



Report To: Greater Cambridge City Deal Executive Board

9 June 2016

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

Milton Road Bus Priority, Walking and Cycling Measures: Report on Initial Consultation and Selection of a Preferred Option

Purpose

- 1 This report reviews the feedback from a consultation on initial project ideas, sets out recommendations on a preferred project option and seeks approval to carry out a further public consultation.

Unless stated otherwise, all the background documents referred to in this report are available here:

http://www.gccitydeal.co.uk/citydeal/info/2/transport/1/transport_projects_and_consultations/4

Context and Scope

- 2 The project supports the City Deal priority of achieving efficient and reliable movement between key existing and future housing and employment sites and is being delivered as part of the Tranche 1 infrastructure programme
- 3 In particular, the project will support the delivery of new housing at Northstowe, Waterbeach and on the northern fringe of the city and provide improved links with employment sites such as the Science Park and Cambridge North Station, benefitting residents, commuters and business. The project is being developed concurrently with a similar scheme for Histon Road, as there are links and dependencies between the two projects. A separate study looking at the transport needs of the A10 north of Cambridge is currently underway.
- 4 The project aims to provide improved infrastructure for buses to improve service reliability and journey times, to enhance the quality and safety of cycling and walking facilities and enhance the streetscape.

Recommendations

- 5 The Executive Board is recommended to:
 - a. Note the findings in the initial consultation report;
 - b. Take forward the initial ideas in the 'Do Something' option for further design work including the Union Lane closure and Elizabeth Way roundabout ideas and 'floating' bus stops (where highway space permits) but excluding the ideas for banned turns at the Gilbert Road, Arbury Road and King's Hedges Road junctions;

- c. Agree to consider major changes to the highway layout at the Mitcham's Corner junction for implementation as part of the ongoing tranche 2 prioritisation work. ;
- d. Note the further technical work that would be undertaken over the summer period;
- e. Support the development of traffic management measures to mitigate displaced traffic and parking for the purposes of further consultation;
- f. Delegate authority to the Executive Director of Economy, Transport and Environment, in consultation with the Chairman and Vice-Chairman of the Executive Board, to approve a further consultation for a preferred option scheme design, as detailed in Section 43 of this report; and
- g. Note the procurement plan for project delivery, the revised project programme and the consultation plan set out in this report.

Reasons for Recommendations

- 6 Milton Road is a high priority scheme for the City Deal programme and a key proposal within the Local Transport Plan 2011-2026. Earlier technical work identified various options that have been the subject of public consultation and a preferred set of measures now needs to be selected for detailed development.
- 7 An assessment has been undertaken of various bus lane layouts (see Appendix 3) to determine the option that is being recommended as part of a project preferred option.
- 8 Consideration needs to be given to suitable traffic management measures to ensure that any unacceptable displacement of traffic and parking, as a consequence of the project, are mitigated where necessary and appropriate.

Background

Key objectives

- 9 The project has the following key objectives, (in no particular order):
 - a) Comprehensive priority for buses in both directions wherever practicable;
 - b) Additional capacity for sustainable trips to employment/education sites;
 - c) Increased bus patronage and new services;
 - d) Safer and more convenient routes for cycling and walking, segregated where practical and possible;
 - e) Maintain or reduce general traffic levels; and
 - f) Enhance the environment, streetscape and air quality.

Development

- 10 **Figure 1** below indicates the length of Milton Road under consideration and shows it's setting in a wider context. The report considered by the Executive Board on 3rd November last year sets out the strategic and planning background and context for the scheme.

Options assessment

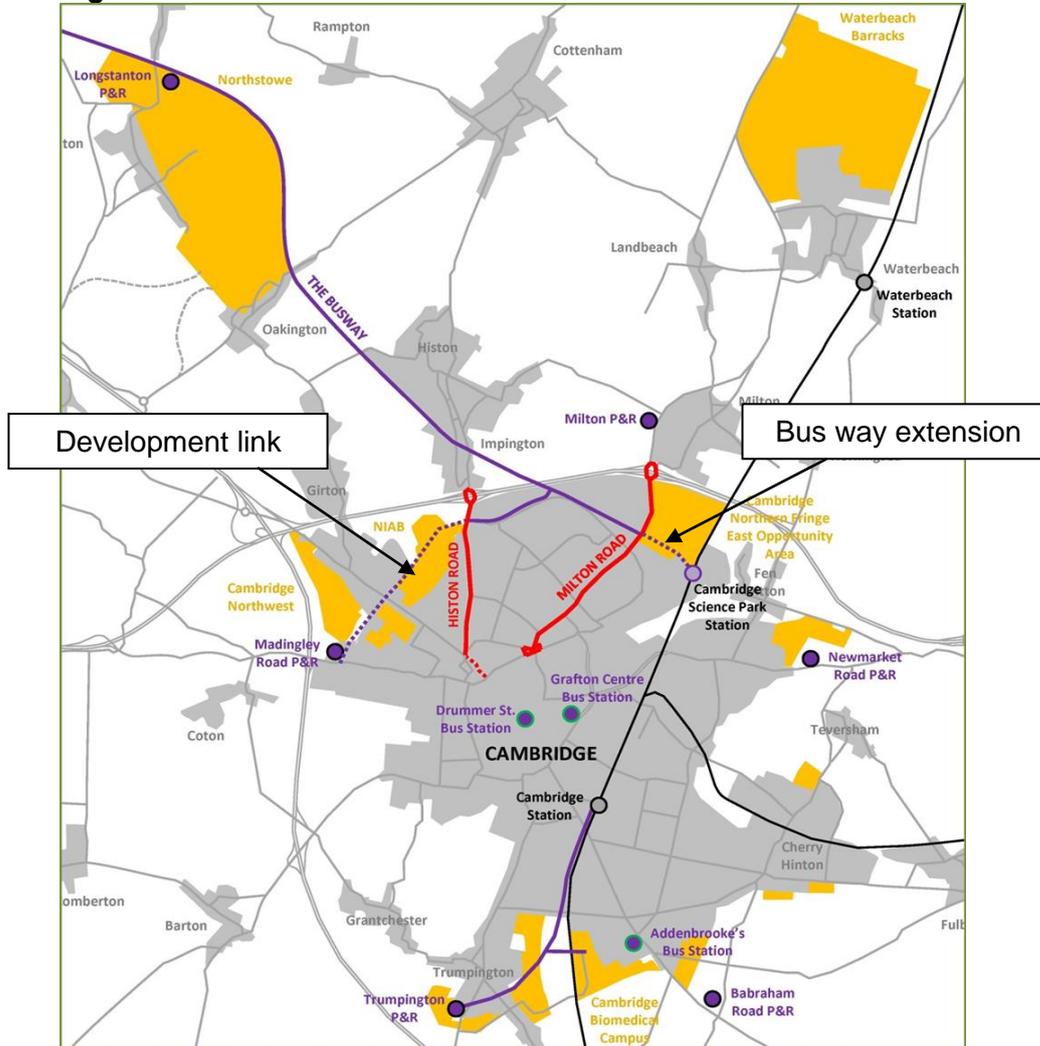
- 11 At its meeting on 3rd November 2015, the Executive Board considered a report on technical work undertaken by consultants, WSP/Parsons Brinkerhoff, to identify initial ideas for delivering the project objectives. Two options were put forward:
 - a 'Do Maximum' option comprising measures to provide the maximum benefit in terms of the project objectives but with a significant impact on the urban street scene and local access

- a 'Do something' option offering less overall benefit for bus movements (although journey time and reliability would still improve over that experienced now), a similar level of improvement for cycling and walking but with less impact on the public realm.

