

28 November 2018

To: Members of the Greater Cambridge Partnership Executive Board:

Councillor Lewis Herbert	Cambridge City Council (Chairman)
Councillor Ian Bates	Cambridgeshire County Council (Vice-Chairman)
Councillor Aidan Van de Weyer	South Cambridgeshire District Council
Phil Allmendinger	University of Cambridge
Claire Ruskin	Cambridge Network

Dear Sir / Madam

This is a supplement to the agenda for the meeting of the **GREATER CAMBRIDGE PARTNERSHIP EXECUTIVE BOARD**, taking place on Thursday 6 December 2018 at 4pm.

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

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Agenda Item 5



FEEDBACK FROM THE JOINT ASSEMBLY MEETING 15TH NOVEMBER 2018

Report To: Greater Cambridge Partnership Executive Board

6th December 2018

Report From: Councillor Tim Wotherspoon, Chair, Greater Cambridge Partnership Joint Assembly

1. Overview

- 1.1. This report is to inform the Executive Board of the discussions at the Greater Cambridge Partnership (GCP) Joint Assembly held on Thursday 15th November 2018, which the Board may wish to take into account in its decision making.
- 1.2. Ten public questions were received. Six questions related to item six on the agenda, the Cambourne to Cambridge Better Public Transport Scheme and four questions related to item eight, Histon Road Bus Cycling and Walking Improvements.
- 1.3. Four reports were considered and a summary of the Joint Assembly discussion is set out below.

2. Cambourne to Cambridge Better Public Transport Scheme

- 2.1 The Joint Assembly noted that the Cambourne to Cambridge Local Liaison Forum (LLF) had met on 14th November 2018 to discuss the proposals. Helen Bradbury, LLF Chair attended the meeting to present a summary of the discussion. The LLF had expressed concerns about the timing of LLF meetings and questioned the value of public consultation. In addition to a number of further comments and requests for information, the LLF had agreed three recommendations calling for a decision on the preferred route to be deferred until there was greater clarity on the Cambridge Autonomous Metro (CAM); asking for a northern off road comparator to be developed; and early progress on an in-bound bus lane on Madingley Road.
- 2.2 The Joint Assembly had a lengthy debate on the proposals and expressed mixed opinions, with no consensus view emerging.
- 2.3 Some members spoke in support of the proposals and hoped that the Executive Board would progress this scheme. It was pointed out that the development strategy adopted by the GCP aimed to provide the 'best in class' public transport available and it was suggested that the proposals set out in the paper achieved this. There was a clear need for a major transport route that could meet the needs of existing communities as well as the residents of the new houses planned along this western corridor. The potential impact on Coton was acknowledged, but the wider benefits and local plan requirements were recognised, which

meant the public transport solution now needed progressing. The prospect of getting from Cambourne to Cambridge in less than 30 minutes was welcomed and it was suggested that this was the sort of step change people wanted to see. From a business perspective journey time was paramount. Referring to the arguments for a northern route, it was pointed out that these had already been listened to and the route had been discounted. With that in mind it was suggested this should not be revisited. It was pointed out that Maddingley Road could not be expanded to the extent that was needed to accommodate the commuting traffic from existing and future new developments outside the city.

- 2.4 Some members raised concerns about the proposals, referring to the possible introduction of an interim solution. As Cambridge Autonomous Metro (CAM) compliance was now a policy requirement there was a feeling that it was necessary to compare two schemes that were both compliant. Questions were asked about the choreography, process and timeframe for taking forward the proposals and it was suggested that an interim solution should be developed, leading to long term optimal alignment. This could cost significantly less and would allow more time for a longer term CAM system to be developed. If an interim solution looked attractive it should be pursued, even if it caused delay. Dealing with the urgent problem would buy time and that would be the best way to future proof any decision taken. Concern about some elements of the planned mitigation was also expressed.
- 2.5 The importance of transparency was emphasised. It was suggested that old ground should not be revisited but it would be useful for a summary of the discussions that had already taken place on this scheme to be available.
- 2.6 It was suggested that cycling improvements should be explored as this might offer an alternative and some quick wins.
- 2.7 Further information was requested on how the wider economic benefits had been assessed. In addition it was asked if the Red, Amber Green (RAG) scoring of public acceptability could be more granular and whether a sensitivity analysis could be done. It was also asked why the northern route had been rejected when the Arup report suggested that it had been competitive.

3. City Access and Bus Service Improvements

- 3.1 Members welcomed the report as a first step in transforming city access and developing a world class public transport network for Greater Cambridge. The Joint Assembly was supportive of these proposals but commented on the need to ensure the public transport offer included provision for villages not on the CAM network and the importance of walking and cycling as part of the mix of options when looking at competitiveness of different travel modes. It was also important to take account of people travelling from a wider geographical area, some of whom would not necessarily be travelling into the city centre.
- 3.2 Members expressed a range of views on the options for demand management. They emphasised the importance of bringing to life the public transport improvements during the proposed engagement and using this to ask meaningful questions about both public transport and demand management choices. It was important to engage with local businesses and traders. Fast and cheaper public transport should be the main aim and proposed solutions should be designed with that in mind.

- 3.3 A number of members highlighted the need for this to be progressed as soon as possible. City access was the number one issue for businesses and urgent action on this was required and further delays in reaching a decision must be avoided. It was suggested that there was a tendency for everyone to think this was someone else's problem, when in fact it was a problem for everyone.
- 3.4 The Joint Assembly commented on the importance of asking the right questions resulting in meaningful answers, which would enable Councillors of all 'flavours' to understand where the public was on this issue. It was suggested that there was a huge temptation for people to be divisive about this subject, but there was evidence in the report to suggest there were potential benefits for everyone. It was a shared problem for people living inside and outside the City. Divisive politics should be avoided. The questions and supporting material were key and should be carefully pitched to engage with people living outside Cambridge as well as those living in the city. The possibility of setting up a Citizens' Assembly was welcomed.

4. Histon Road Bus Cycling and Walking Improvements

- 4.1 The Joint Assembly received a statement from City Councillor Mike Todd-Jones, Chair of the Histon Road LLF, which summarised public consultation and LLF discussions on the proposed amendment and modifications to the Histon Road proposals. Councillor Todd-Jones drew attention to the fact that while the LLF had been generally satisfied with the modifications, changes to the Histon Road/Gilbert Road/Warwick Road junction were contentious and did not have the support of the LLF. He added that given the contentious issues that remained a further LLF meeting had been arranged in advance of the December Executive Board meeting. This meeting would take place on Monday 26th November at 6.00 p.m. at the Meadows Community Centre.
- 4.2 The Joint Assembly welcomed the fact that overall the proposals had public support, but was concerned to hear that there was widespread opposition to the planned changes to the Gilbert Road junction. It was noted that this related to changes made following the public consultation and had resulted in significant public concern and negative feedback about engagement. It was of particular concern that the Cambridge Cycling Campaign had withdrawn its support for the proposals. The Joint Assembly was concerned about this apparent loss of faith and acknowledged that a key aim of the proposals for Histon Road was to make the route safer for cyclists. It was hoped that outstanding concerns would be addressed at the forthcoming LLF meeting. This would enable the points raised to be reviewed and determine whether further improvements to the scheme would be possible, ideally reaching a segregated solution that was acceptable to all concerned.

5. Quarterly Monitoring Report

- 5.1 The Joint Assembly noted progress on the Greater Cambridge Partnership programme, as detailed in the report. In addition to the routine budget and performance monitoring information, the report contained an overview of cycling projects and an update on the recent skills procurement exercise. In relation to the latter, the Joint Assembly was reassured that officers were working with procurement experts to review the process and documentation to help understand why the exercise had not been successful and would take steps to ensure a more positive outcome from the next exercise.

- 5.2 Referring to the Smart Places progress report it was noted that phase 2 status was shown as 'green' although detailed actions had yet to be agreed. It was suggested this be reviewed at the next Working Group. The same report referred to a bid for 'C-CAV2' the next round of funding for development of autonomous vehicles. It was noted that if successful this would potentially extend the scope outside the city into surrounding villages, including the potential development of autonomous vehicle hubs. Consideration would need to be given to how to engage these communities in a wider debate on this.

