negative effect on the villages along the route who are not served by current bus services and some felt there would be a negative impact on the environment from their development. Some respondents felt that bus lanes were a positive improvement to public transport. A few of these respondents had concerns about the environmental impact of expanding these lanes. A few respondents felt that the guided bus route needed to be extended further, with particular mention of Granta Park.
- A.25. **Dual carriageway.** Some respondents felt that the dual carriageway needed to be extended, as it was too short in some areas and increased the risk of accidents. These respondents felt it was needed to allow faster moving traffic to bypass the increase in heavy goods vehicles in the area. Some of these respondents felt that drivers should be encouraged to queue in both lanes when congestion builds up. Some of these respondents felt that the dual carriageways

should be removed completely and a flat speed limit introduced along the whole route, which should then be policed. These respondents felt that this would reduce accidents and their severity.

- A.26. **Traffic lights.** Some respondents felt that traffic lights risked affecting traffic flow in the areas they would be installed. They felt that, even if slowly, traffic should be kept moving where possible to reduce car emissions and driver impatience. These respondents felt that existing traffic lights along the route were not responsive to traffic levels, changing at unnecessary times and increasing congestion.
- A.27. **Measures to ease bus movements in Linton.** Some respondents felt that measures to ease bus movements in Linton would risk adversely affecting local residents and businesses. Some of these respondents felt that parking on the High Street was the main issue for all traffic, including those parking illegally and that parking restrictions needed enforcing. Some of the respondents felt that putting further restrictions on parking on High Street would have an adverse effect on those who needed to use it, such as older residents and those with disabilities. A few respondents felt that the introduction of a one way system, that buses could be exempt from, would solve issues in this area.
- A.28. **Westbound bus lanes on approach to B1052.** Some respondents felt that a bus lane here would do little to improve bus times but would increase congestion for other road users. These respondents also felt that too few buses travelled along this route to justify a bus lane and that other measures from this scheme would improve traffic flow enough to make a bus lane unnecessary. Some respondents felt that improving bus journey times with a bus lane was positive but felt that the lane should extend further to be fully effective.
- A.29. **Linton Greenway.** Some respondents felt this would be a positive improvement that would encourage some drivers to switch to non-motorised methods along the route. These respondents felt that it was currently dangerous to cycle along this route. Some of these respondents felt that the Greenway should extend to Haverhill. Some of these respondents felt that it would be important for the Greenway to be segregated for cyclists and pedestrians. A few respondents felt that the Greenway would be underused and funding should be spent elsewhere. A few respondents felt that the routes did not need widening to accommodate the Greenway as there was enough existing space and it would adversely affect the environment along the route.
- A.30. **Cost.** Some respondents felt that the cost of developing these elements was too high for the benefit of too few. Some of these respondents felt that the money should be invested in something longer term with potential benefit to a larger proportion of the population, such as a rail link from Haverhill to Cambridge. Some of these respondents felt that some of the elements should be trialled, such as the right-turn bans, before investing in road development to ensure they were effective. Some respondents felt that funding should be sought from developers in the area, Suffolk and Essex Councils, and businesses that would be benefitting from these developments.
- A.31. **Signalised crossing at the Babraham Research Campus roundabout.** Some respondents felt that, although something was needed to help pedestrians attempting to cross the road, a signalised crossing would increase congestion on the road and may be unsafe due to the poor visibility on the approach to the roundabout. A few of these respondents felt that an underpass would be of more benefit. A few respondents supported this element, highlighting the difficulty for pedestrians and cyclists attempting to cross this road. A few of these respondents felt that the crossing should have sensors to minimise the disruption to road traffic.

- A.32. **Bus service improvements.** Some respondents felt that the improvements to the bus service from this scheme would only be of benefit if the bus service itself was improved. These respondents felt that the bus routes did not service businesses or villages sufficiently, that the times buses ran needed to be expanded and run at times people needed them, and that the ticketing cost needed to be reduced in order to encourage people to use them. Some of these respondents felt that improvements were needed in central Cambridge for bus routes, as this was where they felt the services become inefficient. A few respondents discussed the Bus Services Act 2017 and the possibility of developing a public transport system similar to London.
- A.33. **Alternative modes of public transport.** Some respondents felt that alternative public transport needed to be developed and funded to effectively encourage modal shift away from personal vehicle use. These respondents felt that some form of rail, dedicated bus route or tram link should be created from Haverhill to Cambridge. Some of these respondents discussed reopening the rail link from Haverhill to Cambridge.
- A.34. **Peak-hour eastbound bus lanes on approach to Linton Village College junction and safety improvements at Dalehead Foods junction.** Some respondents felt this element should have been split into two. Some respondents felt that a bus lane here would do little to improve bus times but would increase congestion for other road users. These respondents also felt that too few buses travelled along this route to justify a bus lane. Some respondents felt that improving bus journey times with a bus lane was positive. Some respondents felt that safety improvements at Daleheads Foods were needed.
- A.35. **Multi-user underpass at Wandlebury.** Some respondents felt this was a positive development to allow non-motorised traffic to get across this road. Some respondents felt that too few people would use this underpass to justify the cost. A few respondents were concerned about the safety of underpasses in general, feeling they were crime hotspots.
- A.36. **Linton Village College junction signal upgrade.** Some respondents felt that the signals at Linton Village College were responsible for some of the congestion in the area, as they changed when no one needed to come out. A few of these respondents felt that there should be another way out of the College to avoid this. Some respondents felt that these lights should only be in use during College opening times. A few respondents felt that a roundabout would be more effective and limit the effect on traffic flow.
- A.37. **Equestrian provision.** Some respondents welcomed the inclusion of equestrian provision, as they currently have difficulty accessing existing bridleways. A few respondents questioned this provision and felt this scheme should be aimed at transport methods used for commuting. A few of these respondents had concerns about the provision around Babraham foot bridge/underpass as the route travels through a busy farm. This was felt to be inappropriate and unsafe for horse riders.
- A.38. **Multi-user crossing of A11 via improved footbridge & underpass.** Some respondents supported this element, feeling it would be beneficial to non-motorised traffic needing to cross here and would help motorised traffic on the road by keeping non-motorised traffic off the road. A few of these respondents felt that consideration needed to be made to those using cargo bikes, bike trailers, horses and those with limited mobility. A few respondents felt that alternative routes should be considered, such as the old rail line.
- A.39. **New Park & Ride.** Some respondents felt that a Park & Ride site should be located closer to Haverhill in order to remove some of the traffic travelling through Horseheath and Linton. Some of these respondents highlighted the proposed housing development at Haverhill as one of the reasons they felt this would be a good idea.

- A.40. **The environment.** Some respondents were concerned about the environmental impact of some of the elements of this scheme. Some of these respondents highlighted that Nine Wells and areas near Wandlebury are considered sites of outstanding natural beauty and should be avoided. Some of these respondents discussed concern over the loss of hedges and trees to widen roads for bus lanes, feeling these were environmentally important and needed to screen noise and pollution from the road. Some respondents were concerned that some of the elements could slow traffic so much that they would produce more pollution and felt flowing traffic was important to avoid this. A few respondents indicated that the proposed site for the rural hub was located on a flood plain.
- A.41. **Car as necessity.** A few respondents indicated that car use was necessary for some people, including workers and those with mobility issues. These respondents felt it was important that they were not penalised for using personal vehicles.
- A.42. **Accessibility.** A few respondents discussed some of the accessibility issues they felt some elements had. This included: the safety of underpasses, particularly for women; potential loss of parking on High Street in Linton, which was felt to be needed for those with mobility issues; and the access to the rural hub for pedestrians, cyclists and those with mobility issues from Bartlow, as the road is narrow and steep.
- A.43. **Granham's Road junction – right-turn lane.** A few respondents felt this was not needed because traffic turning right was felt to just be rat runners avoiding traffic and because there is no traffic island at Granham's Road/Babraham junction. Some respondents felt that further improvements were needed in respect to visibility for those turning towards Addenbrooke's and with speed restrictions.
- A.44. **School traffic.** A few respondents felt that school traffic was the cause of some of the current congestion problems and that restrictions should be placed on personal vehicle school transport or a school bus service should be put in place.
- A.45. **Short term.** A few respondents felt that these elements were all short term solutions that wouldn't be effective in the long term with current planned developments.
- A.46. **Bypass.** A few respondents felt that a new bypass should be put in place around Linton.

Phase 2 Themes

- A.47. **Strategy 1.** Many respondents discussed this theme. Some of these respondents felt that strategy 1 was the most thought out of the three strategies and had the best chance of creating modal shift away from personal vehicles. These respondents also felt that this strategy would be the best suited for integration into future transport links, including those to Haverhill. Some of these respondents indicated that they felt the cost of development was high but was worth the cost. A few of these respondents felt that strategies 2 and 3 would only benefit those travelling into Cambridge and would not benefit those commuting back home or to employment sites outside Cambridge. A few of these respondents felt that a cycle route should be included along the route and access should be available to villages. Some respondents were concerned about strategy 1, feeling that the increased cost of development was not worth the small increase in improvements. Some of these respondents were also concerned about the environmental impact this route would have on villages and Green Belt land in the area.
- A.48. **Strategy 2.** Many respondents discussed this theme. Some of these respondents felt that strategy 2 would bring the best cost to benefit ratio and would bring benefits in a shorter space of time. Some respondents felt that the projected passenger traffic was too small to justify the expansion into the Green Belt. Some of these respondents felt that strategy 2

would cause increased congestion on Babraham Road, an area of current high levels of congestion, as drivers would be encouraged to use the Park & Ride site. A few of these respondents felt that strategy 2 would be too short term and not result in lowering congestion enough for the increased development in the area.

- A.49. **Strategy 3.** Some respondents discussed this theme. Some respondents felt that strategy 3 held little benefit, as these respondents felt that bus lanes did not improve journey times enough as there were still interactions with other road users. Some of these respondents were concerned that there was not enough space for the lanes in the proposals without compromising one of lanes or negatively affecting the environment. A few respondents felt that strategy 3 would add to congestion, particularly around Babraham Road and Addenbrooke's Hospital, because of the availability of space. Some respondents felt that this strategy would be of most benefit as it could be implemented quickly and dismantled easily if future developments superseded it, such as autonomous vehicles.
- A.50. **Railway links from Haverhill.** Many respondents felt that having a rail link from Haverhill to Cambridge would reduce much of the motorised traffic currently using the A1307. These respondents felt the railway should link villages along the route and a few respondents felt that it should include a stop at Addenbrooke's Hospital.
- A.51. **Mass rapid transit.** Many respondents discussed this theme. These respondents felt that the mass rapid transport system should take the form of something other than a bus. For some this was a train link while others felt it should be a tram or underground route. As with the respondents who discussed the railway links, many of these respondents felt that the route should go from Haverhill to Cambridge, for some using the old railway link. A few respondents were concerned about the environmental and financial impact of developing a mass rapid transit route.
- A.52. **Haverhill.** Many respondents discussed this theme. These respondents highlighted the planned growth in Haverhill and felt that any route development should include Haverhill. Respondents who indicated they lived in the area felt that public transport underserved the area and needed improving to discourage personal vehicle use. Some of these respondents felt that a cycle path would also encourage modal shift away from personal vehicles.
- A.53. **Bus service improvements.** Many respondents discussed this theme. These respondents felt that current bus services did not run at times or locations that were convenient for passengers, that they did not run often or early/late enough, that it was unreliable, and that the cost of bus fares was prohibitive. These respondents felt that the bus service needed subsidising to attract passengers, with a few respondents discussing the Bus Services Act 2017 and the possibility of developing a public transport system similar to London. Many of these respondents felt that the proposals would fail without improving bus services or offering a cheap and reliable alternative. A few respondents felt that the cost of Park & Ride services should be reduced as well.
- A.54. **Cost of development.** Some respondents discussed this theme. These respondents highlighted concerns they had with the cost of development for each of the strategies. Some respondents felt that the cost was too high for something they felt would only be a solution in the short term. Some respondents felt that the cost for strategy 1 was acceptable for the benefits it could bring. Some respondents did not feel the cost for strategy 1 was worth the benefits.
- A.55. **Public transport links.** Some respondents discussed this theme. These respondents felt that public transport links needed to be available to all areas along the route, including villages and areas of employment such as Granta Park. Some of these respondents felt there should be direct services to Cambridge to ensure fast, reliable journey times.