The Board resolved to undertake consultation on the two options. The consultants' draft options report, which contains drawings of the initial ideas, is available as a background document. The Board report and minutes are available here:

<http://scamb.moderngov.co.uk/ieListDocuments.aspx?CId=1074&MId=6537&Ver=4>

Figure 1: Milton Road in the wider area context



Considerations

- 12 An initial budget estimate of £23 million was set for the Milton Road project by the City Deal Board when the first tranche of projects was approved. The technical work to date is in line with the Department for Transport technical scheme appraisal methodology (known as WebTAG) and the City Deal objectives set out in the City Deal document agreed between the five City Deal partners and Government: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321722/Greater_Cambridge_City_Deal_Document.pdf

Initial consultation

- 13 In line with the Executive Board decision of 3rd November 2015, a consultation exercise for the initial project ideas was undertaken between 14th December and 15th February. Full details of the consultation process, the response to consultation and

its analysis are provided in the report prepared by consultants, WSP, which is available as a background document.

- 14 The consultation is strongly influenced by a large percentage of responses from those living along and close to the route with far fewer responses from outside the area and from other stakeholder groups. The initial ideas have received a generally negative response although some aspects have been received positively. Appendix 1 sets out the headline results from the consultation and the key issues that have emerged, along with officer comment. A full report on the consultation and its results is available as a background document.
- 15 The consultation sought suggestions and ideas on other ways of achieving the project aims and the responses are summarised in Appendix 2 along with officer comment.

Further assessment work

- 16 Following consultation, further work has been undertaken to assess the opportunities to respond to the issues that have emerged and to provide further detail to inform a decision on a preferred option. Some of the initial ideas put forward are considered to be pivotal in achieving the project objectives even though they may have received a negative response at consultation.

Highway cross-section

- 17 Given the concerns over the possibility of carriageway widening, the option of using a tidal bus lane arrangement has been explored to see if this provides a better use of carriageway space. An assessment of the likely bus journey time benefits of tidal flow arrangements has been undertaken to allow comparison with other bus lane options. The safety, operational, streetscape and maintenance challenges arising from tidal flow options have also been assessed through an officer/consultant workshop. Technical notes on current tidal flow schemes and an assessment of tidal bus lane options are available as background documents.

Floating bus stops

- 18 The idea of providing 'floating' bus stops, which would allow cyclists to avoid overtaking buses at bus stops, gained some degree of support. Whilst this is considered to be impractical at many existing stop locations, it is recommended that consideration be given to the provision of floating bus stops type where adequate highway space exists.

Traffic modelling

- 19 Further work has been undertaken to assess the impacts of various bus lane design options (without the suggested banned turns into Gilbert Road, Arbury Road and King's Hedges Road) and changes to traffic flows on the road network, which is detailed in an interim options report which is available as a background document.
- 20 Appendix 3 summarises and compares various bus lane option journey times against a 'Do Nothing' scenario based on traffic modelling using a Paramics micro-simulation model constructed for the Milton Road corridor. The model assumes the closure of Union Lane and the signalisation of the Elizabeth Way junction. It should be noted that at this stage the benefits from early bus detection at traffic signals has not been built into the traffic model and further refinements in the model will allow bus dwell times to be more accurately reflected. Therefore, the modelled bus journey times are expected to reduce when further modelling is undertaken. Appendix 3 also sets out a comparison of these options in terms of benefits for bus services, urban landscape impact and risk.

- 21 The interim options report identifies routes where traffic levels are expected to change (increases and reductions) as a result of the restricted traffic movements proposed in the Milton Road and Histon Road projects. The report provides a commentary on the reasons for these changes. Appendix 4 provides a diagrammatic representation of these road network flow changes across the northern part of the city during the peak periods.

Mitcham's Corner

- 22 The emerging Local Plan sets out aspirations to enhance the environment of the Mitcham's Corner junction through the severing of the gyratory system to create opportunities for public realm improvements. The City Council is preparing a development framework supplementary planning document for Mitcham's Corner, with input from the City Deal team, which will set out proposed changes to the area, including a proposal to sever the gyratory system as well as providing guidance for the re-development of key sites and the general area. Plan 1 shows a conceptual layout.
- 23 Early project informal stakeholder engagement suggested strong local support for changes to the junction and in response to the consultation 23% of replies supported the removal of the gyratory layout, although 31% felt no changes were necessary. An officer/consultant workshop was held in February to consider further the best options for changing the highway configuration of the junction. A report from the workshop, which considers options for changing the gyratory nature of the junction, is available as a background document.
- 24 As highlighted in the Executive Board report of 3rd November last year, delivering these aspirational changes will require significant funding, perhaps as much as £4-5 million pounds although the cost would be less if the scope was limited to changes to the road layout only. The cost of more detailed landscape features could be part funded by the City Council via its Local Centre Improvement Programme with the public realm design aspects being phased over time to allow for funding contributions through planning obligations secured from new development in the local area.
- 25 As stated in the Board report of 3rd November, the City Deal has identified the potential to invest in public realm improvements as part of project delivery but careful consideration of the business case for any contribution towards Mitcham's Corner improvements would be needed to ensure that it represents value for money when assessed against the City Deal objectives and it is consistent with the agreed Assurance Framework. Whilst the highway layout changes envisioned by the City Council would bring about a much enhanced public realm and improved conditions for walking and cycling, the benefits for bus movements are likely to be less significant and, given the scale of investment required, careful consideration would need to be given as to the extent that this would help deliver the objectives of the City Deal.
- 26 Any changes in highway layout would need to avoid reducing the capacity of the junction given the potential growth in traffic as planned development takes place. The measures being developed for Milton Road and Histon Road along with the measures emerging from the Cambridge Access and Capacity Study are expected to help reduce traffic levels at the junction and it is recommended the Mitcham's Corner changes should be considered as part of the current work to assess priorities for tranche 2 of City Deal funding.

Preferred option

- 27 Determining the bus lane layout is a key element in establishing the cross sectional profile of the street layout for the preferred option. Appendix 3 sets out an assessment of the options that have been considered. The key findings from this assessment and the conclusions drawn are as follows:

'Do Maximum' option (Almost continuous bus lanes in both directions)

Offers the best improvements in bus journey times but would offer very limited opportunities to enhance the urban streetscape. A four lane carriageway layout, coupled with segregated cycleways on each side, would impact very significantly on the current street scene with the loss of a large number of highway trees and would create more severance of the local community.

'Do Something' option (Inbound and outbound bus lanes on approaches to key junctions)

Provides good improvements in bus journey times. Coupled with the segregated cycle lanes either side will also result in the removal of a large number of highway trees. However, there will be opportunities for new highway tree planting and other green landscaping areas throughout the route albeit not always on both sides of the road which creates opportunities for streetscape enhancement and resulting in healthy trees for the future.

Tidal flow options (Reversible peak period central bus lane/Alternating peak period kerb side bus lane)

Provides better journey time savings in the peak flow direction but are less effective in the alternative direction and, overall, are not as beneficial as the 'Do Maximum' or 'Do Something' options. Like the 'Do something' option, they also offer opportunities for streetscape enhancement and new highway tree replanting but this would be offset, at least in part, by the visual impact of gantry signing along the whole route. There are risks associated with securing approval for the signing regime and operational aspects.