Agenda Item 8



HISTON ROAD: BUS, CYCLING AND WALKING IMPROVEMENTS FINAL DESIGN

Report to: Greater Cambridge Partnership Executive Board

6th December 2018

Lead Officer: Peter Blake - GCP Transport Director

1. Purpose

- 1.1. The Histon Road scheme supports the Greater Cambridge Partnership's (GCP's) transport vision of implementing improved public transport routes to encourage more people to use sustainable transport modes instead of the private car. This is part of a wider public transport strategy which aims to support the feasibility of delivering proposed housing and employment growth at Cambridge Northern Fringe, Ely, Cambridge Science Park, Northstowe and Waterbeach (collectively around 27,000 new homes and 9,800 new jobs between 2011 and 2031).
- 1.2. This report sets out the final design for Histon Road that includes modifications to the previously approved design following public consultation feedback. In developing the final design, the consultant's design team has worked closely with the County Council's road safety, signals, and cycling projects teams to ensure that all aspects conform to current regulations, are considered safe and provide a good balance in terms of functionality for all users.
- 1.3. The report also presents the landscaping strategy and designs for the various landscape areas along Histon Road.
- 1.4. These proposals have been developed following further engagement with the Local Liaison Forum (LLF) in October 2018 and at a further meeting on 26 November.

2. Recommendations

- 2.1. The Executive Board is recommended to:
 - i. Support the final design for Histon Road shown in the Plans in Appendix B as a basis for moving to the detailed design stage, including preparation of the final business case and contractor procurement.
 - ii. Support the Landscaping strategy as set out in Appendix A.

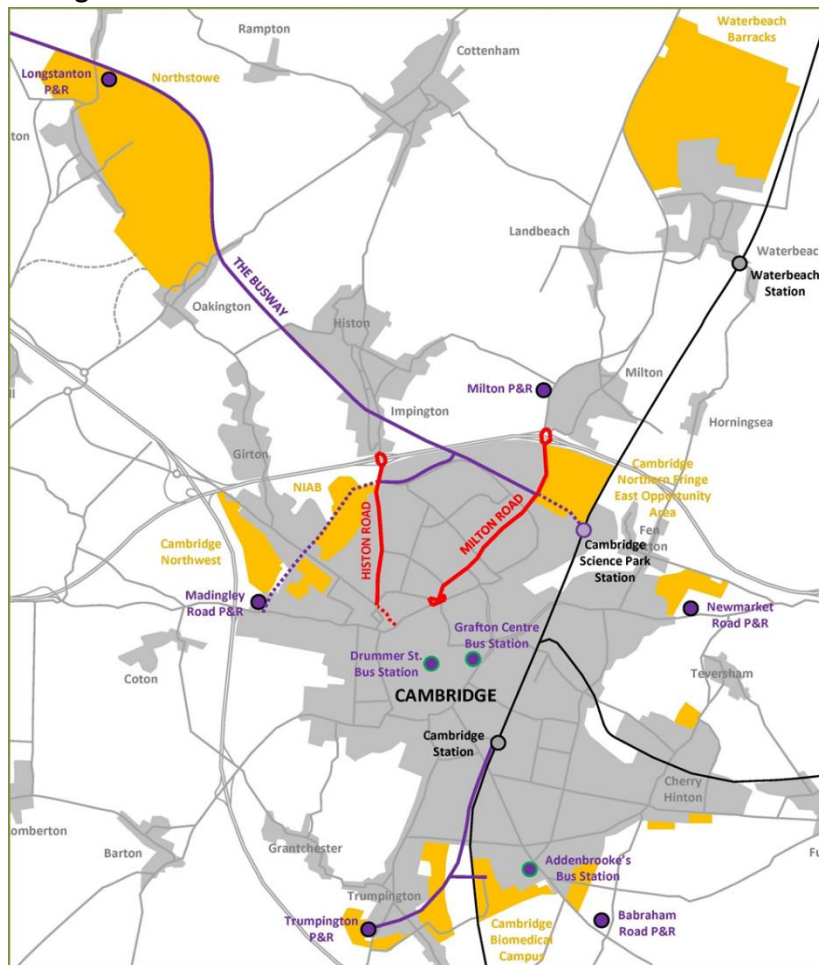
3. Officer comment on technical issues raised at Joint Assembly

- 3.1. The Joint Assembly reflected on concerns around post consultation modification to the Gilbert/Warwick road junction that were put in place to address safety issues with the previous design.
- 3.2. Officers noted these strong concerns and have therefore worked to develop a new segregated solution that addresses the safety issues with the previous layout and which is much more consistent with the design that was consulted on. This solution supported by the County Council's road safety, signals and cycling projects teams and was well received at the Histon Road Local Liaison Forum held on 26th November 2018.

4. Key Issues and Considerations

- 4.1. The project has the following key objectives:
 - a) Comprehensive priority for buses in both directions wherever practicable;
 - b) Safer and more convenient routes for cycling and walking, segregated where practical and possible;
 - c) Enhance the environment, streetscape and air quality;
 - d) Additional capacity for sustainable trips to employment/education sites;
 - e) Increased bus patronage and new services; and
 - f) Maintain or reduce general traffic levels.
- 4.2. **Figure 1** indicates the length of Histon Road under consideration and shows its setting within the wider strategic context. The report considered by the Executive Board on 3rd November 2015 sets out the strategic and planning background, and broader context for the scheme.

Figure 1: Histon Road in the Wider Area Context



- 4.3. In March 2018, the Executive Board approved the preliminary design for Histon Road for public consultation. The consultation took place in the summer of 2018. Consultation leaflets were delivered to over 15,000 houses in north Cambridge and the village of Histon. Three formal consultation events took place that were all well attended. Over 900 responses were received. The consultation analysis report has been published online and is included as a background paper. In summary, all aspects consulted on received more support than opposition. The qualitative aspects of the consultation were of significant value in fine-tuning the final proposals.

5. Options and Emerging Recommendations

- 5.1. Following the analysis of the consultation feedback and extensive dialogue with the County Council's road safety, signals and cycling projects teams, modifications have been made to the design. The following paragraphs set out the key changes that have been made and with reasons. A summary of these changes is presented in Appendix C.

Design Modifications.

Histon Road Junction with Victoria Road

- 5.2. Modifications to the design focus mainly on the provision for cyclists at this junction. Feedback suggested that the off road cycling provision proposed at the junction of Histon and Victoria Road would only be used by the minority of cyclists with the majority more likely to stay on road due to the longer "green" time afforded, compared to the off road

crossing option. The current design addresses these comments by readdressing the balance and providing an improved on road solution at this location, whilst maintaining the ability for cyclists to navigate this area using an off road shared use pavement and crossing.

Victoria Road approach to both Histon Road and Huntingdon Road Junctions

- 5.3. Road safety officers were concerned that the lack of signal control for cyclists within the junction area would potentially place them at conflict with turning vehicles, other cyclists, and pedestrians. The current design addresses this by placing the cycle lanes at carriageway level, thus ensuring cyclists follow the same signal control as vehicles.

Parking Bays, Crossing, Bus Stops and Loading Bay near Cranwell Court

- 5.4. Feedback from the consultation focussed on the importance of maintaining some pay and display parking at this end of Histon Road to support local business. Road safety officers also recommended moving the proposed pedestrian crossing further from the junction to enhance the visibility of the crossing signals to drivers turning into Histon Road from Victoria Road. They also recommended moving the bus stop further from the junction to avoid blocking.
- 5.5. This combined feedback has led to a re-design of how we allocate some of these requirements in this small area. The parking bays have been retained as has the small loading area for the supermarket on the inbound side of Histon Road (denoted by single yellow line and signage). The crossing and the outbound bus stop has been moved further from the junction. With this configuration, there is no space to safely include a new inbound bus stop, instead the current pairing with the inbound bus stop just around the corner on Victoria Road is maintained.

Bus Stops near Linden Close

- 5.6. The bus stops in this location have been re-instated into the design. Feedback from the consultation highlighted the fact that these stops serve many people living in the Benson Road area via the footpath that provides access to Histon Road.