- A.56. **Short term.** Some respondents discussed this theme. These respondents felt that these strategies would only be short term solutions. These respondents discussed planned developments in areas around the route, particularly in areas outside Cambridgeshire and in places such as Addenbrooke's Hospital, and felt infrastructure developments needed to consider these. Some of these respondents felt that strategy 1 had potential to be future proofed.
- A.57. **Environment.** Some respondents discussed this theme. These respondents were concerned with the environmental impact these developments could have on the surroundings. Gog Magog and Nine Wells were areas of particular concern for some participants, who felt the routes came too close to these areas and felt they should be avoided. Strategy 3 had the fewest respondents concerned with environmental impact, while strategies 1 and 2 had similar levels of concern. Some respondents were concerned about the impact these strategies would have on villages along the route, particularly during construction.
- A.58. **Park & Ride location.** Some respondents discussed this theme. These respondents felt that a Park & Ride site needed to be included closer to Haverhill, as significant traffic came from this location and needed to be encouraged out of personal vehicles earlier. Some respondents felt that a Park & Ride site should be located at the A11 junction for similar reasons.
- A.59. **Modal shift.** Some respondents discussed this theme. These respondents felt that modal shift away from personal vehicles was important. These respondents felt that for public transport to be attractive it needed to be perceptively cheaper and reliable. Some respondents felt that dedicated cycle routes would encourage more people to cycle. Strategy 1 was discussed by some respondents, who felt this would be most effective at achieving modal shift. However some respondents questioned the figures quoted in the documentation, feeling this was overly ambitious. Some respondents felt that any the strategies would achieve modal shift and a few respondents felt that these schemes did not go far enough.

Key Stakeholder Responses (Summary of main points only and in alphabetical order)

A1307 Parishes Forum

- A.60. The forum supports the signal change at Linton Village College, and proposes extending the 50 mph limit from Linton to Haverhill. At Dean Road they propose reducing to one lane westbound and improving visibility. They would like to see bus service improvements and a park and ride site between Horseheath and Haverhill. The rural hub at Linton should be larger.
- A.61. They would like to see public transport (rail or LRT) extended to Haverhill, and a new road and junction with the M11. Overall they felt that GCP is too bus and cycle focussed, and longer term improvements are needed.

Babraham Research Campus

- A.62. BRC support the provision of a crossing at the entrance roundabout, and would like to see a further crossing on the grounds of safety at Babraham High Street.
- A.63. They considered strategy 1 to be the most progressive and forward looking, but considered strategy 2 to serve the campus better due to the distance from strategy 1.

Cambridge Biomedical Campus Travel, Transport & Sustainability Group

- A.64. CBCTTSG support strategy 1, and the phase 1 proposals, particularly the bus priority measures at Linton and the travel hub.

Cambridge Past, Present and Future

- A.65. CPPF oppose all three strategies. Strategies 1 and 2 were strongly opposed, whereas strategy 3 was opposed. They strongly oppose strategy 1 on the grounds of impact on Green Belt and encouraging development outside the Local Plan.
- A.66. They oppose strategies 2 and 3 on the grounds of impact on Wandlebury, and challenge the extent of bus lane. They consider the need for a bus lane east of Wandlebury is not proven. They indicated least opposition to strategy 3, and would support this strategy if the bus lane did not extend beyond Wandlebury. They considered that rail improvements, demand management, and improved cycle facilities would deliver the desired modal shift.
- A.67. They support the proposed Haverhill Road/Gog Farm Shop Junction, the proposed underpass, and the Linton Greenway.

Cambridge University

- A.68. Cambridge University supports strategy 1 as it offers the greatest opportunity for mode shift and offers fast and reliable public transport. However, they consider development of the proposal needs to consider the Western Orbital and South Station, and also needs to address access to Granta Park, management of parking around the Biomedical Campus and infrastructure improvements within the campus.

Camcycle

- A.69. Camcycle wish for high standard cycleways to be provided, with a segregated cycle route. They support additional cycle storage at Babraham Road Park & Ride. Strong support is given to the proposed Linton Greenway, but they would like to see “continental” standards adopted. The underpass at Wandlebury is supported provided the design eliminates blind corners.
- A.70. The toucan crossing at Babraham Research is supported, but would be preferred some distance from the roundabout. The upgrade of the route across the A11 is welcomed, but they consider the bridge to not be wide enough. At Hildersham crossroads they consider a bridge might be more appropriate. They ask for Dean Road junction to not be closed for cycles unless a bridge is provided.
- A.71. Camcycle strongly object to all three public transport strategies. Strategy 1 they feel to have too many unknowns, and to be too far in the future. They object to the new road element of strategy 2, and consider that strategy 3 on the basis of the bus lane occupying road space to the disadvantage of vulnerable road users. They would prefer to route buses via Worts Causeway.

Confederation of Passenger Transport

- A.72. The Confederation supports all the phase 1 elements, especially those that make public transport journeys faster and more reliable. They offer strong, but qualified support for strategy 1 as it offers the potential for high frequency mass public transport. However, their support is tempered by the mass transit proposals being most likely not available for all public service vehicles.

- A.73. Strategy 2 was also strongly supported for increasing public transport usage. Strategy 3 was supported, but it was regarded to be less attractive in public transport terms than the other strategies.
- A.74. The Confederation urged that within the plans for improving public transport routes, coach travel is also given precedence. Coaches should be offered the same precedence as buses. In addition the Confederation would welcome improved provision for coaches to access current and future railway station developments.

Coppice Avenue Residents Association

- A.75. The Association objects to the Strategy 1 proposals. They consider the proposal to be likely to increase traffic on Hinton Way and to impact the amenity of residents from increased noise. Overall they consider the strategy 1 proposals to be over bearing, out of scale, and out of character. Widening the existing A1307 would be preferred.

CTC Cambridge

- A.76. CTC are neutral on the three strategies. However, they suggest that if strategy 1 were adopted the Linton Greenway should be re-routed via the public transport route. They ask for priority for cyclists at the Gog Farm Shop junction, and do not support the proposed underpass as they consider the money would be better spent elsewhere. They do not support the upgrading of the existing A11 footbridge on the grounds of width, and that a new bridge on a different line would provide better access.
- A.77. Improvement of Hildersham crossroads is strongly supported as is signalisation of Linton High Street. A roundabout at Bartlow Road is supported as long as there is adequate provision for cyclists. Dean Road and speed management between Linton and Horseheath is supported as long as cyclists are provided for.

Granta Park

- A.78. Granta Park support strategy 1, and all the interventions in phase 1.

Great Abington Parish Council

- A.79. The parish council strongly supports all the phase 1 proposals with the exception of signalising Linton High Street with a right turn ban except for buses, which they oppose. While supporting the eastbound bus lane at the A11, they suggest this should be peak hours only.
- A.80. The parish council strongly supports strategy 1, less support for strategy 2 and opposes strategy 3. An alternative route for the Linton Greenway through the Abingtons is proposed.

Hinxton Parish Council

- A.81. Hinxton parish council supports strategy 1 provided the A505 is dualled. They also request that GCP presses for M11 junction 9 to become all movement.

Horseheath Parish Council

- A.82. Horseheath parish council strongly opposes closing Dean Road junction as it will increase traffic through Horseheath. They suggest reducing the A1307 to one lane in each direction between Linton and Horseheath and reduce the speed limit to 50mph. They support part time signals at Linton High Street, but not a right turn ban.
- A.83. The parish council supports a Park & Ride at the A11, but also considers one should be provided at Haverhill. In the long term they would like to see a new road to the M11, and consider that rail based public transport is better.

Linton Parish Council

- A.84. Linton parish council supported the phase 1 interventions in general, but oppose the bus lanes in both directions at Linton. They support signalisation of the High Street junction, but note very strong opposition within the village to the right turn ban except for buses. They strongly support the travel hub proposal, but would like to see a Park & Ride site at Haverhill considered.
- A.85. In terms of the three strategies none were considered to be a definitive solution, with strategy 3 being considered the least damaging to the environment. Rail alternatives were preferred to strategy 1.

Little Abington Parish Council

- A.86. Little Abington parish council support the concepts of Strategy 1 and all measures that would improve traffic flow and safety on the A1307. They propose a speed limit reduction to 30 mph at Little Abington.
- A.87. They do not support any options that would see a Park & Ride site at Abington, and suggest reconsideration of locating Park & Ride east of Linton.
- A.88. They strongly support the Linton Greenway elements, but have suggested improvements. They also strongly support cycle improvements on Newmarket Road to connect to Granta Park. They oppose the eastbound bus lane at the A11.

Magog Trust

- A.89. The Magog Trust oppose the three strategies in similar terms to CPPF, and object to bus lanes extending east of Wandlebury. They would support a shorter bus lane. They support in principle an underpass at Wandlebury provide there is a net bio-diversity gain.

Sawston Parish Council

- A.90. Sawston parish council made no comment regarding the three strategies but support the changes between Addenbrooke's roundabout and Fourwentways including the Babraham village junction with the A1307.

Smarter Cambridge Transport

- A.91. Smarter Cambridge Transport supports most of the short-term measures proposed, but believes that these alone are inadequate to address the urgent transport needs of the Biomedical Campus.
- A.92. Smarter Cambridge Transport does not support any of the three long-term strategies proposed. They accept the need to increase transport capacity between Cambridge and Haverhill, but want to see a fair and realistic comparison of the three mass transit options: heavy rail, light rail and bus rapid transit.
- A.93. Strategies 2 and 3 do not in their opinion provide sufficient long-term benefit to warrant the environmental damage their construction will cause.
- A.94. Smarter Cambridge Transport supports the phase 1 proposals with the exception of the Haverhill Road/Gog farm shop junction and underpass as being over-engineered. They propose signalisation as an alternative.
- A.95. Strategy 3 would be the most acceptable if road widening was avoided as much as possible. They suggest an alternative strategy 3a with inbound flow control and reduced speed limits, and using Worts Causeway for buses. A wider strategy of encouraging the use of rail to access Cambridge is advocated. Stations at Hinxtton and Cherry Hinton are suggested.

Trumpington Residents' Association

- A.96. TRA strongly support strategy 1 but are concerned over current availability of detail and potential environmental impact. They strongly support the interventions on the A1307 between Addenbrooke's and Wandlebury.

Welcome Genome Campus

- A.97. The sustainable transport measures being proposed, such as bus priority, road safety and walking cycling improvements, are welcomed.
- A.98. Of particular interest to the WGC is the potential new Park & Ride site and associated improved connections to Cambridge in association with phase 2. Strategy 1 utilises the disused railway and brings the corridor relatively close to the WGC, providing more opportunity to provide a sustainable transport connection between the new Park & Ride and the WGC.