- 28 It is considered that the 'Do Something' option offers the best balance in terms of the project objectives and will allow the emerging design to respond positively to the key concern that have been raised over the need for road widening and its impact on the street scene. Therefore, it should be taken forward for further design layout work to facilitate a second round of consultation. Appendix 5 summarises the key elements that the preferred option would comprise of, along with the rationale for their inclusion.

Future work

- 29 The following work would be undertaken over the summer/early autumn period to prepare a preferred option layout and initial business case for consultation purposes. This work will also include the preparation of design variations and options to provide a further response to the issues that emerged at consultation..

Engagement

- 30 A joint Milton Road and Histon Road Local Liaison Forum (LLF) is being formed with local councillors to facilitate future local engagement and communication as both projects are developed further. Local councillors will be asked to determine which stakeholder groups they wish to attend the LLF meetings with project officers giving the necessary support.

Design

- 31 Detailed highway layout plans will be developed for the preferred option which will involve input from urban design professionals to ensure that street scene aspects, particularly highway trees and other planting and landscape areas, are given careful consideration and weight in the design process. Street scene images of the layout at various locations along the route will be prepared to provide a visual impression of what the design would look like.
- 32 To inform and influence this design work, informal consultation with key stakeholders, particularly local residents groups, will be undertaken over the summer period to get feedback on specific design aspects such as cross section design layout options for

the footway, cycleway and green landscaping elements, tree planting (tree species, size and spacing of trees), and the use and design of other landscaping areas.

- 33 For the Elizabeth Way roundabout, a new detailed design for a signalised junction will be prepared, building on the initial layout set out in the consultation plans and taking into account the useful ideas put forward by the Cambridge Cycle Campaign. Design layout variations will also be developed for further consultation; one to include prohibiting the right turn into Elizabeth Way to further simplify the junction operation and a second to retain a fourth arm for Highworth Avenue. These would be modelled and assessed to show how the benefits for sustainable trips vary between each option.
- 34 Trial pits will be dug at various sites along the route to check the location of public utility services to validate the information provided by the utility companies to inform the design process.

Traffic modelling

- 35 The modelling work done to date will be revised to take account of the likely impacts arising from the package of measures emerging from the Cambridge Access and Capacity Study to show how this would affect journey time performance and the business case for the project.
- 36 The current Paramics micro-simulation model for Milton Road is being extended to include the Elizabeth Way-Chesterton Road roundabout to assess the effects that the Milton Road measures would have on this nearby junction.
- 37 The changes in traffic flows on the surrounding road network that are likely to arise as a result of the Milton Road and Histon Road schemes will be explored in greater detail to assess whether there is a need to mitigate for these changes. Further engagement will be undertaken through the LLF to consider the need for and the traffic management options available to mitigate any significant impacts. The mitigation proposals that emerge from this dialogue will also form part of the next consultation.
- 38 For the preferred option, new signal timings will be developed to achieve a suitable balance of main road and side road traffic delays which will be coupled with an early bus detection mechanism. This will facilitate further traffic modelling, to refine the work already undertaken on bus journey times, and an assessment of non-bus journey times for comparison, which will then feed into the initial project business case.

Parking

- 39 Additional parking management proposals will be developed to complement the preferred option to ensure its efficient operation and to manage the displacement of any parking into side roads and to mitigate the loss of any local residents parking. These proposals, which will be developed with input from local councillors and residents' groups through the LLF, will form part of the next consultation. This will provide an opportunity to address some existing local parking issues on neighbouring side roads where demand exceeds supply and where residents have to compete with commuters for parking space.

Business Case and Costs

- 40 An initial business case for the preferred option will be prepared over the summer/early autumn period to form part of the next consultation to allow the public to reflect on the cost effectiveness of the scheme. This work will be revised as the

project moves through the next stages of development. A final full business case would be considered by the Executive Board, prior to any decision to approve the construction of a scheme.

- 41 The approximate capital costs for the preferred option is £6 million. However, this estimate does not allow for various cost elements which are not known at this time including (but not limited to):
- land purchase & any compensation claims;
 - the potential relocation of utilities which is expected to be substantial;
 - risk and contingencies;
 - operations and maintenance;
 - inflation;
 - contractor's overheads, profit and preliminaries; and
 - design fees and construction / project management.

The initial business case for the preferred option will provide more detail on these costs.

Second consultation and officer delegation

- 42 Subject to the successful completion of design, traffic modelling and business case work over the summer/early autumn period, a second round of consultation on the preferred option detailed design, parking and traffic management mitigation proposals and an initial business case will be undertaken during November and December covering the Milton Road and Histon Road projects. The consultation will seek to set the two schemes in the wider City Deal context identifying how they complement the measures emerging from the Cambridge Access and Capacity study. An earlier project timeline suggested this would take place early in 2017 but this can be brought forward subject to an appropriate officer delegation.
- 43 To facilitate this process, it is recommended that the Executive Director, Economy, Transport and Environment, be delegated authority to approve the undertaking of a further consultation. This delegation would need to be exercised in consultation with the Chair and Vice-Chair of the Board and the other Board members, if they deemed it appropriate, and would cover the following elements that would form part of the consultation package:
- Plans showing detailed highway design layouts including any design variations/options, green landscaping including tree planting, bus stop locations and landscaping for other areas
 - Modelling outputs comparing bus and non-bus journey times
 - A draft business case
 - Parking and traffic management proposals to support the operation of the project and to mitigate scheme impacts.

The delegation would only be exercised on scheme details outlined above. The alternative would be for the details of the scheme as outlined above to come back to the Board and Assembly ahead of the consultation being finalised – this would mean consultation would need to take place later.

A consultation process and programme is set out in Appendix 6.

Procurement

- 44 The early involvement of a contractor in large infrastructure projects can minimise construction risk, lead to a more readily deliverable design and allow more innovative construction methods to be utilised. Setting in place a procurement plan to allow the early appointment of a contractor would facilitate an early start of construction for the Milton Road scheme.

- 45 With a scheme of this nature it is recommended that it should be delivered through a design and build process whereby the appointed contractor is tasked with preparing a detailed engineering design and a target construction cost and then undertaking its construction once the design and target cost are accepted.
- 46 The County Council is a partner in the Eastern Highways Framework, a contract shared by 11 local authorities in the eastern region. It is considered that this would provide a suitable vehicle for the delivery of the scheme for Milton Road. Use of the framework will reduce procurement and contract preparation time as the pre-qualification and tendering process have identified suitable contractors under a competitive process and the legal basis of the contract is already established. A further competitive process within the framework, where the selected contractors are invited to compete for the scheme will ensure that best value is obtained.
- 47 A two stage Design and Construct contract would bring the contractor into the project team early, with the team working together through the design and construction phases. This provides benefits of ensuring that the contractor can use his experience in the design phase to reduce overall project risk and ensure buildability. There is a presumption that the scheme will be delivered as a single package, but there is no guarantee that the contractor will move directly from detailed design to construction. This would be conditional on satisfactory performance and agreement of a construction target cost based on their detailed design.
- 48 A works 'package' would be prepared which would set out the requirements of the project and the framework contractors would then compete for the design and build contract through a detailed design target cost/initial construction target cost bid. Subject to acceptance of this procurement approach, it is anticipated that a contractor would be appointed by the late autumn of this year. Appointing the contractor to develop the detailed design would not pre-empt the final decision to implement the scheme.
- 49 Following the second round of consultation and approval of a preferred option layout by the Executive Board, the contractor would assume full responsibility for detailed engineering design work.