Pedestrian Crossing and Bus Stops near Akeman Street

- 5.7. A new location for a pedestrian crossing near Akeman Street was strongly supported as it provides improved access between the residential areas access by Akeman Street and the shopping areas on Histon Road. However, the very close proximity between this proposed crossing and the proposed (existing) crossing near to the Post Office was raised as an issue.
- 5.8. Following further engagement with the LLF and discussions with road safety officers about the positioning of bus stops in relation to crossing points and junctions in this area, the design has been developed including a new crossing point at the Akeman Street location. In order to locate the crossing in this position, the outbound bus stop has been moved to the nearest safe location to the Post Office and the nearby proposed floating bus stop has been removed from the design.

Histon Road/Gilbert Road/Warwick Road Junction

- 5.9. The proposed junction design was largely supported through the consultation, although some concern was raised that slightly more width should be provided for cyclists using the on-road option through the junction. Road safety, signals and cycling projects officers also

recommended modifications to the design to improve functionality, flexibility, and in particular accessibility for visually impaired pedestrians.

- 5.10. The junction design that has been presented for approval addresses the previous issues while improving the segregation between cyclists and pedestrians. It removes the conflict points that we present in the previous design and provides much larger spaces for pedestrians to wait to cross the road. More space is also provided on carriageway for commuter cyclists traversing Histon Road given that many cyclist who currently commute told us that they would prefer to use an on road option at this junction.

Crossing near Carisbrooke Road

- 5.11. The public consultation indicated a preference for a new signalised crossing to be located near to Carisbrooke Road. The position of this new crossing is strategically important as it will serve pedestrians and cyclists accessing Histon Road from Darwin Green via a planned link at this location. The new crossing has been included in the current design and requires the proposed bus lane to be shortened slightly as a result.

Footpath Widths

- 5.12. Slight alterations have been made to footpath widths to the north of Gilbert Road in order to ensure a more consistent 1.8m width.

Key Design Considerations

- 5.13. The final technical design is presented in **Appendix B** and key considerations of the scheme are detailed in the following sections of this report.

Junctions

- 5.14. Alternative designs for the 4 main junctions along Histon Road have been considered in detail. This work is supported by detailed traffic modelling in order to assess the benefits or impacts that the proposed designs will have. The modelling work demonstrates that in combination with other City Access proposals, the scheme will improve future journey times and reliability and reduce queuing at each of the key junctions along Histon Road, compared to an alternative 'Do Nothing' scenario of no change. A summary of each junction includes:
- **Victoria Road/Huntingdon Road** – the junction is severely constrained. It is very difficult to significantly modify the junction without affecting traffic flows. However, it has been possible to set out a design that improves the environment for both pedestrians and in particular cyclists, offering some separation from motorised vehicles in the area where there is a current conflict. These benefits seek to be achieved without adverse impact on the ability for traffic (including buses) to flow through what is a busy junction.
 - **Gilbert Road** – while the detail has been modified, the design continues to use many aspects of the alternative LLF design which offers significant benefit to cyclists by providing off road facilities in all directions. The design also offers on road advance stop lines for in/outbound commuter cyclists who may prefer to cross the junction on road due to the longer green time.
 - **Darwin Green** - the Darwin Green junction will be delivered by the developers and has already gone through a significant planning process. Officers are continuing the dialogue with the consultants/developers to ensure that the final design fits well with and follows the general principles of the proposed Histon Road scheme.

- **Kings Hedges Road** - officers have assessed the Kings Hedges junction and do not propose to make any changes to it aside from improving the cycle lane approach from the A14 junction which can be achieved without affecting the performance of the junction itself with regard to vehicle flows.

Bus Lanes and Bus Stops

- 5.15. A key aim of the project is to enhance bus priority on Histon Road. The design includes a length of inbound bus lane extending from Blackhall Road to a point 40m south of Carisbrooke Road. The bus lane is estimated to improve future inbound bus journey times in the peak by up to 2.5 minutes enhancing reliability of service.
- 5.16. It is intended that implementation of the scheme will look to include bus priority measures at the junctions in the form of bus detection and a subsequent hurry call on the signal sequence. At this stage the benefits from early bus detection at traffic signals have not been built into the traffic model.
- 5.17. The approximate location of existing bus stops has been retained. It is proposed that where width allows the scheme will incorporate floating bus stops. This follows extensive work that has been undertaken by the County Council in developing the design alongside disability groups, cycle campaign groups, and other stakeholders, including an independent study to demonstrate their effectiveness and safety. Where floating bus stops are proposed the designs aim to provide a minimum island width of 2.3m, and in most cases it has been possible to provide up to 2.5m, in order to allow adequate space for wheelchair users to manoeuvre.

Cycling and Walking

- 5.18. The provision of high quality cycling and pedestrian infrastructure is an important objective of this scheme. As well as improvements at junctions, the design includes improved cycle lanes along the length of Histon Road. Where the road is narrower, towards the southern end of the scheme, the aim is to provide an advisory 1.5m wide cycle lane on both inbound and outbound side of the road. The advisory cycle lanes progress into segregated lanes (Cambridge Kerb) as the road widens towards the Gilbert Road junction.
- 5.19. Between Gilbert Road and the Darwin Green junction the aim is to provide up to 2m wide segregated outbound cycle lane (1.5m minimum width in pinch points). On the inbound side of the road a 1.5m cycle path is protected by the bus lane for the majority of its length. The enhanced cycle infrastructure will improve safety and accessibility for cyclists but also address the current situation where vehicular flow is often disrupted due to the proximity of vehicles and cycles.
- 5.20. The aim is to provide 1.8m wide footpaths along the length of the scheme, where current kerb lines allow, with a 1.4m wide minimum in pinch points. Pedestrian improvements also include provision of a new crossing in close proximity to the junction with Victoria Road (timed with the junction signals so as to not delay buses), as well as formalising a crossing at Carisbrooke Road.
- 5.21. The scheme will include raised tables across the minor residential side roads to improve accessibility for pedestrians.

Removal of On-street Parking

- 5.22. In order to deliver highway improvements in the narrow southern section of Histon Road, it will be necessary to remove the current on street parking. This includes 31 resident parking bays that are part of the Benson Area Residents' Parking Zone (RPZ) and 11 pay and display parking bays. Removal of the on street parking is dependent on the ability to mitigate the impact, therefore, a detailed parking survey was undertaken within the area (the methodology agreed with the LLF in advance). The survey demonstrates that during the mornings and evenings there is sufficient space within the Benson Area RPZ to accommodate the displaced residents parking, created from the proposed removal of parking bays on Histon Road. However it is accepted that there would be a level of inconvenience introduced by this proposal, especially to those residents living directly along Histon Road.
- 5.23. A number of points were raised by local residents and businesses including the requirement for loading, unloading, deliveries and accessibility for disabled people. These points need to be considered in detail when the Traffic Regulation Orders (TROs) are developed. It is planned to address these issues through the use of loading restrictions, along Histon Road, at peak times only.
- 5.24. With regard to the current pay and display bays on Histon Road, officers are working with the County Council's parking team to incorporate new pay and display bays in Linden Close as part of the new Stretton Area RPZ.

Landscape and Environment

- 5.25. The design retains the line of trees running north from Gilbert Road to Carisbrooke Road. Following discussion with the Cambridge City Council arboriculture officer there is an understanding that if roots are damaged during construction there will be a commitment to replace any lost trees. It is worth noting that it will also be possible to retain much of the mature hedgerow to the north of Blackhall Road.
- 5.26. Designs for the four main landscaping opportunity areas were considered at a recent LLF workshop. These locations include Akeman Street junction, Gilbert Road/Warwick Road junction, and the junctions with Brownlow Road and Blackhall Road. A landscaping mitigation measure has also been set out to provide a new high fence and planting between Brownlow Road and Blackhall Road, replacing the existing hedgerow that currently screens a number of gardens on the outbound side of the road. The designs are set out in **Appendix A** alongside the landscape strategy for Histon Road.

Cost Benefit.

- 5.27. The consultants WSP have prepared a cost benefit analysis of the scheme which has indicated a benefit to cost ratio (BCR) in the range of 1.6 to 2.9.
- 5.28. The approximate current day capital cost for the preliminary concept design is estimated to be £6 million as reported to the March Executive Board meeting.