West Wickham Parish Council

- A.99. The West Wickham parish council supports the short term proposals for transport and safety improvements along the A1307, but opposes the closure of the central reserve at Dean Road.
- A.100. The Parish Council also supports strategy 1, to provide a Mass Rapid Transport route from a new Park & Ride facility at the A11/A505 Junction to the Cambridge Biomedical Campus via Sawston.

Wildlife Trust

- A.101. The Wildlife Trust is supportive of measures to increase use of public transport and cycling, but not be at the expense of the natural environment.
- A.102. The Wildlife Trust objects to strategy 1 due to the current lack of information provided and the potential for loss of the Shelford-Haverhill Disused Railway (Pampisford) CWS.
- A.103. Both Phases will need to demonstrate that they will avoid adverse impacts on nearby sites important for nature conservation, particularly Wandlebury Country Park, Magog Hills and Nine Wells. Schemes should also demonstrate that they can deliver a net gain in biodiversity, in line with National Planning Policy.

Appendix B – Business Case

Policy and Strategic Context

Context

- B.1. The strategic case for interventions in the study area is based on the analysis of the existing network performance, stakeholder feedback, the form and function of the local economy and the growth aspirations of the area south east of Cambridge including the three campuses and in particular CBC.

Transport Context

- B.2. The study area and routes within it suffer from congestion at peak times, such as the A1307, A1301, A505 and A11. There is also traffic re-routing onto less suitable local roads to avoid these congestion points on the road network. The effects of congestion also impact on the reliability of bus journey times which reduces the attractiveness of bus travel to support the modal shift which is needed to offer traffic relief to the A1307 and A1301 corridors.
- B.3. Cycle and walking provision are often not joined up and there are key points of severance such as limited opportunities for crossing the A11. Future committed and aspirational growth in housing and jobs within this part of South Cambridgeshire and across the borders in Essex and Suffolk is likely to increase congestion and reduce accessibility by non-car modes unless a strategic intervention is put in place.
- B.4. Air quality and congestion in central Cambridge means more opportunities for non-car travel are needed to enable people to reduce car dependence for travel into Cambridge.

Economy Context

- B.5. The strong economic and population growth across the region places increasing demands on the existing transport infrastructure and housing supply. Rising congestion and increasing journey times threatens further economic growth. These constraints also negatively impact on the study area as a place to live and work.
- B.6. The evidence shows that individually and collectively the study area is important to the Greater Cambridge region. This successful location is well placed to continue to grow if the key challenges of increased pressure on transport infrastructure, demand for local housing and access to jobs and services can be addressed. However, future committed and aspirational growth in housing and jobs within this part of South Cambridgeshire and across the borders in Essex and Suffolk will increase congestion and reduce accessibility by non-car modes
- B.7. There are important economic assets (such as the Three Campuses, Communities along the A1301, Cambridge City and workers living in the area) identified in the study area. The analysis of the influence of the existing transport network and the intrinsic economic assets of the study area provides the evidence that transport investment could help address existing transport issues, trigger positive changes to the economic connectivity and help unlock local access to cater for growth.

Statutory Context

- B.8. The project has been developed to address issues of inclusivity by enhancing access for all users and improving accessibility of key facilities such as schools, workplaces and recreational facilities to assist with improving population health and quality of life.

- B.9. The proposed multi-user routes and Greenways in phase 1 are designed to be fully inclusive, designed with accessible ramps and gradients, with appropriate handrails and tactile paving on approach routes and legibility as well as good overlooking for personal security (or CCTV on secluded routes). Improved crossing facilities with either full segregation from traffic where possible or signalisation will also assist those with restricted mobility and enable safer access to new routes and bus services on A1307.

Policy Context

National Planning Policy Framework 2012 & National Planning Practice Guidance 2014

- B.10. The National Planning Policy Framework (NPPF) was published in March 2012 and sets out the Government's economic, environmental and social planning policies for England. It provides within a single document the greater part of national policy advice, and sets out the Government's vision for delivering sustainable development. The NPPG supports this with more detailed guidance on each topic considered within the NPPF.
- B.11. The framework introduces a presumption in favour of sustainable development, and lists transport policy objectives as being to:
- "facilitate sustainable development and its contribution to wider sustainability and health objectives" (para 29);
 - "support reductions in greenhouse gas emissions and congestion, and support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport" (para 30); and
 - "develop strategies for the provision of viable infrastructure necessary to support sustainable development" (para 31).
- B.12. The NPPF states that all developments that generate significant amounts of movement should take account of:
- Prioritising opportunities for encouraging the use of sustainable transport modes depending on the nature and location of the site, to reduce the need for major transport infrastructure;
 - Safe and suitable access can be achieved for all users; and
 - Improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.
- B.13. The NPPF notes that developments should be located and designed where practical to, amongst others:
- Give priority to pedestrians and cycle movements, and have access to high quality transport initiatives;
 - Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians; and
 - Incorporate facilities for charging plug-in and other ultra-low emission vehicles.
- B.14. Minimising journey lengths is a key policy aim set out in the NPPF and NPPG, and it notes that, for large scale developments, this helps to maximise non-car access. This includes locating key facilities such as schools, shops and jobs within accessible distance of most properties.

- B.15. With regards to accessibility the NPPF states that local planning authorities should take account of:
- The availability of and opportunities for public transport;
 - Local car ownership levels; and
 - An overall need to reduce the use of high-emission vehicles.
- B.16. The proposals seek to align with the NPPF by promoting the use of non-car modes of transport by offering improved accessibility and infrastructure which encourages public transport operators to operate more efficiently and effectively and supporting the growth in use of low emission vehicles to minimise air quality effects.

Cambridgeshire Local Transport Plan (2011-2026)

- B.17. The Cambridgeshire Local Transport Plan sets out Cambridgeshire County Council's plans and policies for the future of transport in Cambridgeshire. The current plan was adopted in 2011 and further updated in 2014 and it covers the 20 year period up to 2031. The overarching vision of the plan is to create communities where people want to live and work, now and in the future.
- B.18. The strategic objectives of the plan are to:
- Enable people to thrive, achieve their potential and improve quality of life;
 - Supporting and protecting vulnerable people;
 - Managing and delivering the growth and development of sustainable communities;
 - Promoting improved skills levels and economic prosperity across the county, helping people into jobs and encouraging enterprise; and
 - Meeting the challenges of climate change and enhancing the natural environment.
- B.19. These objectives have been translated into a series of challenges for transport, which the strategy aims to address. These are:
- Improving the reliability of journey times by managing demand for road space, where appropriate and maximising the capacity and efficiency of the existing network;
 - Reducing the length of the commute and the need to travel by private car;
 - Making sustainable modes of transport a viable and attractive alternative to the private car;
 - Future-proofing our maintenance strategy and new transport infrastructure to cope with the effects of climate change;
 - Ensuring people, especially those at risk of social exclusion, can access the services they need within reasonable time, cost and effort wherever they live in the country;
 - Addressing the main causes of road accidents in Cambridgeshire;
 - Protecting and enhancing the natural environment by minimising the environmental impact of transport; and
 - Influencing national and local decisions on land-use and transport planning that impact on routes through Cambridgeshire.
- B.20. The scheme proposals accord with the County Council's key priorities listed above.

South Cambridgeshire Proposed Submission Local Plan, 2013

- B.21. The South Cambridgeshire Local Plan was submitted to Secretary of State for Communities and Local Government for inspection in March 2014. The Local Plan is under examination and not yet formally adopted. This plan covers the 20 year period from 2011 to 2031.
- B.22. The plan aims to “to maximise potential for journeys to be undertaken by sustainable modes of transport including walking, cycling, bus and train.” The plan therefore has a presumption in favour of sustainable development.
- B.23. The proposed submission Local Plan included the following relevant policies regarding transport:
- Policy TI/2 Planning for Sustainable Travel
Development must be located and designed to reduce the need to travel, particularly by car, and promote sustainable travel appropriate to its location; and

Planning permission will only be granted for development likely to give rise to increased travel demands, where the site has (or will attain) sufficient integration and accessibility by walking, cycling or public and community transport.
 - Policy TI/3 Parking Provision
 - Policy TI/8 Infrastructure and New Developments
Planning permission will only be granted for proposals that have made suitable arrangements for the improvement or provision of infrastructure necessary to make the scheme acceptable in planning terms. The nature, scale and phasing of any planning obligations and/or Community Infrastructure Levy (CIL) contributions sought will be related to the form of the development and its potential impact upon the surrounding area; and

Contributions may also be required towards the future maintenance and upkeep of facilities either in the form of initial support or in perpetuity in accordance with Government guidance.

Transport Strategy for Cambridge and South Cambridgeshire (TSCSC)

- B.24. The Transport Strategy for Cambridge and South Cambridgeshire was adopted by Cambridgeshire County Council in March 2014 and it ensures that both districts work together to plan for sustainable growth and continued economic prosperity. The plan provides a detailed policy framework and a programme for transport schemes across both districts aimed at addressing current problems.
- B.25. The overall vision is to create a sustainable, efficient and accessible transport system to support Cambridge City, major employment hubs, villages and key centres. In doing so the plan covers all modes of transport and takes account of forecast employment and housing growth up to 2031. This includes Local Plan growth at key campuses along the A1307.
- B.26. The scheme is consistent with the Cambridgeshire Local Transport Plan 2011-26 and it supports both Cambridge and South Cambridgeshire Local Plans.
- B.27. The plan contains a number of specific policies which are relevant to the corridor. These are:
- Policy TSCSC 3: Catering for travel demand in South Cambridgeshire
This policy states that as existing transport networks from South Cambridgeshire into Cambridge are constrained, passenger transport services on main radial corridors will be used for part or all of more trips to Cambridge and to other key destinations. It also

states that more people will walk and cycle to access services and that more people will car share.

- Policy TSCSC 4: National networks: trunk roads, motorways and rail
National improvements to strategic transport infrastructure must take account of local circumstances, opportunities and impacts e.g. changes to national important road and rail routes.
- Policy TSCSC 7: Supporting sustainable growth
Changes to the transport network should support sustainable travel modes.
- Policy TSCSC 12: Encouraging cycling and walking
This policy states that all new developments must provide safe and convenient pedestrian and cycle improvements.

- B.28. The proposals fit well with the above listed TSCSC policies in particular they support mode shift to more sustainable forms of transport, for example, by providing new and improved infrastructure for pedestrians and cyclists such as the Linton Greenway and Multi-user crossings.
- B.29. The phase 1 measures also enhance safety and convenience with new crossing facilities to address severance issues along the route. The underpass at Wandlebury will assist users to access cycle routes and Wandlebury Country Park and A11 crossing enhancements will offer safer routes away from traffic.
- B.30. Public transport improvements and improved Park and Ride facilities will enable modal shift even for those who do not live within easy reach of a frequent bus service.

Cambridgeshire Long Term Transport Strategy (LTTTS) 2011-2031

- B.31. The Long Term Strategy (LTTTS) was adopted in July 2015. It was developed by the County Council in close collaboration with district and neighbouring authorities, and forms part of the aforementioned Local Transport Plan.
- B.32. The purpose of the LTTTS is to provide additional detail on future major transport schemes needed to support Cambridgeshire's ambitious growth plans up to 2031.
- B.33. The objectives of the strategy are to (i) ensure that the transport network supports sustainable growth and continued economic prosperity; (ii) improve accessibility to employment and key services; (iii) encourage sustainable alternatives to the private car, including rail, bus, guided bus, walking and cycling, car sharing and low emission vehicles; (iv) encourage healthy and active travel, supporting improved well-being; (v) make the most efficient use of the transport network; (vi) reduce the need to travel; (vii) minimise the impact of transport on the environment; and (viii) prioritise investment where it can have the greatest impact.
- B.34. The aspects of the strategy most relevant to the South east of Cambridge are the following:
- Expanding rail capacity and creating new stations (e.g. Cambridge south station)
 - Wider pedestrian / cycle network improvements to provide a comprehensive network of high quality pedestrian / cycle routes linking the town with key destinations in Cambridge and the surrounding villages
- B.35. The Long Term Strategy Seeks to enhance the bus/guided bus network which forms a major part of the strategy to achieve a high quality network:
- Extend the busway network to serve major new developments and employment sites.