Programme

- 50 A revised project timeline is provided as Appendix 7. Attention is drawn to the assumptions upon which the programme is based. It is anticipated that the Executive Board would consider the response to the second consultation and take decisions on a scheme design for a final consultation, to satisfy statutory processes, at its meeting in June 2017. The programme will be revised as detailed design work continues and the timeline assumptions are clarified and will be shared with public utility companies and Highways England in relation to the A14 improvement works.

Implications

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

Financial and other resources

The scheme development and implementation is funded from the City Deal funding stream.

Legal

No significant legal implications have been identified at this stage although they may emerge as the project moves towards the statutory process stage.

Staffing

Project management is undertaken by Cambridgeshire County Council's Major Infrastructure Delivery Team. All schemes are worked up in collaboration with the District Councils.

Risk Management

A full project risk register forms part of the Project Plan.

Equality and Diversity

There are no equality or diversity implications in this report.

Climate Change and Environmental

The proposed measures have the potential to reduce congestion and improve air quality in the longer term through encouraging a shift towards sustainable transport modes.

Consultation responses and Communication

This report sets out a plan for further public consultation. The setting up of a Local Liaison Forum and further informal stakeholder meetings, ahead of further formal consultation, will also help facilitate engagement on the project.

Community Safety

Some of the options set out in this report will help reduce road casualties on Milton Road and improve road safety.

Background Papers

The following documents were used in the preparation of this report:

Histon Road and Milton Road Corridors – Draft Options report (WSP)

Milton Road consultation report (WSP)

Histon Road and Milton Road Interim Options report (WSP)

Technical note: Tidal flow bus lane assessment (County Council)

Technical note: Tidal flow bus lane review (Atkins)

Mitcham's Corner workshop report (Hamilton-Ballie Associates)

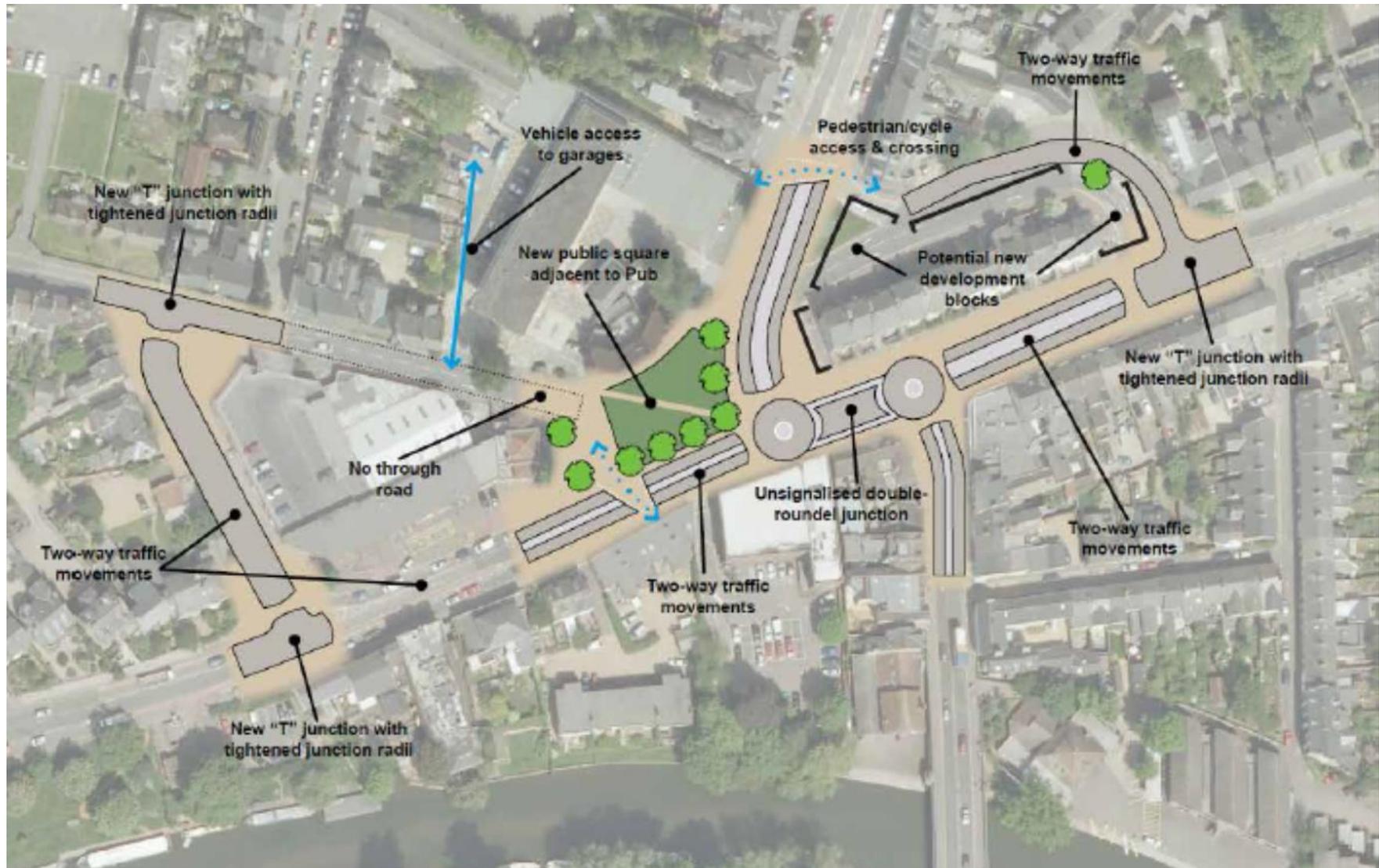
Executive Board agenda and minutes 03/11/15

Report Author: Richard Preston, Project Manager, Highway Projects, Major Infrastructure Delivery Team, CCC

Email: Richard.preston@cambridgeshire.gov.uk

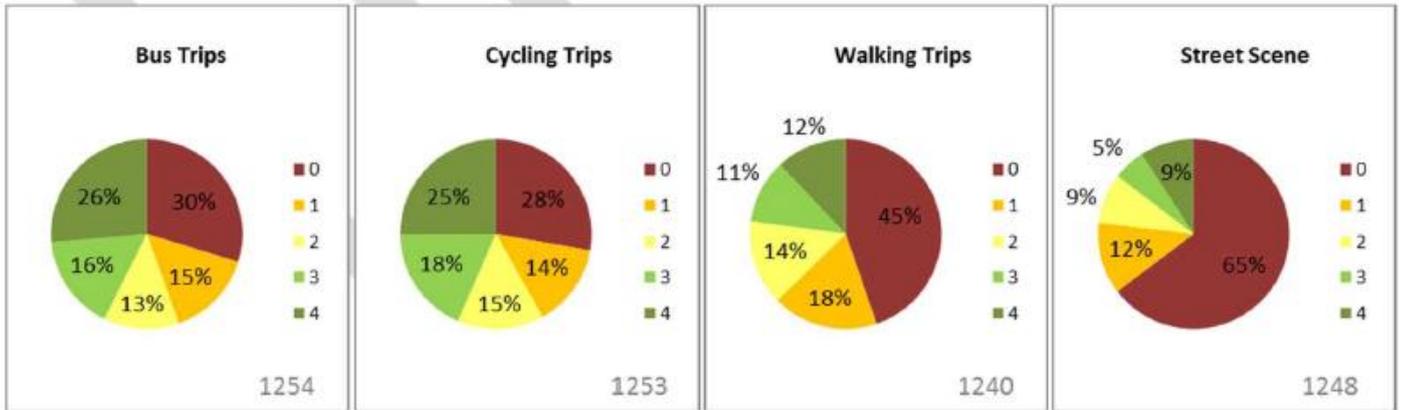
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PLAN 1: MITCHAM'S CORNER CONCEPTUAL LAYOUT