6. Next Steps and Milestones

- 6.1. Subject to the decision made by the Executive Board, officers plan to follow the broad programme as set out below:

December 2018

Appoint Consultant to undertake detailed design

January 2019	Commence Detailed Design
July 2019	Detailed Design Complete
August 2019	Appoint Contractor
Autumn 2019	Executive Board decision to award & commence construction contract
Autumn 2019	Commence Construction
Autumn 2020	Scheme Complete – this is the subject of further timetable work

7. Implications

Financial and other resources

- 7.1. The scheme development and implementation is funded by Greater Cambridge Partnership through City Deal funding.

Legal

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

Staffing

- 7.3. Project management is undertaken by Greater Cambridge Partnership. Design work is undertaken by consultants WSP.

Risk management

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

Equality and diversity

- 7.5. There are no equality or diversity implications in this report although they may emerge as the project moves towards the statutory process stage.

Climate change and environmental

- 7.6. 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 and communication

- 7.7. A programme of engagement with the Histon Road Local Liaison Forum has led to the Officer recommendations in this report. Officers will carry out further engagement with the Local Liaison Forum as part of scheme delivery.

List of Appendices

Appendix A	Landscaping Strategy
Appendix B	Final Technical Design Layout and Key Features

Background Papers

Title	Link
Executive Board agenda and minutes Nov 2015	http://scambs.moderngov.co.uk/ieListDocuments.aspx?CId=1074&MIId=6537&Ver=4
Executive Board agenda and minutes Jun 2016	http://scambs.moderngov.co.uk/ieListDocuments.aspx?CId=1074&MIId=6632&Ver=4
Executive Board agenda and minutes Nov 2017	http://scambs.moderngov.co.uk/ieListDocuments.aspx?CId=1074&MIId=6858&Ver=4
Executive Board agenda and minutes Mar 2018	http://scambs.moderngov.co.uk/ieListDocuments.aspx?CId=1074&MIId=7175&Ver=4
2018 Consultation Analysis Report	https://citydeal-live.storage.googleapis.com/upload/www.greatercambridge.org.uk/transport/transport-projects/Histon%20Road%20report%20v2.pdf

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Greater Cambridge Partnership

HISTON ROAD

Landscape Strategy





Greater Cambridge Partnership

HISTON ROAD

Landscape Strategy

TYPE OF DOCUMENT (VERSION) PUBLIC

**PROJECT NO. 70012012
OUR REF. NO. 181105-AJC**

DATE: NOVEMBER 2018

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QUALITY CONTROL

Issue/revision	First issue
Remarks	
Date	5 th November 2018
Prepared by	Andy Cocks
Signature	Andrew Cocks <small>Digitally signed by Andrew Cocks Date: 2018.11.05 16:10:15 Z</small>
Checked by	David Ellis
Signature	
Authorised by	David Ellis
Signature	
Project number	70012012
Report number	181105-AJC
File reference	LUD-01

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1 INTRODUCTION

This landscape strategy has been developed collaboratively with officers from the Cambridge City Council Streets and Open Spaces team and draws upon:

- Site familiarisation visits and photography undertaken in September and October 2018;
- Relevant precedent streetscape studies in Cambridge and the Southeast of England; and
- Feedback received at the Histon Road Local Liaison Forum (HRLLF) workshop (8th October 2018).

The preliminary design put forward for public consultation sought to compensate for tree removal through replacement planting elsewhere on Histon Road to achieve neutrality the same net quantity of trees. In subsequent design development, working alongside council officers, the potential for a varying of this strategy by using large trees to achieve biodiversity net gain has been explored in accordance with the council's Tree Strategy 2016 to 2026. The principle of net gain goes further than neutrality and aims to provide a greater total quantum of biodiversity when comparing the existing situation with the proposed scenario.

The following simple net gain calculation based on mature tree canopy size was set out at the HRLLF workshop and was well received in principle:

- Existing small species trees have an average mature canopy size of 3 metre radius which equates to a volume of 113 m³ (assuming a spherical canopy).
- Proposed medium species trees with a mature 6 metre crown radius = 905 m³ = 8 small trees.
- Proposed large species trees with a mature 10 metre crown radius = 3142 m³ = three medium or 27 small trees.

It is therefore proposed to follow this approach where appropriate. Table 1 below sets out the biodiversity net gains envisaged for Histon Road given the proposed strategy rather than the previously proposed tree neutrality.

Table 1: Biodiversity Net Gain Calculation

	Year 1	Year 10	Year 20	Year 50
Tree neutral strategy	-593 m ³	-804 m ³	-715 m ³	0 m ³
Proposed strategy	-450 m ³	6 m ³	4010 m ³	40073 m ³
Difference between proposed strategy and tree neutral	143 m³	810 m³	4725 m³	40073 m³

The landscape strategy appendix is supported by 7 no. A3 illustrations as follows:

- Figure 1: Akeman Street - Concept Plan and Visualisation
- Figure 2: Akeman Street - Rain Garden Details
- Figure 3: Gilbert Road Warwick Road - Concept Plan and Cross Sections
- Figure 4: Gilbert Road Warwick Road - Visualisation
- Figure 5: Brownlow Road and Blackhall Road - Concept Plan

- Figure 6: Land opposite Hazelwood Close – Before and After Cross Sections
- Figure 7: Material and Planting Palette

2 INTERVENTION AREAS

The following streetscape strategies have been identified for each of the Intervention Areas along Histon Road. The first four of which were considered at the HRLLF.

Crossroads at Gilbert Road and Warwick Road – A Gateway

The principal design objective is to enhance streetscape character by providing a new tree planting design which includes large species with an open canopy. Selected existing small tree species will be replaced to achieve long term environmental, social and economic benefits including biodiversity, improved air quality and reduced surface water runoff.

Tree planting, maintenance and management will be in accordance with industry best practice to ensure tree health and allow the most successful specimens to become a characterising influence and locally distinctive. The trees will cast light shade in summer months and benches will be provided to encourage passive recreation beneath. Benches will be robust enough to withstand vandalism, have wooden seats and backrests and be orientated towards Histon Road.

The mature canopy will be a prominent feature and will form a gateway to celebrate the transition between suburban and urban Cambridge. Existing views towards the Langham House landmark building on the north-east corner of the junction will be retained, enhanced and framed by crown-lifting the proposed trees as they mature. The ground beneath the trees will be grassed where possible to maintain the existing green character, providing amenity value and facilitating surface water infiltration and irrigation for the trees.



Plate 1: Photograph showing the existing situation at Langham House. The existing mature Sorbus (whitebeam) is proposed to be removed and replaced with two much larger species trees.

The Junction of Akeman Street – A Green Oasis (With Sound Track)

The primary objective is to build on the opportunity afforded by high footfall to local shops and the bus-stop by taking up the asphalt and replacing with soft landscape elements, benches and play equipment to provide recreational and amenity value.

The design proposes several new medium sized trees to replace the two existing very poor-quality specimens. The replacement trees will cast light shade in summer months and benches will be located so that there are options to sit in either sun or shade. Benches will be robust enough to withstand vandalism, have wooden seats, central arm and backrest and be orientated to deter overlooking of Akeman House, 194 and 196 Histon Road.

The soft landscape areas will be redesigned as slightly sunken rain gardens with a bioretention function. Low level, low maintenance planting will be provided to improve air quality and provide amenity value for all seasons. Herbaceous plants, grasses, evergreen structural shrubs, groundcover and wildflower seeding will be included. The planting / seeding mix will be adapted every five years in response to the changing light conditions beneath the tree canopies and the competition for water and nutrients as tree roots grow.

Adaptive management will be used to ensure any planting or seeding which consistently fails to thrive is replaced with a suitable soft landscape treatment. Bare ground susceptible to footfall and subsequent compaction / erosion will be avoided.

Interpretation such as signage could also be provided in this area subject to further consultation with local residents. This could focus on the Roman heritage of Akeman St. or the principles of water sensitive design employed in the design of the wider area.

The proposed colour palette for hard landscape materials is warm tones such as ochre and light brown. Sandstone and/or clay paviours will be provided in discreet areas of hard landscape related to desire lines, seating, and play equipment. A 'Dance Chime' small piece of play equipment is proposed to provide a pleasant and unique ad-hoc activity that will encourage informal social use of the space and make it memorable.