- Develop high quality public transport corridors along key routes with priority at key junctions, helping to reduce journey times.
 - Implement new and improved passenger transport interchanges and hubs with parking, cycle parking, high quality waiting facilities, passenger information and facilities for local feeder services, and that are easily accessible by pedestrians and cyclists.
- B.36. The Cambridge Autonomous Metro proposals which form part of Strategy 1 contribute towards delivering the extended network envisaged within the LTTS. The inclusion of transport hubs and P&R sites along the route is also a principle within Strategy 1 and Phase 1 (at Linton) which accords well with the policy.

Cambridgeshire Green Infrastructure Strategy (2011)

- B.37. The Cambridgeshire Green Infrastructure Strategy sets out to encourage a consistent approach amongst planners for the provision of Green infrastructure within Cambridgeshire. The Strategy outlines the benefits that provision of green infrastructure can have as well as identifying the opportunities within set target areas to inform future development.
- B.38. The strategy specifically highlights the current Target Area 6.3 – Cambridge.
- B.39. In respect to transport, the strategy sets out the following opportunities to inform future project development.
- Green Infrastructure Gateways: the growth areas provide opportunities for enhanced linkages between the City, the surrounding countryside, the navigable river and Green Infrastructure sites.
 - Publicly Accessible Open Space: the provision of open space and linkages to the strategic Green Infrastructure Network and Public Rights of Way forms one of the key elements of the growth agenda for Cambridge. Significant levels of high quality open space are required by planning policies. These open spaces must link well with the surrounding built-up area.
 - Rights of Way: by ensuring that all communities have access to sustainable modes of movement and enhanced links to the wider countryside as required by the plans for the major developments to provide for countryside recreation.
- B.40. The new Linton Greenway which forms part of strategy 1 is a key new green infrastructure link crossing the A11 safely and providing access between villages and workplaces. In the later phase, the multi-user route to be provided along with the mass transit route will also offer part of a new Sawston Greenway and will also be connected to the research campuses along the route. There is an opportunity for the former disused railway to form a new linear park with enhanced ecology and improved connectivity between the Nine Wells Nature reserve at the west end of the route and the CWS at the eastern end of the route close to the A11. This will extend the public rights of way network and enhance access to the countryside and opportunities for recreation and healthier lifestyles.

Air Quality Management Plans

- B.41. Like many other urban areas, Cambridge has an air quality problem. Air quality is monitored in Cambridge through the Local Air Quality Management process, known as LAQM. Due to excessively high levels of NO₂ (Nitrogen dioxide, which is primarily traffic related) in central Cambridge an Air Quality Management Area (AQMA) was declared in 2004. The purpose of the Air Quality Management Area is to establish an area where air quality must be improved

and start the process of working towards these improvements to bring levels of pollutants below the National Air Quality Objectives.

- B.42. Nitrogen dioxide is routinely monitored across the city and like most cities, the high levels are caused primarily (but not solely) from traffic pollution. The areas of the city most severely affected by air pollution, with high levels of nitrogen dioxide are:
- the area around the bus station
 - the trafficked parts of the historic core
 - the inner ring road
 - junctions with the inner ring road
 - main radial routes into the city
- B.43. An Air Quality Action Plan is in place seeking to reduce levels of NO₂ within the AQMA, There are two main reasons for transport related pollution in Cambridgeshire; these are the importance of Cambridge as an employment, education and tourist centre, and the prevalence of long-distance freight on the A14 east-west corridor.
- B.44. The Air Quality Action Plan is integrated into the local transport plan so that the issues can be addressed together.
- B.45. The consequent Air Quality Action Plan was integrated into the Cambridgeshire County Council's Local Transport Plan Two (2006 - 2011), LTP2, which was published in 2006. It included:
- Expansion of the Core Area traffic road closure programme to further limit access to the city centre
 - Development of a low emission zone in the historic city centre by setting minimum emission standards for buses and taxis
 - A 20 mph speed limit in parts of the city centre
 - Regulation of goods vehicles
- B.46. Other measures proposed for the Air Quality Action Plan included:
- A pro-active stance on land-use planning in relation to air quality and a requirement for Air Quality Assessment for new developments
 - Continued limitation of parking in the Core Area by our adopted car parking standards
 - Full implementation of our Cycling And Walking Strategy
- B.47. Minimum emissions standards have been agreed with bus operators, through the Quality Bus Partnership and taxis continue to be less than 8 years old and a 20 mph zone has been implemented in the city centre.
- B.48. The Air Quality Action Plan was updated in 2009 and integrated with the Action Plan for South Cambridgeshire District Council, working with Cambridgeshire County Council to produce the Air Quality Action Plan for the Cambridgeshire Growth Areas.
- B.49. The Third Local Transport Plan (LTP3) covers the period 2011 – 2026. The preferred strategy for LTP3 focuses on reducing the need to travel while improving accessibility, encouraging the use of environmentally sustainable modes of travel, and reducing reliance on the private car.
- B.50. The main themes in the revised Air Quality Action Plan 2015 – 25 will include:

- Continuing to improve emissions from the vehicles being driven around Cambridge;
- Continuing to improve access to public transport across the city;
- Promoting smarter travel choices;
- Lowering emissions from buildings;
- Managing emissions from new developments within the city through the planning process.

B.51. To continue to achieve improvements to air quality in central Cambridge and beyond, emissions from all vehicles entering the city will need to be significantly reduced. This is dependent on vehicle manufacturers making further improvements to the emissions from vehicles alongside continued restraint on traffic entering the city and through an accelerated shift to lower emission vehicles.

Overall Policy Fit

B.52. The proposals accord well with the above transport, planning and air quality policy objectives, encouraging increased shift to non-car travel and supporting healthier and active journeys by walking and cycling within the South East of Cambridge. Reduction in KSI at road junctions will also improve population health.

B.53. The Phase 1 measures also support this with safety and bus priority measures as well as new Greenways and enhanced crossing facilities without encouraging increased traffic into central Cambridge. The new routes created will increase non-motorised user access to the countryside and increase healthy lifestyles.

Greater Cambridge Partnership Objectives

B.54. The Cambridge South East Transport Study is being led by the Greater Cambridge Partnership (GCP), a local delivery body for the Cambridge City Deal, worth £1 billion over 15 years. The City Deal will deliver vital improvements in infrastructure, supporting and accelerating the creation of 44,000 new jobs, 33,500 new homes and 420 apprenticeships.

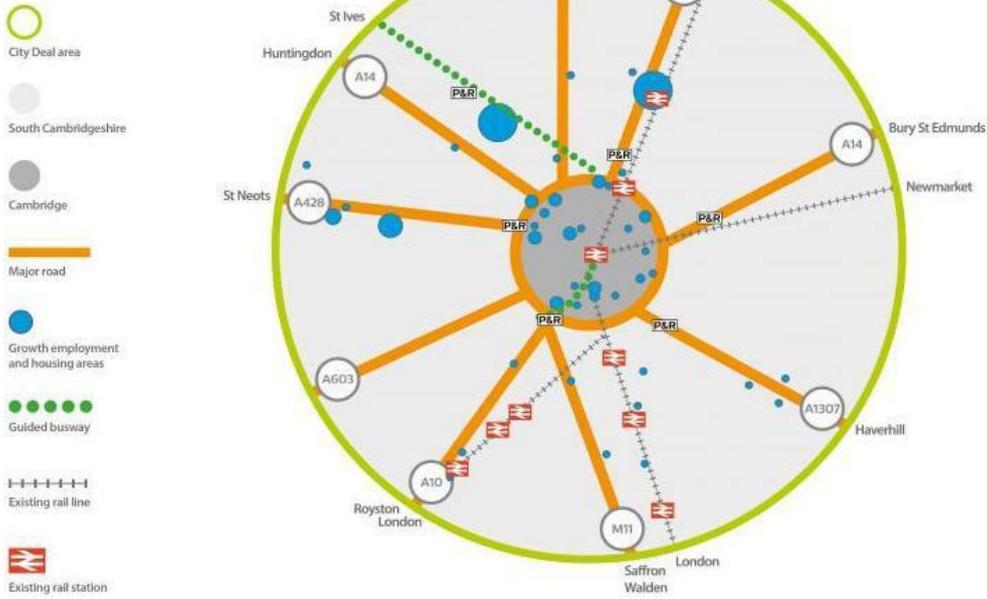
B.55. The Greater Cambridge Partnership (GCP) has the following transport vision:

“Creating better and greener transport networks, connecting people to homes, jobs, study and opportunity.”

B.56. The GCP aims to develop a sustainable transport network for Greater Cambridge that keeps people, business and ideas connected, as the area continues to grow; to make it easy to get into, out of, and around Cambridge by public transport, by bike and on foot. Through a range of projects, it will create a transport network fit for a small, compact city served by a growing network of rural towns and villages.

B.57. As shown below this includes the A1307 corridor from Haverhill to Cambridge in the south east quadrant and the research campuses are highlighted as growth locations along the route.

Transport Links



The Greater Cambridge Partnership Future Investment Strategy is the overarching view of the growth and development delivery for 2020 and beyond. It covers the Greater Cambridge Network until 2050, which envisions a Rapid Transit route between Cambridge and Haverhill via Babraham Research Campus and Granta Park – the route assessed in this South East Transport Study. The Greater Cambridge Network 2050 is shown below:



- B.58. The Greater Cambridge Partnership transport objectives are as follows:
- Ease congestion and prioritise greener and active travel, making it easier for people to travel by bus, rail, cycle or on foot to improve average journey time (4.87 minutes per mile in the peak hour in 2015/6)
 - Keep the Greater Cambridge area well connected to the regional and national transport network, opening up opportunities by working closely with strategic partners
 - Reallocate limited road space in the city centre and invest public transport (including Park & Ride) to make bus travel quicker and more reliable
 - Build an extensive network of new cycle-ways, directly connecting people to homes, jobs, study and opportunity, across the city and neighbouring villages
 - Help make people's journeys and lives easier by making use of research and investing in cutting-edge technology
 - Connect Cambridge with strategically important towns and cities by improving our rail stations, supporting the creation of new ones and financing new rail links
- B.59. This firmly demonstrates that there is a commitment in place to deliver new sustainable transport infrastructure in order to support the anticipated housing and job growth in the study area. It is also expected that the central government investment via the City Deal towards new transport infrastructure is likely to stimulate further economic investment and growth.
- B.60. Given the study area location on the south eastern edge of Cambridge and proximity to the county boundary, the project has also considered the adopted and emerging local policies applicable to neighbouring authorities including St Edmundsbury Borough Council, Braintree District Council & Uttlesford District Council.
- B.61. For example the solutions proposed support significant housing growth (c4260 dwellings) at Haverhill in the eastern edge of the study area. This accords with the adopted St Edmundsbury Local Plan Vision document which sets out the future growth trajectory to 2031. The SEBC Local Plan recognises the proximity of Cambridge as a key driver for housing growth in Haverhill.
- B.62. The growth forecasts within the emerging Local Plans for Braintree District and Uttlesford also include significant housing growth in commuting distance of Cambridge. The UDC emerging Local Plan in particular highlights an opportunity for new settlement close to Great Chesterford (referred to as Uttlesford New Garden Community) this includes housing growth of up to 4600 new homes in the longer term, although only about 1900 of these would be delivered before 2031. Braintree DC have also provided draft allocations for 10740 homes and jobs in 7350 jobs to 2031. These substantial housing growth areas on the edge of the study area are likely to further increase travel demand in the A1307 corridor in the future which has been taken into account within the traffic modelling work that has informed the selection of options taken forward for consultation. The modelling undertaken in summer 2017 which informed the strategy development takes into account the following extra external growth within neighbouring Districts on the south east edge of the study area:
- 14,100 dwellings in Uttlesford Emerging Local Plan (including 4600 dwellings in a new settlement option at Great Chesterford).
 - 9,000 jobs at Stansted Airport and 900 elsewhere in Uttlesford (2017-2033)
 - Braintree Draft Local Plan 2016 716dpa and 490jpa = 10,740HH+7350jobs