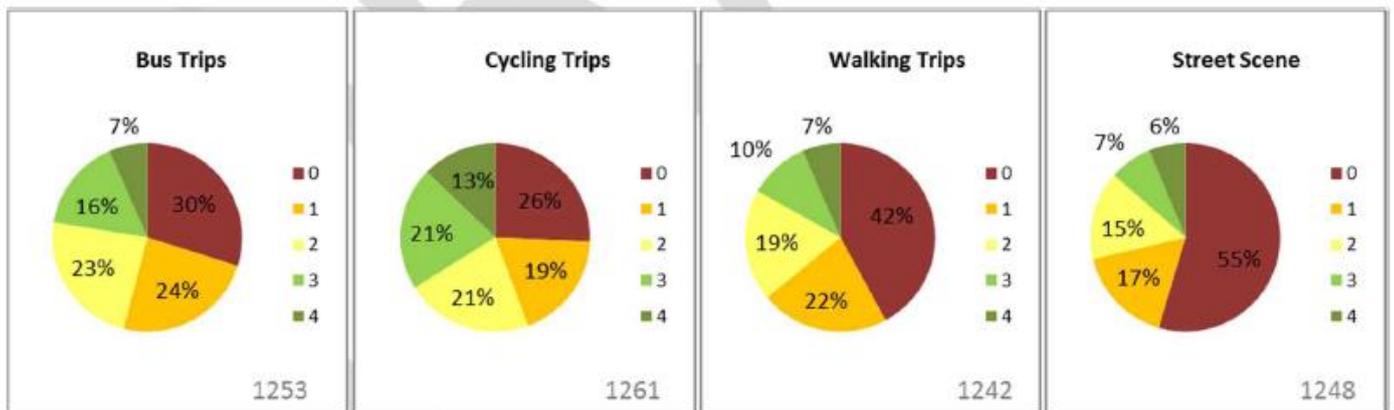


APPENDIX 1: CONSULTATION HEADLINE RESULTS AND EMERGING ISSUES

Improvement rankings: 'Do Maximum'

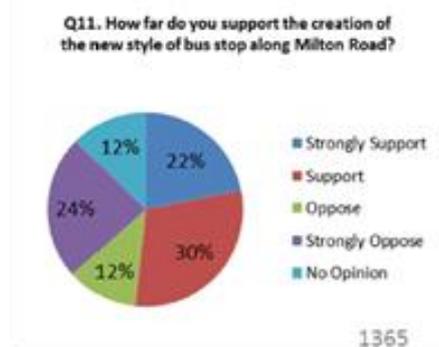
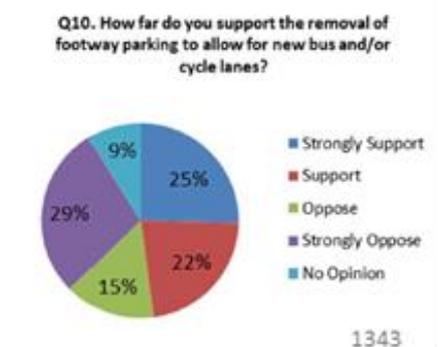
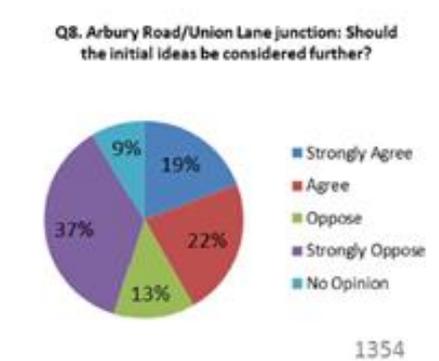
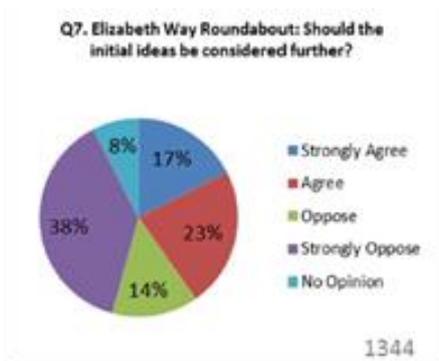


Improvement ranking: 'Do Something'

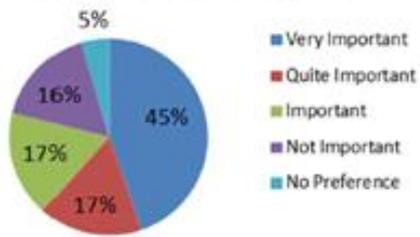


KEY

0 = No improvement 1 = Little improvement 2 = Moderate improvement 3 = Significant improvement 4 = Very significant improvement



Q12. How important is it to enhance the street scene, where possible, on Milton Road with new landscape areas, better surfacing materials, new verges and tree planting?



1315

EMERGING ISSUE	OFFICER COMMENT
<p>Banned Turning Movements [No right turns into Gilbert Road and Arbury Road, No left turn into King's Hedges Road] Impact of displaced traffic on side roads / inconvenience to local trips / lack of accessibility to schools and businesses</p>	<p>There is strong opposition to the various initial ideas for banned turns based on the inconvenience this would cause and the risk of traffic being displaced to residential streets. These concerns need to be weighed against the benefits of reduced delays if the banned turns were implemented.</p> <p>In light of the consultation, it may be better to address these junction delays through re-design work rather than by movement restrictions, therefore, the ideas for banned turns should be set aside and only reconsidered if future modelling work over the summer period shows a clear need for reconsideration.</p> <p>Despite a generally negative response, it is felt that the access restrictions at the Union Lane junction are important in achieving reliable and reduced bus journey times and improving conditions for cycling. Therefore these measures should be developed further for consideration as part of the next consultation, despite a generally negative response.</p>
<p>Loss of Trees 26% of comments mentioning trees / 70% of these opposed to current proposals / use mature trees if trees replaced / impact on air quality</p>	<p>The impact on the street scene, in particular highway trees and verges, of carriageway widening to create space for further bus and cycle lanes is a significant issue of local concern.</p> <p>The 'Do Maximum' option would achieve more benefit for buses and cycling than the 'Do Something' option but the difference in street scene impact between each option is considered significant. Therefore it is felt that that the 'Do Maximum' option should be set aside and the 'Do something' option taken forward for further development and future detailed consultation.</p> <p>There may be a requirement to use land outside the existing highway boundaries and this aspect would need careful assessment and direct consultation with the relevant landowners, if this proved to be the case.</p>
<p>Bus Lanes and Bus Services Bus lanes not justified by low number of buses / consider tidal bus lanes / review location of some stops / poor service for local residents</p>	<p>As identified in earlier reports, the number of buses using Milton Road is expected to double as planned growth takes place.</p> <p>The local concerns over the lack of access to bus services that use Milton Road is not an issue directly linked to the design of the project but the future provision of bus services along Milton Road and other key access routes is a matter that is being considered through ongoing liaison and discussion between the Greater Cambridge City Deal and bus operators.</p> <p>The potential use of tidal bus lane options is explored in this report.</p>