Plate 2: Photograph showing the existing situation at Akeman House. The existing declining tree (next to the bins) in hard landscape is proposed to be replaced with three much larger species trees, seating and a rain garden.

The Junctions of Brownlow Road and Blackhall Road - Birch Trees

The design team and the HRLLF agreed that the existing mature birch trees in grassed areas are in reasonable condition and provide suitable character and sufficient benefit to the local area. Removal of

three mature birch trees at Blackhall Road is proposed to accommodate the bus, cycle and walking improvements. In this location at least one replacement birch tree will be planted.

The Linear Strip of Land Opposite Hazelwood Close - A Green Corridor

The proposed solution in this area is to replace the overgrown hedgerow with a new fence within highway land. The fence will sit adjacent to the existing residential property boundary fencing and will be steel mesh. Planting of non-vigorous species are to be grown up the fence. Species selection will include a proportion of evergreens, climbers and flowering plants.

The proposed fence would be up to 1.8 m in height and the planting will be maintained / cut to around 2 m in height to ensure sufficient privacy for properties backing onto the road whilst minimising overshadowing. As well as softening the fence, the planting will be designed to minimise cost and frequency of maintenance, and will also provide year-round visual interest. This type of planting will have negligible impact on adjacent garden planting, and will also benefit air quality and biodiversity.

There is potential to involve an artist in the detailed design of this area to provide a repeating or rhythmic element throughout the length of the planting.

Gilbert Close Junction

The strategy for Gilbert Close was not discussed at the HRLLF. At least one additional medium or large sized tree will be provided here. The surfacing will remain as grass.

3 CONCLUSION

The proposed interventions set out above have been developed in conjunction with relevant parties. The primary objective to provide sustainable environmental enhancement via streetscape design has been met. The long-term vision is for the proposed large trees to thrive and provide a lasting legacy. This will be achieved through implementation of the latest advances in arboricultural knowledge and techniques when considering ground preparation, planting, maintenance and management of trees.

The streetscape designs will have the following beneficial effects:

- A richer, more visually appealing and distinctive public realm;
- Greater opportunities for passive and active recreation to promote human health and wellbeing;
- Increased biodiversity; and
- Wide-ranging environmental and socio-economic impacts associated with increased tree canopy cover including reduced storm water runoff; improved local air, soil and water quality; reduced atmospheric carbon dioxide; and increased property values.

The next step is for the landscape proposals to be developed in conjunction with officers and other relevant technical specialists including civil engineers, lighting, drainage and arboriculture. The landscape designs will involve underground clash detection between existing and proposed concrete foundations, drainage, services and tree roots. The final tree planting details will be bespoke solutions at individual locations to ensure the proposals are as sustainable and coordinated as possible.



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The Junction of Akeman Street – A Green Oasis (with sound track)

Sheet 1 of 2 - Concept Plan and Visualisation

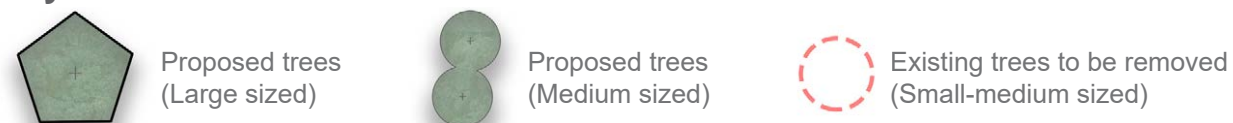
HISTON ROAD LANDSCAPE STRATEGY

Figure 1

OBJECTIVE: build on the opportunity afforded by high footfall to local shops and the bus-stop by providing a new crossing, taking up the asphalt and replacing with soft landscape elements, benches and play equipment to provide recreational and amenity value. Refer to Figure 2 for details of the proposed Rain Gardens.



Key



CONCEPT PLAN - Rain Gardens with New / Replacement Tree Planting



VISUALISATION - viewing north-east towards Akeman Street

The Junction of Akeman Street – A Green Oasis (with sound track)

Sheet 2 of 2: Rain Garden Details

DETAIL AREA



KEY PLAN - Refer to Figure 1



Legend

- Marshall's Scoutmoor Yorkstone Paving
- CED Clay Paviers
- Marshall's Tegula Cobbles
- Rain-Garden Planting
- Bench
- Liriodendron tulipifera
- Betula ermanii
- Proposed Dance Chimes Play Equipment

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HISTON ROAD LANDSCAPE STRATEGY

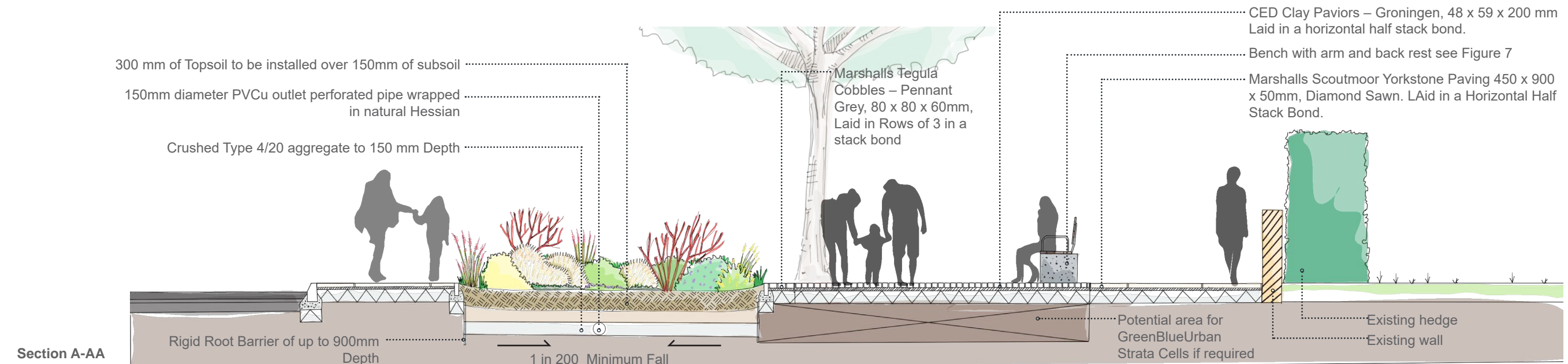
Figure 2

PLANTING PHILOSOPHY

A large feature tulip tree with two supporting birch tress will replace the existing poor quality birch trees. The trees are planted in slightly sunken rain gardens which capture surface water runoff and perform a bio-retention function.

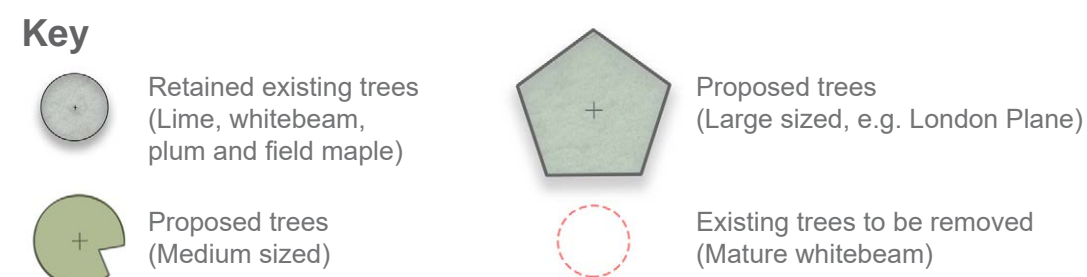
The understorey planting includes herbaceous plants, grasses, evergreen structural shrubs, and groundcover plants. The planting / seeding mix will be adapted every five years in response to the changing light conditions beneath the tree canopies and the competition for water and nutrients as tree roots grow.

Adaptive management will be used to ensure any planting or seeding which consistently fails to thrive is replaced with a suitable soft landscape treatment. Bare ground susceptible to footfall and subsequent compaction / erosion will be avoided.