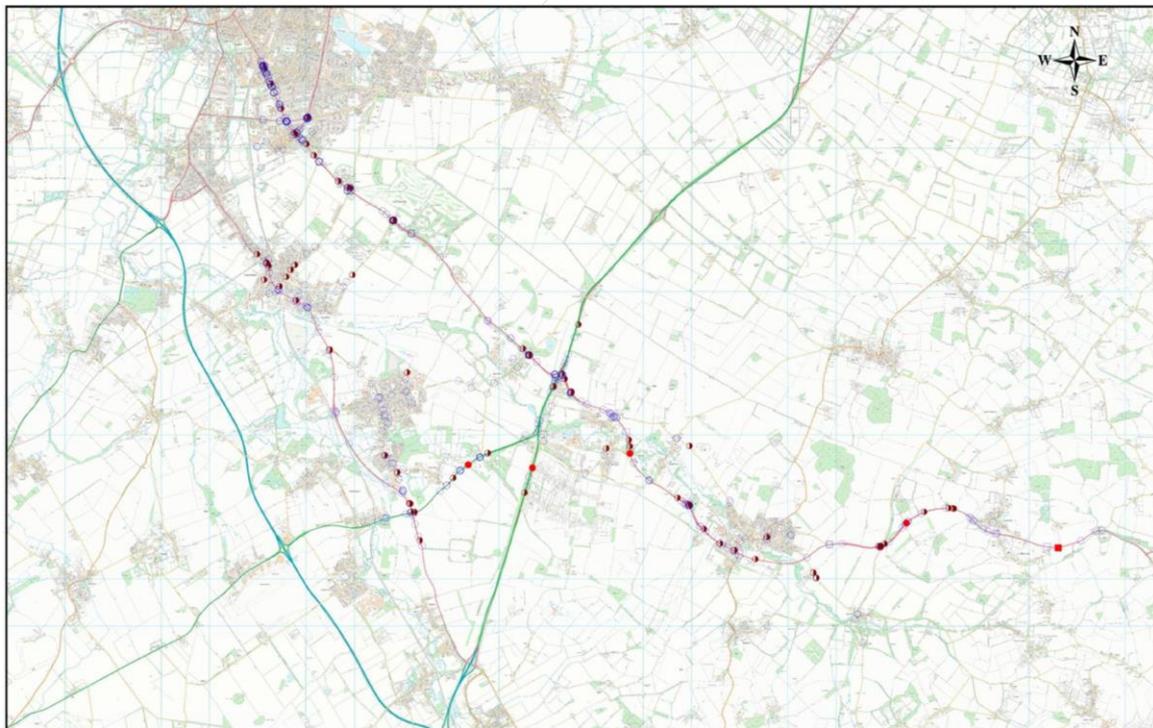
- Suffolk SPIF Growth – up to 50,000 HH by 2050 (of which 10,000 could be in place by 2031)
- 304 extra dwellings at Linton – 84 under construction and 224 at potential appeal sites

Problems Identified

- B.63. The A1307 and A1301 corridors are key radial routes into central Cambridge capturing local traffic from villages along the routes (such as Horseheath, Linton, The Abington's, Sawston, Great Shelford and Stapleford) as well as strategic traffic using A11 and A505.
- B.64. As house prices rise in response to economic success of Cambridge, the A1307 is receiving increased pressure from commuting traffic at peak times as it offers direct access to affordable housing areas to the east of the City such as Haverhill which are essential for example enabling key workers at the Biomedical Campus to live relatively close to Cambridge.
- B.65. A key benefit of the scheme is expected to be road safety improvement and accident reduction, with the first phase of interventions proposed to address accident clusters and severance issues, as well as increased choice of travel options in the longer term with the strategy 1 proposals to provide a mass transit route and parallel Greenway.

Road Safety Issues

- B.66. The A1307 is considered to have a relatively poor accident track record with some sections of the route signed as 'High Casualty' areas. There are also short sections of dual carriageway along the A1307 route which tend to lead to dangerous driver behaviour and speed-related accidents where drivers attempt to overtake slower vehicles and often take unnecessary risks seeking to improve their journey times.
- B.67. The figure below shows the location of the accidents within the study area, red indicating fatal, half full circles indicating serious, and circles indicating slight accidents.



Congestion & Delays

- B.68. Delays are prevalent in the westbound direction towards Cambridge in the AM peak, although there are also pinch points where eastbound PM peak delays occur for example on approach to Linton Village College traffic signals and the A11 roundabout.
- B.69. On weekdays in the AM peak, vehicle speeds were lowest on inbound sections especially north of Cherry Hinton Road and on High Street Linton. In the PM peak, outbound speeds tended to be lowest on High Street, Babraham and Pampisford Road.
- B.70. On weekends, vehicle speeds were generally higher on inbound and outbound links than on weekdays. This suggests that delays are linked to commuting trips by people working in Cambridge. The majority of links experience at least a 3 mph reduction on weekdays, with AM peak inbound up to 17 mph slower on weekdays and on average all inbound links in the AM peak are 10 mph slower on weekdays.
- B.71. This suggests that commuting and business journeys occurring in the AM peak hour travelling towards Cambridge are likely to experience on average a 23% increase in comparison with weekend free flow travel and up to 15% increase in the eastbound direction during the PM peak.
- B.72. Due to the rural nature of the study area and Greenbelt areas surrounding Cambridge City, residents need to travel significant distances to access jobs, schools and retail facilities on a daily basis. However there are relatively few options for non-car travel in this part of the South Cambridgeshire District, with Park & Ride or traditional bus services offering the main alternatives to car travel.
- B.73. Public feedback from earlier stages of public consultation in summer 2016, indicates that the existing bus services are unattractive due to uncompetitive journey times and bus fares which are considered to be expensive. Many services, especially Park & Ride do not operate at convenient times of day (particular for shift works at the CBC campus) or are not sufficiently frequent in the evenings there is very little bus priority on the routes so buses suffer delays and poor reliability.
- B.74. The phase 1 scheme includes sections of bus lanes around Linton (westbound on approach to the B1052 junction and eastbound on approach to Linton Village College) and to the north of Babraham village on approach to A11. Phase 2 proposals seek to offer enhanced priority to public transport services and new mass transit options which would offer a more reliable and faster journey time to Cambridge, coupled with increased Park & Ride capacity to achieve the extent of mode shift required to address the GCP objectives and support the City Access proposals.

Emergency Response Times – Ambulances/Fire & Rescue

- B.75. Emergency response times across Cambridgeshire have been and are predicted to continue increasing, which is in part attributable to delays on roads and traffic congestion. Improvements to transport links south east of Cambridge are likely to have a positive effect on emergency response times. Access to Addenbrooke's hospital located in the southeast of Cambridge could be improved noticeably through transport network improvements.
- B.76. Fire and Rescue incident response times in Cambridgeshire are currently over 11 minutes for road vehicle fires and over 10.5 for primary fires.
- B.77. Ambulance response times are among the longest in the East. The median ambulance response time in the postcode area of CB21 is over 12 minutes and only approximately 25% of life threatening calls are responded to within 8 minutes.

- B.78. The phase 1 and strategy 1 proposals could contribute towards improving emergency response times either by reducing the volume of traffic on A1307, providing sections of bus lanes which could also be used by emergency vehicles and also the highway safety improvements proposed would also reduce the vulnerability of the A1307 to potential accident risk so disruption would occur less often. The strategy 1 mass transit route could also be potentially used infrequently by emergency services vehicles and this is well connected to the CBC campus and Addenbrooke's Hospital.
- B.79. There is also a local Fire station in Linton which could benefit from the phase 1 works for example the proposed new roundabout at Bartlow Road for ease of access to the A1307 and bus lanes around Linton enabling fire apparatus to bypass congestion at peak times in addition to bus services.

Need for the Scheme

- B.80. The Local Plans for Cambridge and South Cambridgeshire estimate more than 44,000 additional jobs will have been created in the area by 2031, and local science and research parks in the area have aspirations for continued growth. Plans for the area between South Cambridge, Haverhill and Great Chesterford suggest up to 8,000 new homes could potentially be built over the next 15 years, with scope for future growth.
- B.81. Parts of the road network are already at capacity at peak-times, impacting on people's day-to-day lives, the ability of businesses to operate effectively and contributing to pollution. If no action is taken to deal with the estimated growth sustainably, journey times are predicted to increase by around 50%. The poorer operation of the roads is likely to worsen accident clusters, which could lead to an increased number of fatalities on high speed sections.
- B.82. The investment in infrastructure such as bus lanes and busway options, is essential to secure reliable journey times and frequent services leading to mode shift. Given the context of the surrounding area Park and Ride is also an essential part of the strategies as this makes bus services accessible from a much wider catchment and enables traffic relief to the highway network. A site location close to the A11/A505 appears to offer an effective catchment which is able to attract a wider demand and minimises impacts downstream junctions on A1307 west of A11.
- B.83. The strategy 1 option also provides relief to the A1301 corridor as this has an enhanced catchment with the proposed alignment alongside key villages, placing many more residents and workplaces in walking and cycling distance of the scheme. Similar to the northern busway this is expected to cater for housing growth and further stimulate investment in the area by enhancing accessibility.
- B.84. Investment in bus-based infrastructure is also likely to be the most cost effective approach and is immediately compatible with the existing transport system in Cambridge as well as offering the flexibility of on-road and off-road travel. The connectivity with the CBC is essential to support economic growth and connect housing to the south and east of Cambridge with jobs, this also assists with providing streamlined journey times to the City.
- B.85. Three transport strategies have been identified which all offer good benefits to residents and workers within the study area and improved local access. They also provide an improved opportunity for travel by non-car modes which helps take pressure off the road network at peak times and provides improved journeys across the whole day to key destinations, such as key worker shift patterns at Addenbrooke's Hospital and access across the route for retail and services.

- B.86. The three strategies will improve local access and reduce car travel across the study area and on key routes. They will overcome constraints on the local transport network, improve safety and increase local trips by cycle, walking and passenger transport.
- B.87. The strategic case for all of the strategies is significantly enhanced by the City Access proposals which focus on reducing car trips to central Cambridge. To complement the City Access proposals investment in passenger transport in the form of extra Park & Ride capacity, increased bus service frequency and affordable bus fares/parking charges as well as new high profile infrastructure and bus priority measures are required.
- B.88. The alignment currently identified for the phase 2 strategy 1 busway option also has some synergy with other emerging strategies and does not preclude the major investment proposals being promoted by others in relation to light rail and heavy rail in the future. All the strategies provide a sound basis for developing passenger transport patronage to support future additional investment in transit schemes.