<p>Cycleway design 25% of responses discussed some element of the cycleways proposed in either option / Of these 85% were in favour of improvements / mixed views on cycle priority at side roads / concerns over loss of off-road facilities for school trips</p>	<p>The initial ideas put forward provide the potential for significant improvements for cyclists using Milton Road. As part of further work consideration will be given how an off-road cycleway facility might be retained on the west side of the corridor between Arbury Road and Gilbert Road</p>
<p>Closure of Union Lane 16% of further comments made reference to the proposals at Union Lane / access to medical centre / impact on local accessibility</p>	<p>Closing off motor vehicle access at the Milton Road end has the potential to reduce traffic levels in Union lane and to improve conditions for cycling and walking but may also increase traffic on the alternative routes used by displaced traffic. This aspect would be assessed in detail for consideration at the next consultation.</p>
<p>Removal of Elizabeth Way roundabout Concerns over / potential for improved cycle safety / impact on access to Highworth Avenue</p>	<p>Replacing the roundabout with traffic signals will improve cycle and pedestrian safety and allow more priority for bus movements. The amount of traffic displaced by closing off direct access/egress for Highworth Avenue will be small but would create inconvenience for car based trips by local residents by the longer routes that would need to be used. This aspect would be assessed in detail for consideration at the next consultation.</p>
<p>Walking trips Lack of maintenance of footways Need for additional crossing points</p>	<p>Highway maintenance matters are not a matter directly germane to the project but it is intended that the improvements developed through the project will provide higher quality and better constructed footways which will lessen future maintenance needs</p> <p>As part of the next stage in developing a detailed scheme design, current crossing facilities will be reviewed and consideration given to the need for additional crossings based on consultation feedback.</p>

APPENDIX 2: ALTERNATIVE PROJECT IDEAS

Alternative Idea / Suggestion	Frequency of idea/suggestion	Comment
Alternative cross section layouts to reduce or eliminate the need to remove trees	33%	Various options based on a three lane cross section are assessed in this report to identify the optimum layout for bus improvements. It is not possible to provide a bus lane(s) and segregated cycle facilities without road widening along the corridor which will inevitably impact on some highway trees. Other areas for tree planting will be sought as part of the next stage of design.
Increase the number of services that stop at bus stops	11%	Bus operators are responsible for deciding which services use which stops although the concerns over local access to bus services are being discussed as part of an on-going dialogue between the City Deal and bus operators.
Retain Elizabeth Way roundabout to enable vehicle to turn round, so that they can approach junctions from the opposite side	10%	The need for vehicles to turn round will be significantly diminished by the setting aside of the initial ideas for banning turns at Arbury Road and Gilbert Road.
Create clear cycle lanes at signalised junctions	9%	Detailed junction design work will aim to provide clear and user friendly cycle lanes, wherever possible.
Propose more crossings on Milton Road	8%	At this stage no new crossing are proposed although some existing crossings will be improved and/or relocated
Introduce a congestion charge	7%	This idea has been considered as part of the Cambridge Access and Capacity Study (see meeting agenda)
Consider tidal (timed two-way) bus lanes	6%	This report considers the potential use of tidal bus lane options
Relocate bus stops away from signalised junctions to reduce congestion	4%	Where the proximity of a bus stop is likely to impact on the efficient operation of the junction consideration will be given to relocating the stop
Improve current and maintain future on footways and cycleways	4%	The initial project ideas would significantly improve the quality of footways and cycleways. The new infrastructure created by the project will be maintained by the County Council, as Highway Authority, within the budget that it is able to allocate to highway maintenance.

Introduce residents only parking on roads off Milton Road to enable easier parking for residents and dis-incentivise driving	4%	Additional parking management measures will be considered for side roads along Milton Road which could include residents only parking bays to ensure adequate space is available for local residents.
Remove the charge for parking at Park & Ride sites	3%	On its own, this is unlikely to achieve a significant reduction in traffic delays or improve the performance of bus services.
Improve lighting along Milton Road	2%	Improvements to lighting along Milton Road are to be undertaken by the County Council as part of its Private Finance Initiative (PFI) programme.
Design cycleways in the same way as Hills Road	2%	The initial ideas for improving cycling facilities are based on the design concepts used on Hills Road
Explore alternatives to buses such as trams/light rail	2%	These are unlikely to be cost effective in a city the size of Cambridge. The need to provide priority for public transport would remain.
Consider Milton Road and Histon Road as one way roads to and from the A14	2%	Under any such arrangement there would be a need to develop contraflow facilities for cycling and buses to maintain road network connectivity. The impact on local trip convenience would be significant.
Increase cycle awareness of the Highway Code and enforce consequences to those that do not obey it	1%	This is not a matter germane to the development of the project
Consider underpasses for cyclists and pedestrians at major junctions	1%	Adequate highway space does not exist at junctions along Milton Road to allow the provision of underpasses. Underpasses are often unpopular options for pedestrians and cyclists and are not considered cost effective or desirable solutions in the context of this project.

APPENDIX 3: COMPARISON OF BUS LANE OPTIONS

BUS JOURNEY TIMES (2031): Journey time (A14 interchange to Mitcham's Corner junction) in seconds

OPTION	AM PEAK		PM PEAK	
	Inbound	Outbound	Inbound	Outbound
'Do Nothing'	487	888	467	1557
'Do Maximum' Almost continuous inbound and outbound bus lanes	379	375	393	310
'Do Something' Inbound and outbound bus lanes on approaches to key junctions	388	416	321	348
Tidal flow Option A Reversible peak period central bus lane	487	595	500	368
Tidal flow Option B Alternating peak period kerb side bus lane	342	675	505	357

Note: the results for Tidal Option A are influenced by local service bus trips which more likely to use the traffic lane rather than the bus lane given the need to access bus stops