Crossroads At Gilbert Road And Warwick Road – A Gateway Sheet 1 of 2: Concept Plan and Cross Sections

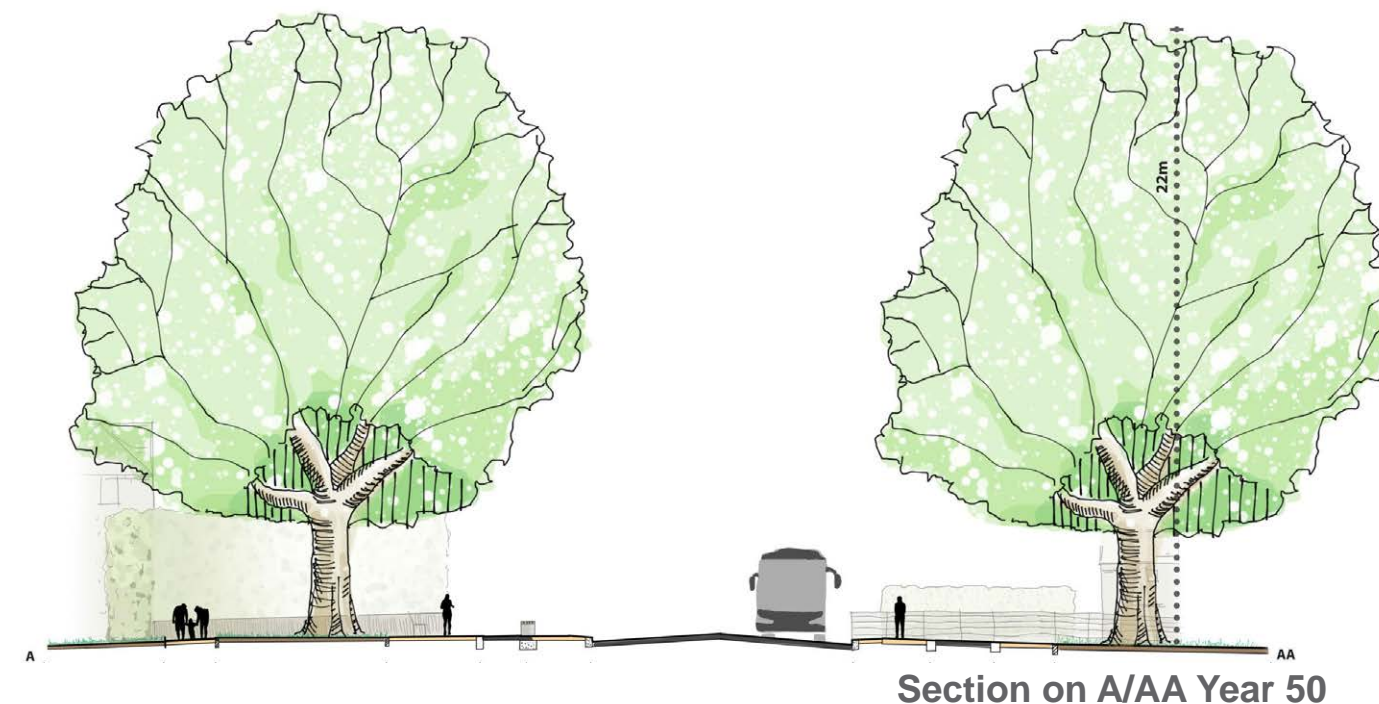
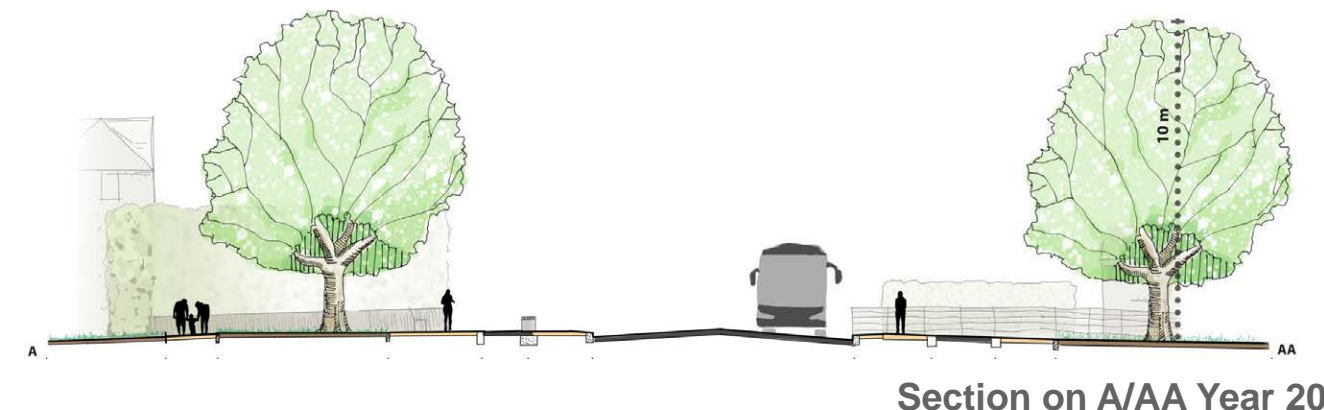
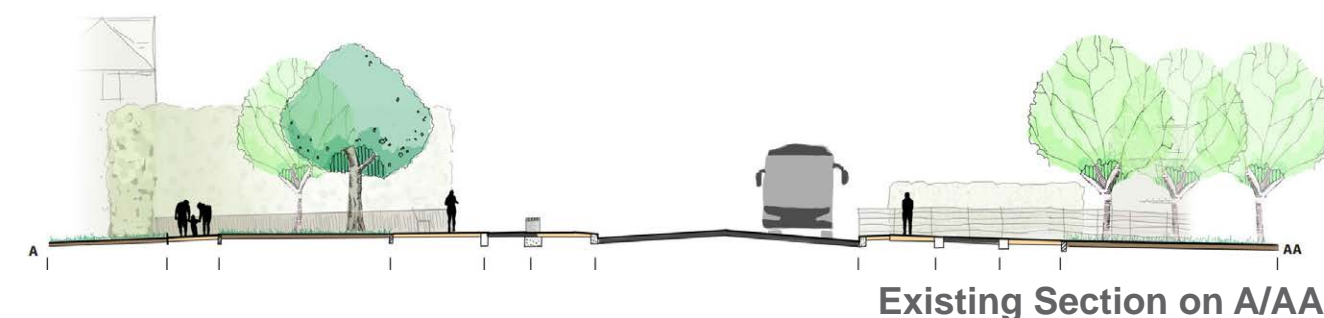
OBJECTIVE: enhance streetscape character by providing a new tree planting design which includes large species with an open canopy. Selected existing small tree species will be replaced to achieve long term environmental, social and economic benefits including biodiversity, improved air quality and reduced surface water runoff.



CONCEPT PLAN - New / Replacement Tree Planting

HISTON ROAD LANDSCAPE STRATEGY

Figure 3



CROSS SECTIONS - Expected Growth Rate of London Plane Trees

Crossroads At Gilbert Road And Warwick Road – A Gateway

Sheet 2 of 2: Visualisation

HISTON ROAD LANDSCAPE STRATEGY

Figure 4



VISUALISATION - Viewing north-east across Histon Road towards Langham House

Brownlow Road and Blackhall Road - Birch Trees

OBJECTIVE: the existing mature birch trees in grassed areas are in reasonable condition and provide suitable character and sufficient benefit to the local area. Removal of three mature birch trees at Blackhall Road is proposed to accommodate the bus, cycle and walking improvements. Three replacement birch trees will be planted. There will be a slight reduction in the size of the grassed area at Brownlow road but no tree loss is anticipated.