Aims and Objectives

- B.89. The stated aims of the project are to:
- Cut congestion
 - Improve air quality
 - Provide faster and more reliable transport routes into Cambridge and to employment sites
 - Link villages together
 - Improve junction safety through highway improvements
 - Provide high-quality walking and cycling facilities
- B.90. The scheme would positively contribute to growth along the corridor by:
- Improving local sustainable transport links between homes and jobs;
 - Improving road safety along the corridor by making changes to key junctions to reduce conflict or by reducing the speed of vehicles with appropriate enforcement where there have been speed-related accidents;
 - Support the delivery of job and housing growth along the corridor including important growth sites at Granta Park, Babraham Research Campus and the Cambridge Biomedical Campus; and
 - Help address local transport issues for example bus reliability along the A1307 corridor.
- B.91. In the shorter term the phase 1 measures will enhance road safety by addressing accident clusters along the route with junction enhancements, improve bus journeys in terms of reliability and journey times, especially in an eastbound direction at PM peak times and in the westbound direction around Linton. The new pedestrian and cycle links and crossing facilities will also reduce severance, improve access for all non-motorised users (pedestrians, cycles and equestrians), improve access to bus stops and improve linkages between homes, jobs and schools.

Measures of Success

B.92. The key opportunities that the project (Phase 1 and Phase 2 as a whole) seeks to address are improvements to road safety, bus journey time reliability and mode shift, so key measures for success include the following:

- Reduction in frequency and severity of accidents at key junctions;
- Reduction in the number of locations classed as accident clusters along A1307;
- Casualty reduction - KSI reduction;
- Reduced accidents involving vulnerable users (especially cyclists);
- Improved journey times and reliability for bus users;
- Reduced vehicle emissions of NO2;
- Increased P&R usage, including for bikes – helping to reduce the number of cars travelling to central Cambridge;
- Increased public transport patronage and revenues;
- Reduced emergency response times for fire and rescue vehicles.

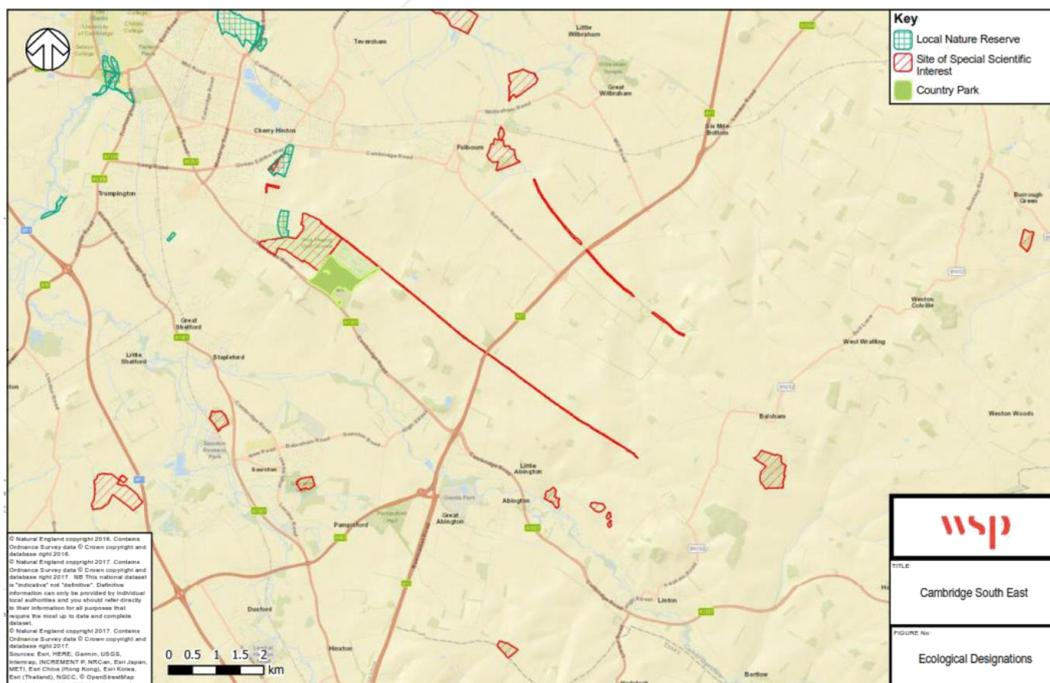
B.93. The success of the project will be monitored against these parameters via before and after surveys.

Constraints

B.94. The A1307 route to the south east of Cambridge is located close to a number of environmental constraints. These include designated heritage and ecology constraints (Wandlebury Country Park/The Gog Magog Hills, Nine Wells Nature Reserve and the former railway).

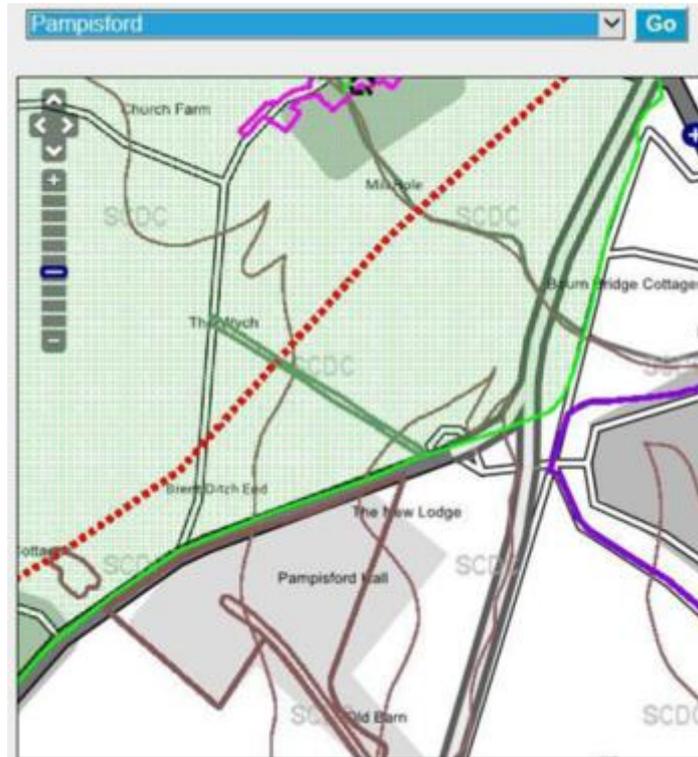
Ecology

B.95. Protected areas are shown below



County Wildlife Sites

B.96. County Wildlife Sites are shown below:



Greenbelt

- B.97. The majority of the study area west of A11 in South East of Cambridge is also classified as Greenbelt. South Cambs District Council policy on Greenbelt indicates that development opportunities within the Greenbelt are very limited, although transport infrastructure may be considered to be included as key infrastructure with exceptional need and movement networks or leisure and recreation which support active and healthy lifestyles.
- B.98. Based on local precedents for Park & Ride sites within the Greenbelt, including the nearby Babraham Road Park & Ride it is anticipated that transport infrastructure proposals could potentially be tolerated within the Greenbelt with adequate landscaping and mitigation. However, the Greenbelt status of the receiving environment remains a planning risk to the proposals which needs to be explored further in consultation with South Cambs DC as the detail of the strategy 1 proposals emerges.
- B.99. The phase 1 scheme options have a marginal impact on the Greenbelt as the majority of works for implementation are within the existing extents of public highway. The phase 2 strategy 1 scheme will have a more pronounced effect. In particular on the landscape and on the County Wildlife site on the disused railway line.
- B.100. It is proposed to protect the County Wildlife Site by routing beside the disused railway line rather than on it. The old railway line could potentially be retained as a landscaped backdrop to the new transit route offering screening in places where trees and hedges line the route of the former railway. The new transit route and the former railway line together could then offer a form of linear park for public enjoyment as a new public right of way for non-motorised users.

Stakeholder and Public Engagement

- B.101. A variety of key stakeholders have contributed to the project, either as part of the Project Board, Project Team or Greater Cambridge Partnership. There are also many stakeholders who have been involved in the Local Liaison Forum these include parish councils along the route of A1307 and A1301 and co-opted members (Cambridge Past Present and Future, The Gog Magog Trust, the Cambridge University Hospitals Trust, Trumpington Residents Association and Queen Edith's Residents Association).
- B.102. Local businesses have also been engaged throughout the project, this has included the campuses along the routes (Granta Park, Babraham Research Campus, Cambridge Biomedical Campus Hinxtton Genome Campus),

Consultation

- B.103. The proposals have been developed with public and key stakeholder input throughout the study since 2015. Initial Options were developed in 2015 with input from stakeholders following the DfT EAST method with a long list of options refined down to a shortlist which were taken forward to public consultation in summer 2016.
- B.104. The feedback from the summer 2016 consultation indicated that local residents preferred a less intrusive package of options which would be affordable in the short term period coinciding with the availability of tranche 1 GCP funding (for scheme elements to be implemented by 2020). Key issues raised included:
- Road safety concerns;
 - Congestion and delays;
 - Improving bus journey times and reliability;
 - Lack of alternative modes – rail;
 - Improvements to walking and cycling facilities.
- B.105. During the summer of 2017 a series of LLF Workshops were carried out to seek feedback on potential scheme options and seek alignment with the GCP objectives. The key elements of the scheme were derived from this feedback, prioritising those which best met the GCP objectives.
- B.106. Further public consultation was carried out in 2018 on the options that emerged from the optioneering in 2017.

Other Strategic Options Considered

- B.107. The study area includes a former rail line from Haverhill to Cambridge which was closed during the Beeching era and early studies undertaken as part of this project indicated that re-instating a railway from Haverhill to Cambridge would not offer good value for money. This has been challenged by Rail Futures who considered the estimated cost to be higher than other re-opened railways.
- B.108. A new road scheme had also been considered previously within the corridor to provide additional highway capacity. However, this was considered to contradict the GCP objectives which seek to influence mode shift and reduce car travel into central Cambridge.
- B.109. A review of traffic survey data at the A11 junction also indicated that much of the traffic travelling from Haverhill and Linton does not continue directly towards central Cambridge on A1307. About 50% of traffic approaching A11 and to the west of the A11 junction about 50% of A1307 traffic joins the road from A11. A separate highway scheme from Haverhill to A11

was felt to be more appropriate to the east of A11 and is therefore being progressed by Haverhill Chamber of Commerce (A1307 Strategy Board). A Pre-SOBC has been produced for potential scheme options for this route and has a BCR of approximately 1.0 with two scheme options considered to the north and south of Linton, with scheme costs in the region of £180m-£190m.

- B.110. Due to land assembly and funding issues, timescales for implementation of the strategic road scheme east of A11 are unlikely to coincide with the Cambridge South East Transport Study being delivered in the next 8 years. However the principle of the route has been considered in the development of the Cambridge south east transport study. The Phase 1 strategy is expected to be complementary to this scheme without duplicating infrastructure or providing interventions that may become surplus to requirements once the new road is in place.

Summary

- B.111. The evidence shows that the study area and routes within it are important for the local and regional economy with key strengths in knowledge-research industries, supported by a skilled workforce.
- B.112. In order to maximise the areas effectiveness in contributing to the Cambridge economy and City Deal, transport connectivity must be addressed to enable reduced business costs, and enable improved access for all too key jobs and services.
- B.113. The interventions are critical to overcoming the existing local and regional infrastructure challenges, connecting skilled people with jobs, linking employment clusters and creating an efficient transport network that enables housing and jobs growth to be delivered in way the supports the efficient movement of goods and people.
- B.114. Modelling indicates that the strategic public transport, walking and cycling interventions proposed within the three strategies (in particular strategy 1) will ensure that a lack of transport connectivity and capacity does not prevent the area from successfully delivering sustainable growth.