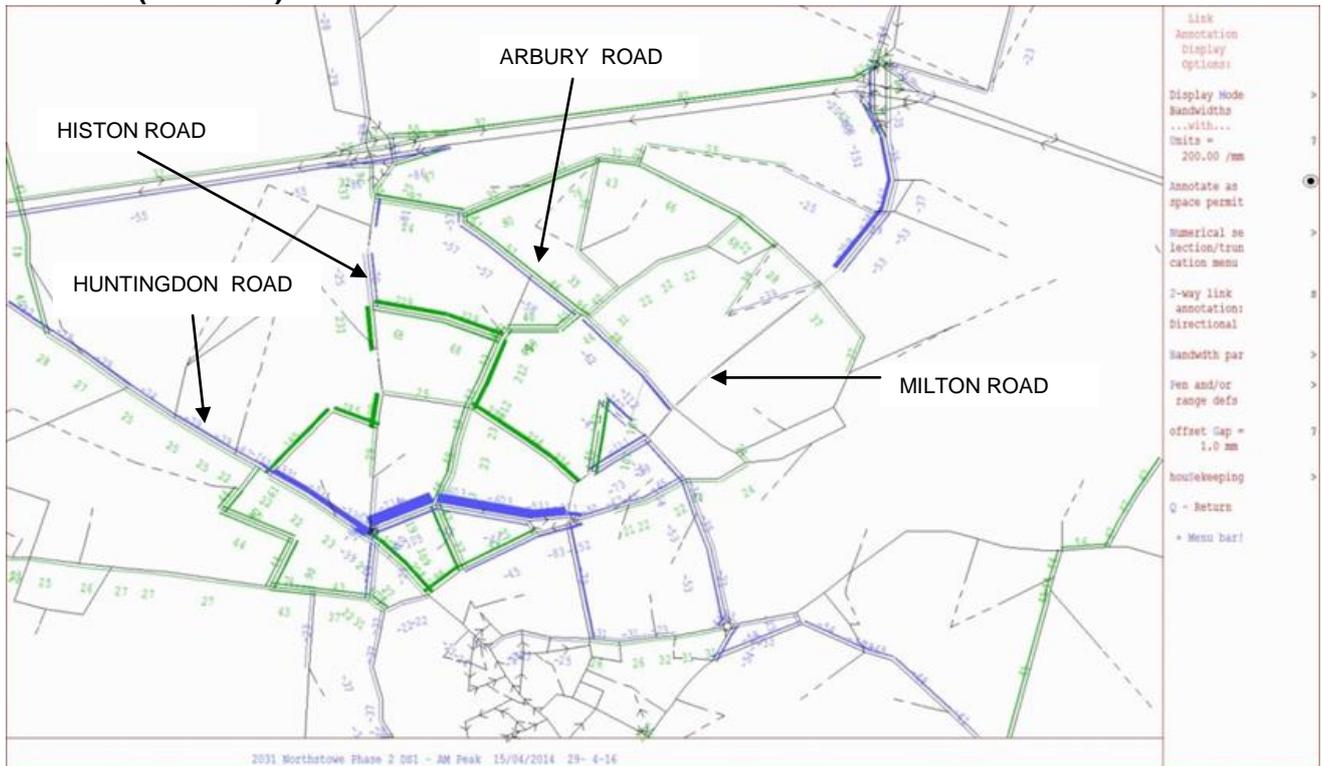
Option	Benefits to bus services	Impact on urban landscape	Risks
'Do nothing'	Bus delays increase and reliability reduces as traffic levels and delays grow particularly in the evening peak period	Existing urban landscape retained	Failure to deliver new transport infrastructure will adversely impact on economic and housing growth Quality of the highway environment reduces as traffic delays increase and air quality reduces
'Do Maximum' Almost continuous inbound and outbound bus lanes	Facilitates the shortest bus journey times	Removal of a large number of highway trees and verge areas with or without cycle lanes with limited opportunities for replanting on the highway perhaps near junctions Potential for new tree planting to be offered within frontage properties	Wider carriageway creates more severance of the local community

<p>‘Do Something’ Inbound and outbound bus lanes on approaches to key junctions</p>	<p>Provides less bus journey time savings than ‘Do Maximum’ but better overall savings than tidal flow options</p>	<p>Coupled with cycle lanes on each side would require the removal of a large number of trees and verge areas</p> <p>Offers opportunities for new tree planting and other green landscaping within the highway throughout the route albeit not always on each side of the road, resulting in a healthier tree stock for the future</p>	<p>Bus lanes not long enough to ensure buses always bypass traffic queues</p>
<p>Tidal flow Option A Reversible peak period central bus lane</p>	<p>Bus journey times longer than ‘Do Maximum’ Better journey time savings in the peak flow direction but taken overall provides less bus journey time benefits than the ‘Do Maximum’ and ‘Do Something’ options</p>	<p>Coupled with cycle lanes on each side would require the removal of a large number of trees and verge areas</p> <p>Offers opportunities for new tree planting and other green landscaping within the highway throughout the route albeit not always on each side of the road, resulting in a healthier tree stock for the future</p> <p>Significant visual impact of gantry signing throughout the route</p>	<p>Failure to secure Department for Transport approval for gantry signing system</p> <p>Increase risk of road collisions if drivers/riders fail to understand lane changing operation</p> <p>Potential for litigation if vehicle conflicts occur when lane changing occurs</p> <p>Inadequate space to accommodate gantry signing foundations</p>
<p>Tidal flow Option B Alternating peak period kerb side bus lane</p>			

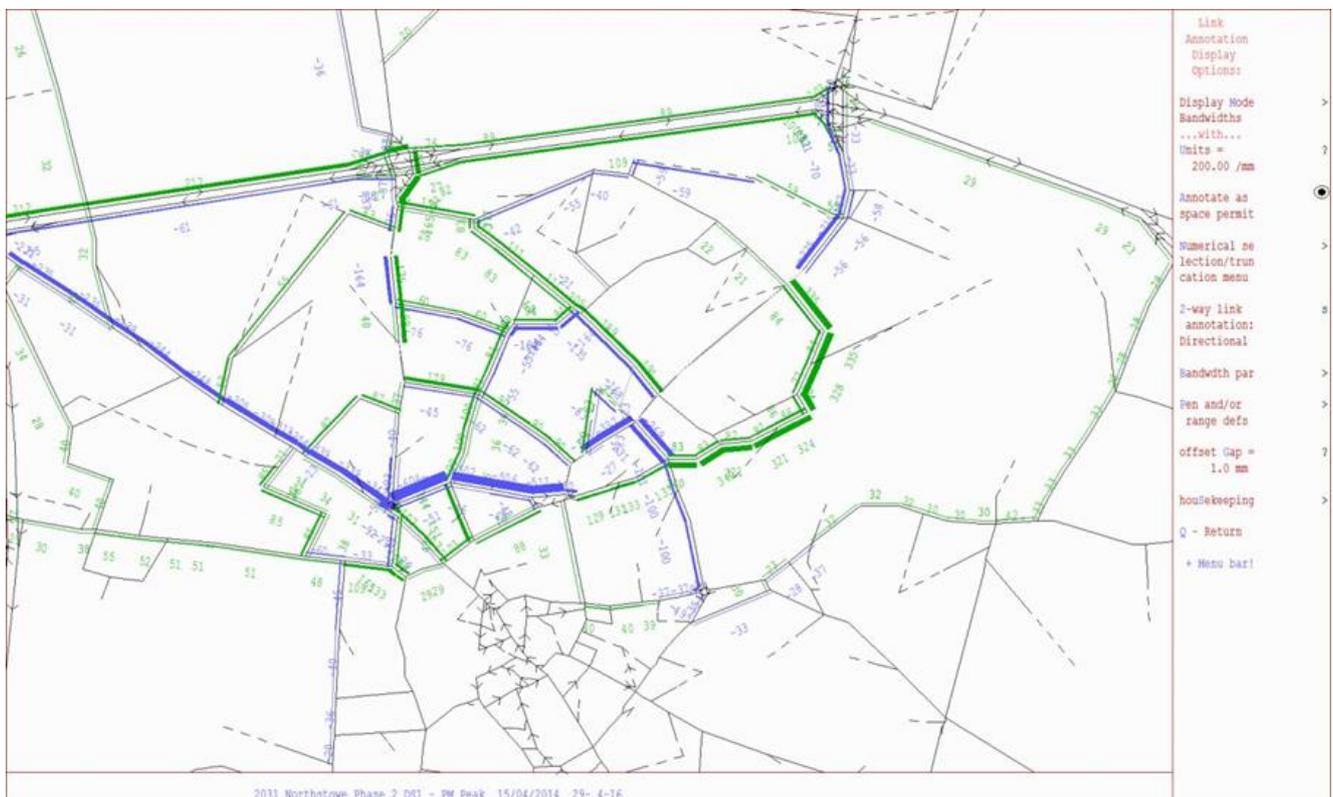
APPENDIX 4: CHANGES IN ROAD NETWORK TAFFIC FLOWS

Key: Blue shows reductions, Green shows increases

AM Peak (8am-9am)