HISTON ROAD LANDSCAPE STRATEGY

Figure 5



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Key

- Existing birch trees to be removed
- Retained existing birch trees
- + Proposed birch trees

CONCEPT PLAN - Blackhall Road New / Replacement Planting of Birch



EXISTING SITUATION - Brownlow Road No Tree Loss Anticipated

Replacement Planting opposite Hazelwood Close

HISTON ROAD LANDSCAPE STRATEGY

Figure 6

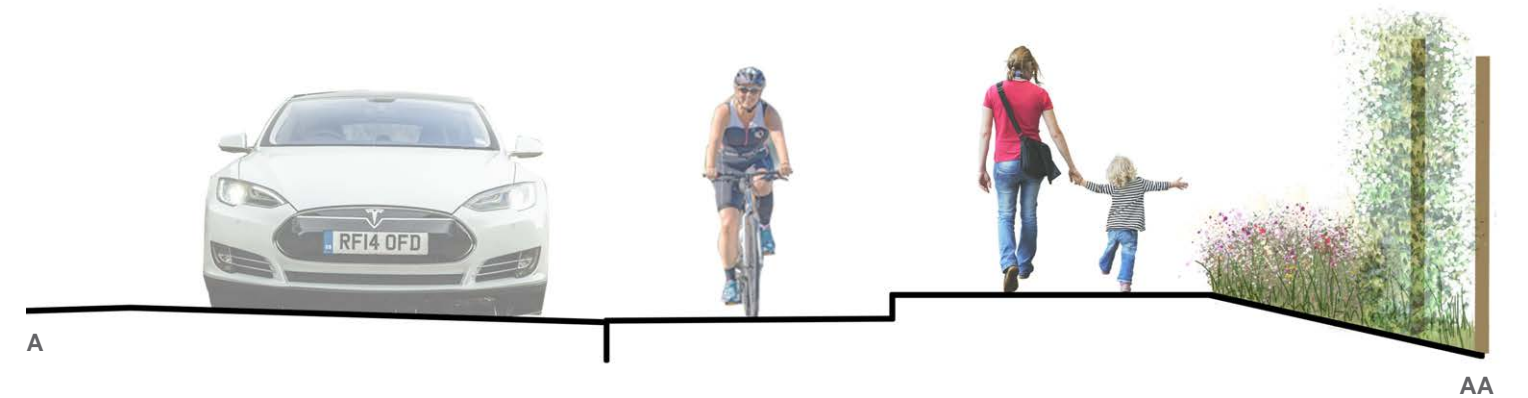
CROSS SECTION - EXISTING

Section A-AA

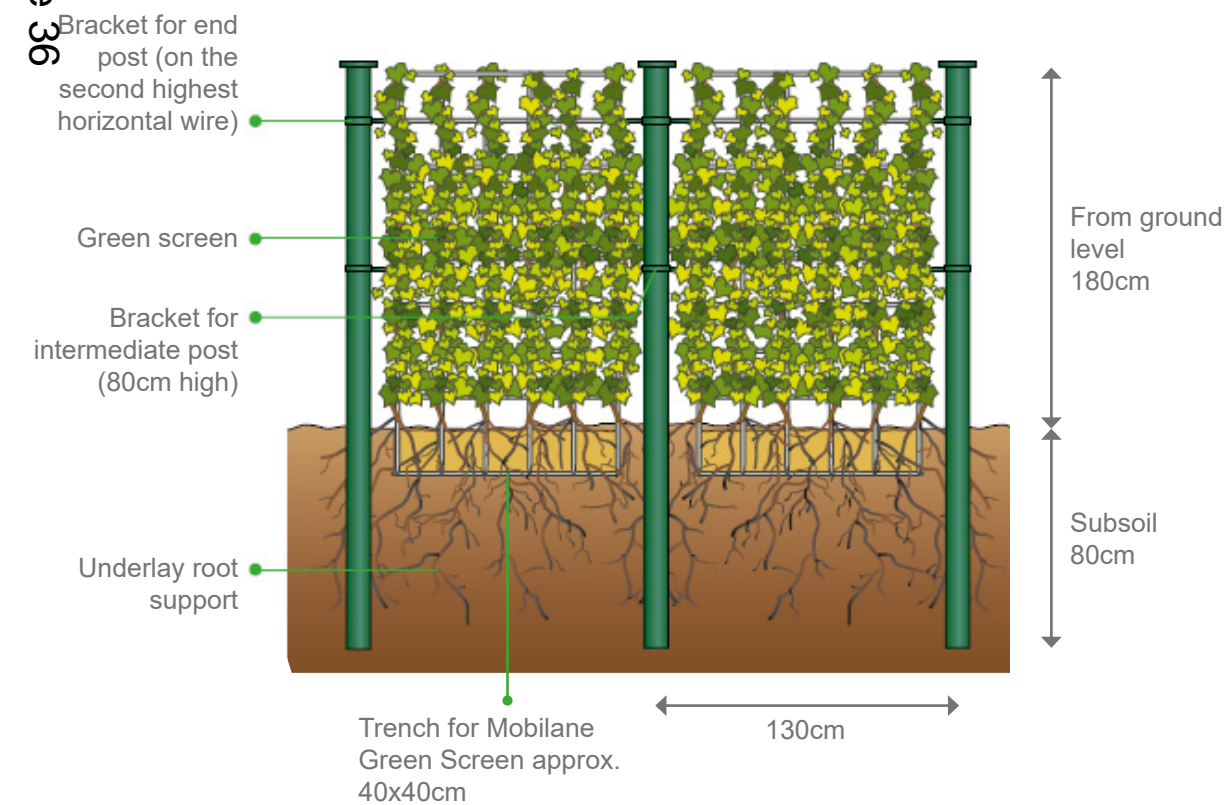


CROSS SECTION - PROPOSED: 1.8m Metal Mesh Fence planted with Ivy Verge to be seeded with species rich grass

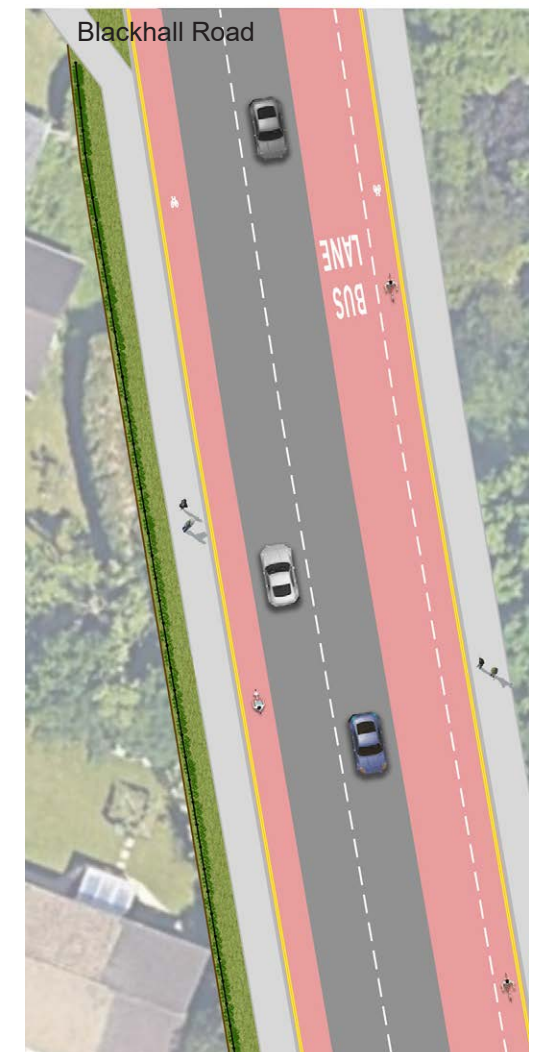
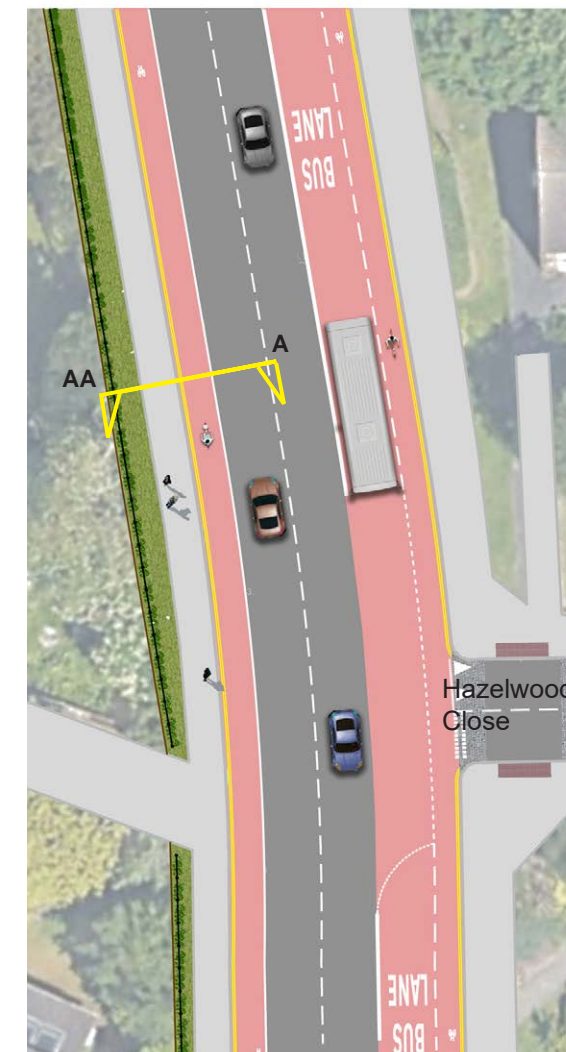
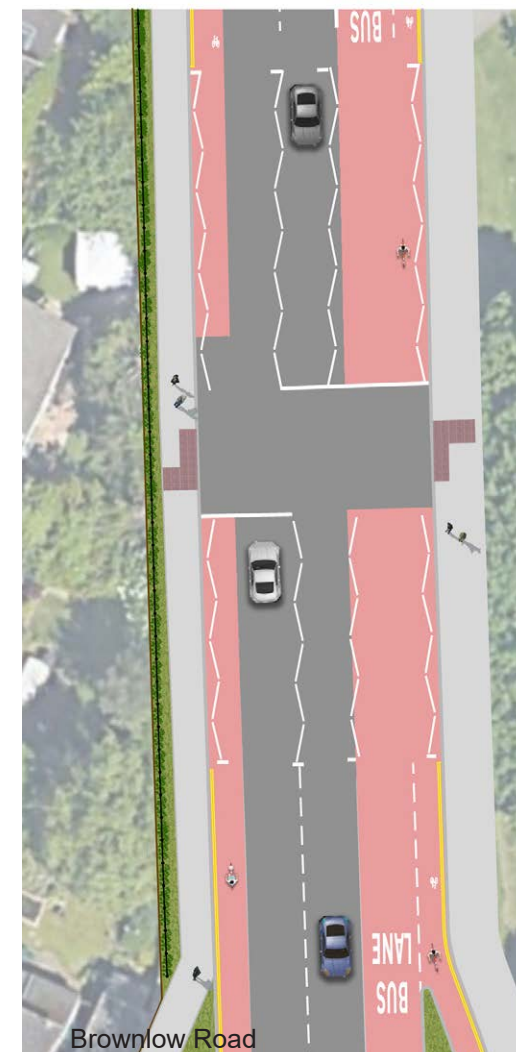
Section A-AA