Value for Money

Strategy Modelling

- B.115. The County Council's strategic transport computer model referred to as the Cambridge Sub-Regional Model (CSRM) model was used to assess the different option proposals.

Forecast Background Growth to 2031

- B.116. The CSRM2 foundation case model has been taken as the starting point for all GCP projects. This gives a common set of minimum background land use changes (e.g. housing and employment growth) as well as transport assumptions. The Foundation Case is consistent with the Local Plans within Cambridgeshire.
- B.117. Within the study area, local adjustments have been made, where committed development is more than likely to exceed the Local Plan and project-specific requirements need to be taken into account. Additional developments were therefore included in addition to the Local Plan growth within the Foundation Case.
- B.118. The A1307 travel demand model within the initial Options Report was based on a certain set of development assumptions which included a subset of what is now the committed development at CBC (Cambridge Biomedical Campus), employment expansion at Granta Park and Babraham Research Campus (BRC) and significant housing growth in Haverhill totalling 4260 dwellings by 2031 as set out within the St Edmundsbury Adopted Local Plan.

Scenarios tested

- B.119. A total of 8 potential strategy sub-options were tested within the CSRM2 model.
- B.120. All strategies are assumed to be implemented alongside the City Access measures being promoted by GCP. The objectives of the City Access study are to reduce traffic in central Cambridge by 1% below 2011 levels by 2031. The Do-Minimum (2031 forecast without implementation strategies) scenario does not include the City Access measures as the demand management measures proposed need to be supported by public transport and/or active mode alternatives such as those proposed for the A1307 route.
- B.121. The key findings of the modelling work are summarised below:
- A public transport corridor located close to existing villages in the A1301 corridor enables additional settlements to benefit from faster journey times in addition to improving journey times for the existing Babraham P&R service due to the segregated route and higher bus speed owing to the guidance system.
 - The bus link mainly improves the existing Babraham P&R service.
 - Enhancing the X13 service frequency substantially helps to improve the level of mode shift being achieved from settlements east of the A11. This could be further supported by a rural hub at Linton.
 - The provision of a new Park & Ride site near the A11 / A505 helps to increase the captive audience that the public transport improvements are able to cater for.
- B.122. WebTAG sets out assumptions that should be used in the conduct of transport studies. The DfT Databook has been used where possible to provide a consistent basis for assessment. The cost data used to inform the assessment is based on the best information available at the time of preparing the OBC.
- B.123. Optimism bias has been dealt with via the rule of half applied within the economic calculations. However, the implementation costs also include an element of optimism bias of 15%. Contractor preliminaries are assumed at 15%, traffic management 10% and profit 8%.
- B.124. The proposed mass transit route is currently envisaged to form part of a wide Cambridge Autonomous Metro (CAM) network which is an entirely new concept for Cambridge being promoted by the Combined Authority and elected Mayor of Cambridgeshire and Peterborough. A Strategic Outline Business Case for the CAM system is being worked up by SDG and this is expected to be available in December 2018. However, the route could equally be delivered as a busway or light rail system (if extended to Haverhill). Given the limited knowledge of the CAM system, the assumptions are based on a bus only road which was the concept originally envisaged. It is proposed to undertake more detailed work alongside further development of CAM. Mass transit on Strategy 1 would increase patronage and economic return.
- B.125. A new station in the south of Cambridge located at the CBC campus was also not included in the modelling assumptions for the study. At the time of preparing this OBC, the Cambridge south station proposal is currently moving through the GRIP. However, a preferred scheme was not published and there is not full funding in place to support the proposals so it is not seen as a committed scheme. It is expected that it would if delivered significantly increase patronage of the Strategy 1 mass transit route.
- B.126. The Haverhill to A11 strategic road scheme is also excluded from the assessment. This is not geographically co-incident with the strategy 2 mass transit route option and caters for a different customer market (those travelling to strategic destinations north and south of

Cambridge rather than local trips into central Cambridge, so is unlikely to conflict or detract from the performance of the mass transit route. However, it would reduce the benefits of bus priority improvements east of the A11.

- B.127. The City Access measures are assumed to play an important role in securing the mode shift potential of the scheme identified via the CSMR2 model, in particular trip end restraint at workplaces in Cambridge. The benefits of the scheme are dependent on this to a significant extent.

Benefit Cost Ratios

Phase 1

- B.128. The benefit-cost ratio for phase 1 has been calculated at high level, as phase 1 is mainly discrete junction improvements and safety improvements. The traffic model results do not indicate significant mode shift changes to public transport, although the increased frequency of X13 services is likely to induce some local mode shift in the immediate vicinity of Haverhill and Linton.
- B.129. Given the level of uncertainty at this stage of the project, a lower and upper value have been presented for a 10 year and 20 year assessment period, in accordance with WebTAG guidance. The benefits have been calculated with the rule of half applied to ensure they are conservative and costs include an optimism bias in accordance with webTAG. The benefit-cost ratios presented below are therefore felt to be conservative in nature.
- B.130. In accordance with webTAG the figures are discounted to a base year of 2010 for comparison purposes.

	10 Year Appraisal	20 Year Appraisal
Benefits	£6.60m	£11.45m
Costs	£6.36m	£6.36m
Benefit Cost Ratio (BCR)	1.04	1.80

Investment Requirements

- B.131. Phase 1 comprises discrete interventions costing £14.15m in total, with the cost of individual elements ranging from £40k to £3.45m. The measures are proposed to be delivered in 3 tranches.

Tranche 1 – Early Low Cost Interventions

- B.132. This group contains low cost measures that do not require significant development, land acquisition or other than Traffic Regulation Orders. It is proposed to deliver these in the 2018/19 financial year.
- B.133. These include:

Linton Village College junction signal upgrade	£	35,000.00
Extra cycle storage at Babraham Road Park & Ride	£	40,000.00
Peak-hour eastbound bus lanes on approach to Linton	£	70,000.00
	£	145,000.00

Tranche 2 – Medium Cost/Term Interventions

B.134. This group contains measures that require more development work and possible limited land acquisition by negotiation. It is proposed to deliver these in the 2019/20 financial year.

B.135. These include:

Measures to ease bus movements in Linton	£ 30,000.00
Linton High Street junction signalisation & right-turn ban	£ 230,000.00
Eastbound bus lane at A11	£ 325,000.00
Signalised multi-user crossing – Babraham Research	£ 400,000.00
Granham's Road junction improvement	£ 625,000.00
Horseheath to Linton safety improvements	£ 800,000.00
Dean Road Crossroads Safety Improvements	£ 325,000.00
Westbound bus lanes on approach to B1052 junction	£ 1,400,000.00
Signalise Hildersham crossroads with Toucan/ Pegasus	£ 1,300,000.00
	£ 5,435,000.00

Tranche 3 – Higher Cost/Longer Term Measures

B.136. This group contains larger scale interventions, requiring more development time, negotiations with third parties, land acquisition, and necessary orders. It is proposed to deliver these in the 2020/21 financial year.

B.137. These are:

Linton Greenway	£ 3,450,000.00
Bartlow Road roundabout & rural hub	£ 1,300,000.00
Haverhill Road junction safety improvements	£ 575,000.00
Wandlebury multi-user underpass	£ 1,950,000.00
Multi-user crossing of A11 via improved footbridge	£ 1,300,000.00
	£ 8,575,000.00

B.138. The phase 1 works would be placed through existing Cambridgeshire County Council frameworks, except where the works value exceeds framework limits, or the work is out of scope. These frameworks are:

B.139. Highway Service Contract

- Subject to a maximum yearly spend across CCC
- Suitable for low cost works

B.140. Eastern Highways Alliance

- Lot 1 £0 up to £1.5m
- Lot 2 £1m up to £20m Construction Only

B.141. All the work in phase 1 can be procured through either the Highway Service Contract or the Eastern Highways Alliance.