PM Peak (5pm-6pm)



APPENDIX 5: PREFERRED OPTION KEY ELEMENTS

	Design element	Rationale for inclusion
Bus Lanes	<p>Inbound side: On approach to Green End Road Between Woodhead Drive and Arbury Road On approach to Elizabeth Way and Gilbert Road junctions Between Gilbert Road and Mitcham's Corner</p> <p>Outbound bus lane: On approaches to Elizabeth Way and Arbury Road junctions Between Woodhead Drive and King's Hedges Road On approach to the Busway junction</p> <p>Early bus detection on all approaches to signal controlled junctions</p>	To optimise bus progression along the route
Cycleways	<p>Inbound side: Almost continuous segregated cycle lane from approach to Green End Road junction through to Mitcham's Corner</p> <p>Outbound side: Almost continuous segregated outbound cycle lane from Mitcham's Corner to Lovell Road junction Bi-directional segregated cycle lane between Lovell Road and Busway junction Segregated cycle lane from Bus way junction to Science Park junction <i>Explore option of off-road facility between Ascham Road and Arbury Road</i></p> <p>Floating bus stops where space permits</p>	To provide a higher standard of cycle facility with greater segregation from motor vehicles and pedestrians, where possible

Walking	Re-designed side road junctions with at grade crossing points and reduced junction radii	To give greater priority to cycle and pedestrian movements across side roads and to create opportunities for localised street scape enhancement
	Upgrade/explore relocation of signal crossings near Lovell Road and Kendall Way	To replace aging signal equipment and to enhance the convenience of transverse cycling and walking trips
	Upgraded footway surfaces	It is expected that most footway surfaces will be disrupted by construction work and utility service diversions which creates the opportunity to strengthen and resurface footways to achieve a higher standard of finish to improvement conditions for pedestrians, particularly those with less/limited mobility
Junctions	Removal of Elizabeth Way roundabout and installation of traffic signals based on a three arm layout <i>To simplify the layout and signal sequence of the junction it is also intended to explore an option of banning the right turn into Elizabeth Way to further increase priority for bus, cycle and pedestrian movements.</i> <i>A further option that retains the fourth arm (Highworth Avenue) will also be developed for comparison purposes</i>	To signalise the junction to give greater priority to bus and cycling movements, to improve pedestrian and cycle safety at an accident black site and to create opportunities for localised streetscape enhancement
	Closure of Union Lane for motor vehicle access and egress	To simplify the operation of the junction to increase overall main road green time for buses to reduce delays, to improve safety for cyclists and pedestrians as well as creating opportunities for localised streetscape enhancement
Parking and traffic management measures	Additional restrictions to prohibit all parking on all parts of the highway (other than in laybys) and peak period loading restrictions on certain sections Additional parking controls in side roads to accommodate displaced residential parking Measures on alternative routes to mitigate, where necessary, displaced traffic	To ensure that parking and loading/unloading do not adversely affect traffic progression and safety on the main road and to accommodate local parking needs To mitigate any unacceptable changes in traffic flow in residential streets

APPENDIX 6: SECOND PUBLIC CONSULTATION PROCESS

PRINCIPLES

The consultation will be undertaken in accordance with City Deal the City Deal approach to consultation; that the consultation principles of the Authority leading on the project should apply.

AIMS

To:

- Engage with key stakeholders, the public and all interested parties in the consultation on proposals for bus priority, walking and cycling improvements.
- Ensure that messages reach the widest audiences, that all voices are heard and that channels are enabled for excellent 2-way communications.
- Provide unbiased, appropriate, timely, and clear information in plain English on the proposed options for the routes.

ENGAGEMENT

Public Consultation to run from 1st November through to 19th December, consisting of the following main elements:

- Pre-consultation advance notification to households and businesses along both routes and the surrounding areas
- Pre-consultation briefings for local councillors and stakeholder groups
- Briefing for City Council North Area Committee
- Information leaflets delivered to households and businesses along both routes and the immediate side streets
- Press release/social media/web presence using www.greatercambridgecitydeal.co.uk
- On-line questionnaire/survey
- Staffed public exhibitions at venues in proximity to both corridor areas
- Information made available at Milton, Babraham, St. Ives and Longstanton Park & Ride sites
- Information displays in shelters at bus stops along both routes and in the city centre
- Direct mail/e-mail
- Information in libraries, GP surgeries and other places of interest with passing trade
- Work with local schools and colleges

Post-consultation

- Analyse results
- Provide consultation outcomes through website, press release, direct mail/e-mail, local newsletters and magazines, social media.
- Bring a report back to the Executive Board to approve detailed scheme designs for statutory processes.

KEY MESSAGES

The key messages for the Histon Road and Milton Road routes will be layered over the background of the vision for the Greater Cambridge City Deal as a whole. The vision will be strong part of the consultation information so that people know how this project fits with other priorities for the City Deal:

- Greater Cambridge City Deal (GCCD) brings together 5 organisations in a ground-breaking new partnership to create the conditions necessary to unlock the potential of Greater Cambridge.
- The City Deal aims to secure hundreds of millions of pounds of additional funding for investment in transport infrastructure to support high quality economic and housing growth over the coming decades. £100m of funding will be made available in the five years from April 2015. If certain conditions are met, we will be able to secure up to a

further £200m from April 2020 onwards and up to a final £200m from April 2025 onwards.

- Significant new investment for transport infrastructure will be brought to the area through the Greater Cambridge City Deal. Funding will be used to make it easier to get to work, and to move between the business and research centres. More sustainable transport methods will be prioritised by increasing road space for pedestrians, cyclists and public transport users and enabling more people to use public transport for at least some of their journey.
- The City Deal will aim to deliver the development strategy for Greater Cambridge contained in the submitted Cambridge and South Cambridgeshire Local Plans and the supporting transport infrastructure identified in the Transport Strategy for Cambridge and South Cambridgeshire.
- The City Deal will provide a huge boost for the local economy, and will kick start development and the creation of jobs by significantly improving accessibility and journey times.
- Histon Road and Milton Road bus priority aims to deliver high quality passenger transport, in terms of reliability, frequency and speed, complemented with good quality cycling and pedestrian facilities and an enhanced street scape.
- The consultation is a continuation of the delivery process and there will be further opportunities to comment as part of the statutory process stage of the project.

ON-LINE QUESTIONNAIRE/SURVEY

A questionnaire will be provided for each corridor which will seek views for respondents on how well the scheme design delivers each project objective and views on preferences for any options put forward. This will inform a further review of the design for each route.

STAKEHOLDERS

The consultation will seek to ensure that all users of Histon Road and Milton Road have the opportunity to have their say. Whilst the use of on-line techniques will be the main focus for responding, the consultation process will need to be sufficiently flexible to respond to the needs of those with disabilities.