Appendix C – Figures

Figure 1 - Phase 1 Consultation Responses

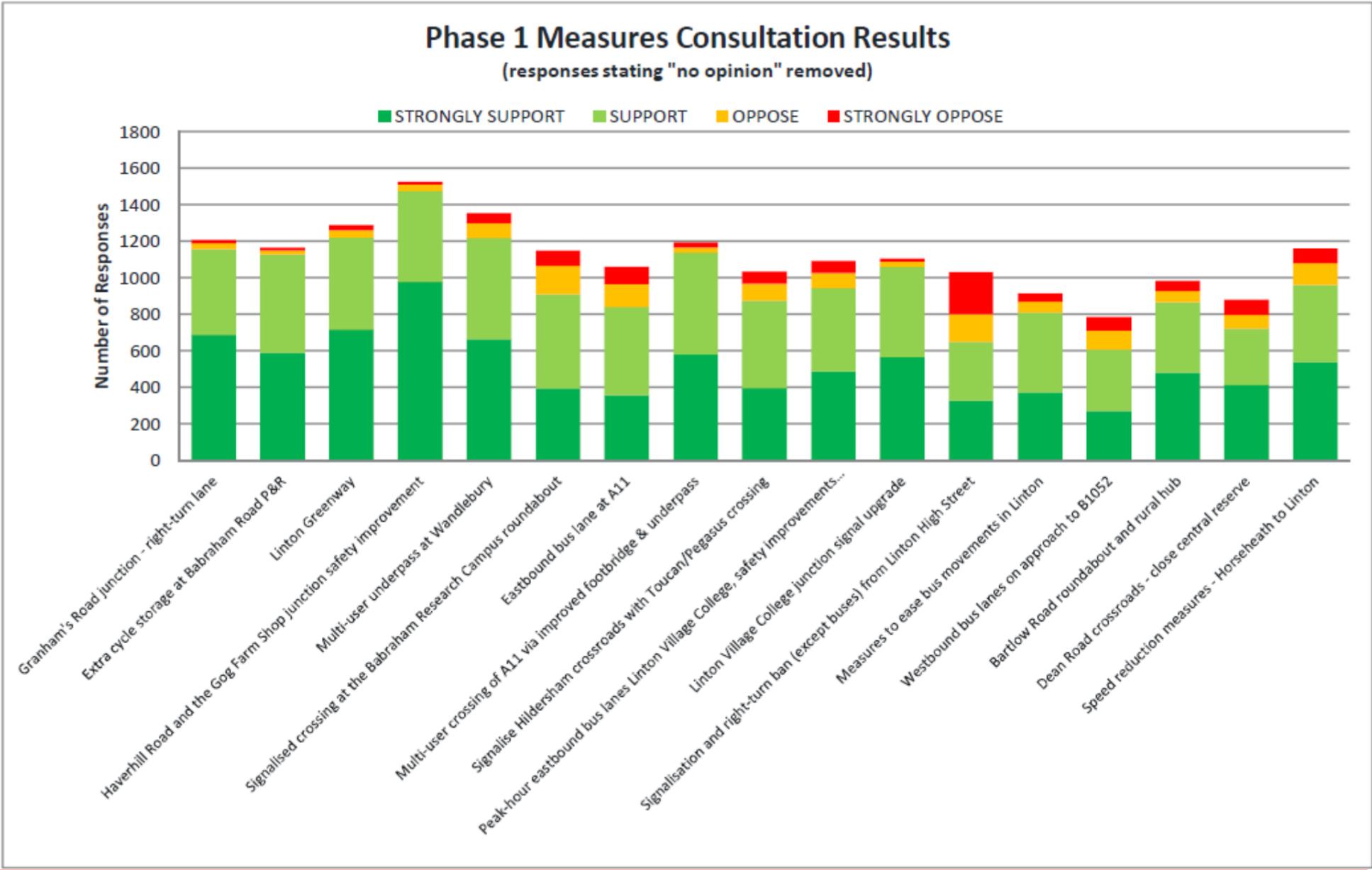


Figure 2 - Phase 1 Works

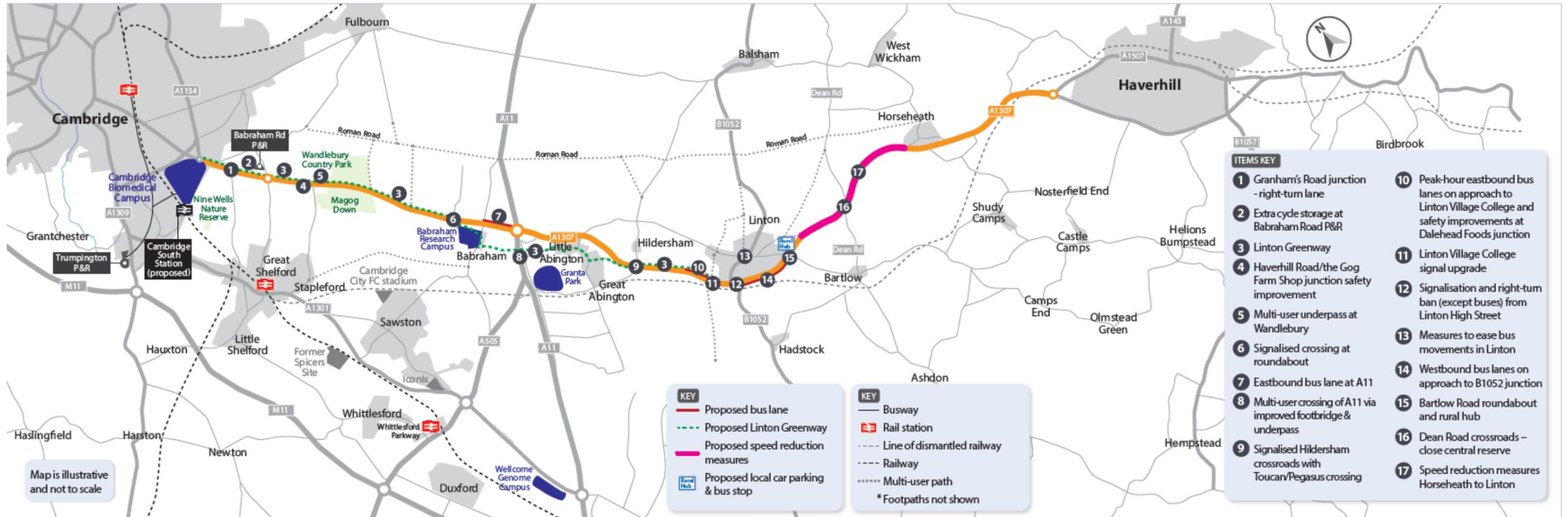


Figure 4 - Phase 2 - Strategy 2

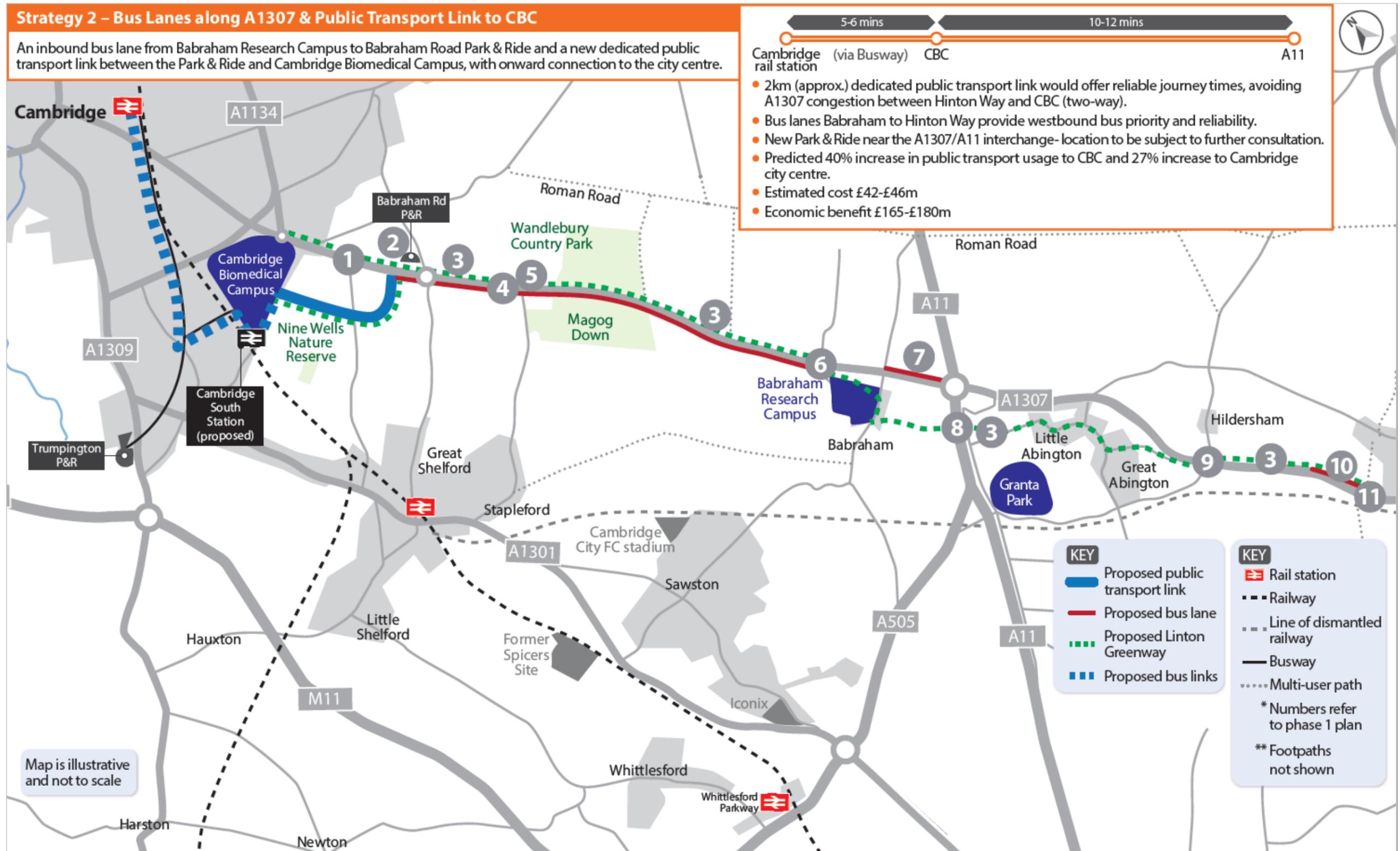


Figure 5 - Phase 2 - Strategy 3

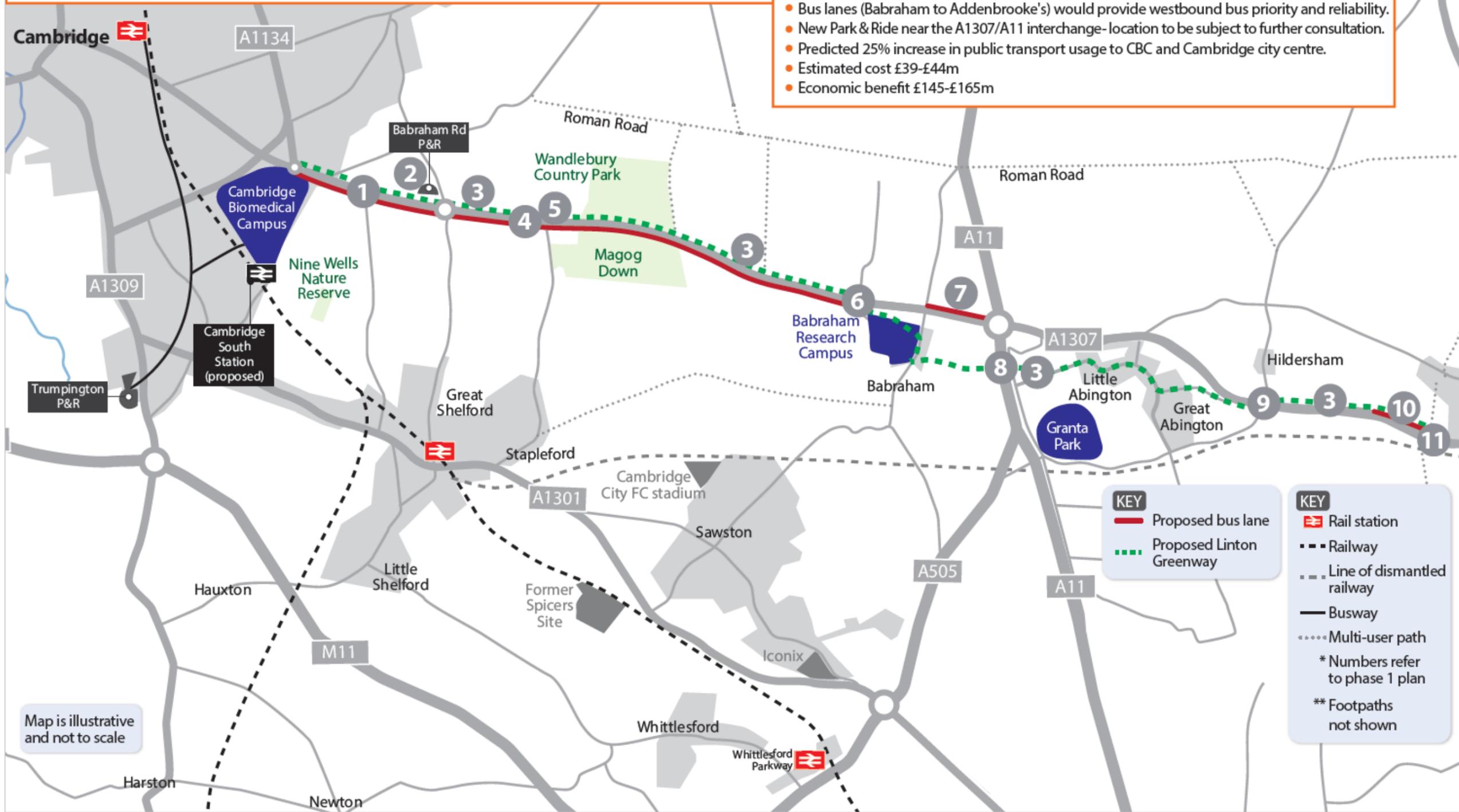
Strategy 3 – Bus Lanes along A1307

Inbound bus lanes from Babraham Research Campus to the Addenbrooke's Hospital roundabout with onward connection to the city centre.

10 mins 12-15 mins

Cambridge rail station (via Hills Rd) CBC A11

- Bus lanes (Babraham to Addenbrooke's) would provide westbound bus priority and reliability.
- New Park & Ride near the A1307/A11 interchange- location to be subject to further consultation.
- Predicted 25% increase in public transport usage to CBC and Cambridge city centre.
- Estimated cost £39-£44m
- Economic benefit £145-£165m



Map is illustrative and not to scale

KEY

- Proposed bus lane
- - - Proposed Linton Greenway
- ⊞ Rail station
- - - Railway
- - - Line of dismantled railway
- Busway
- ⋯ Multi-user path
- * Numbers refer to phase 1 plan
- ** Footpaths not shown

Appendix D - Current Programme

The outline programme is:

Phase 1

- July 2018 - Authorisation to Proceed to Design
- November 2018 - Submit Planning Application
- March 2019 - Publish Orders
- Autumn 2019 - Public Inquiry if needed
- Early 2020 - Start Construction
- Late 2020 - Works Complete

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