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MOBILANE GREEN SCREEN FENCE



PLANS: Replacement planting and proposed seeding between Brownlow Road and Blackhall Road

Material and Planting Palette

HISTON ROAD LANDSCAPE STRATEGY

Figure 7

Trees



Platanus x hispanica
(London plane)



Liriodendron tulipifera
(Tulip tree)



Betula ermanii
(Gold birch)



Betula pendula
(Birch)

Evergreen Groundcover



Pachysandra terminalis
'Green Carpet'

Flowering Perennials



Geranium 'Orion'



Lysimachia punctata



Veronica longifolia

Shrubs



Cornus alba 'sibirica'



Cornus sanguinea
'midwinter fire'



Hypericum x hidcotense
'Hidcote'

Grasses



Miscanthus sinensis
'Zebrinus'



Calamagrostis x
acutiflorus
'Karl Foerster'



Panicum virgatum
'Rehbraun'



Deschampsia cespitosa

Surface Materials



Scoutmoor Yorkstone



Tegula Cobbles



Clay Paviers

Seating



Broxap Parkgate Bench

Play Equipment



Richter Dance Chime

Fencing

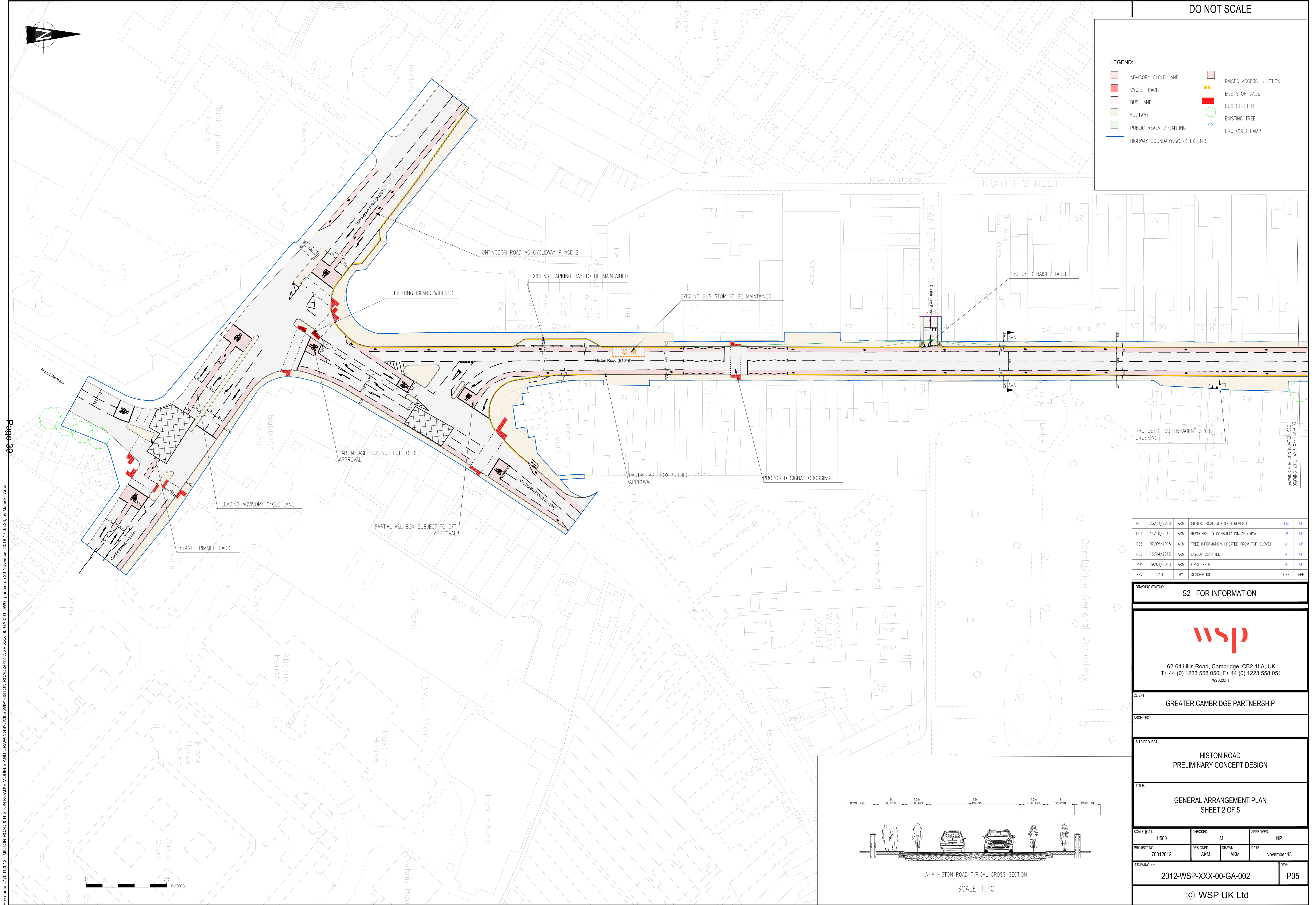


Mobilane Green Screen



Hedera varieties

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DO NOT SCALE

LEGEND:

ADVISORY CYCLE LANE

CYCLE TRACK

BUS LANE

FOOTWAY

PUBLIC REALM /PLANTING

HIGHWAY BOUNDARY/WORK EXTENTS

RAISED ACCESS JUNCTION

BUS STOP CAGE

BUS SHELTER

EXISTING TREE

PROPOSED RAMP

P05	23/11/2018	AKM	GILBERT ROAD JUNCTION REVISED	LM	NP
P04	16/10/2018	AKM	RESPONSE TO CONSULTATION AND RSA	NP	NP
P03	02/05/2018	AKM	TREE INFORMATION UPDATED FROM TOP SURVEY	NP	NP
P02	16/04/2018	AKM	LAYOUT CLARIFIED	NP	NP
P01	29/01/2018	AKM	FIRST ISSUE	NP	NP
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION

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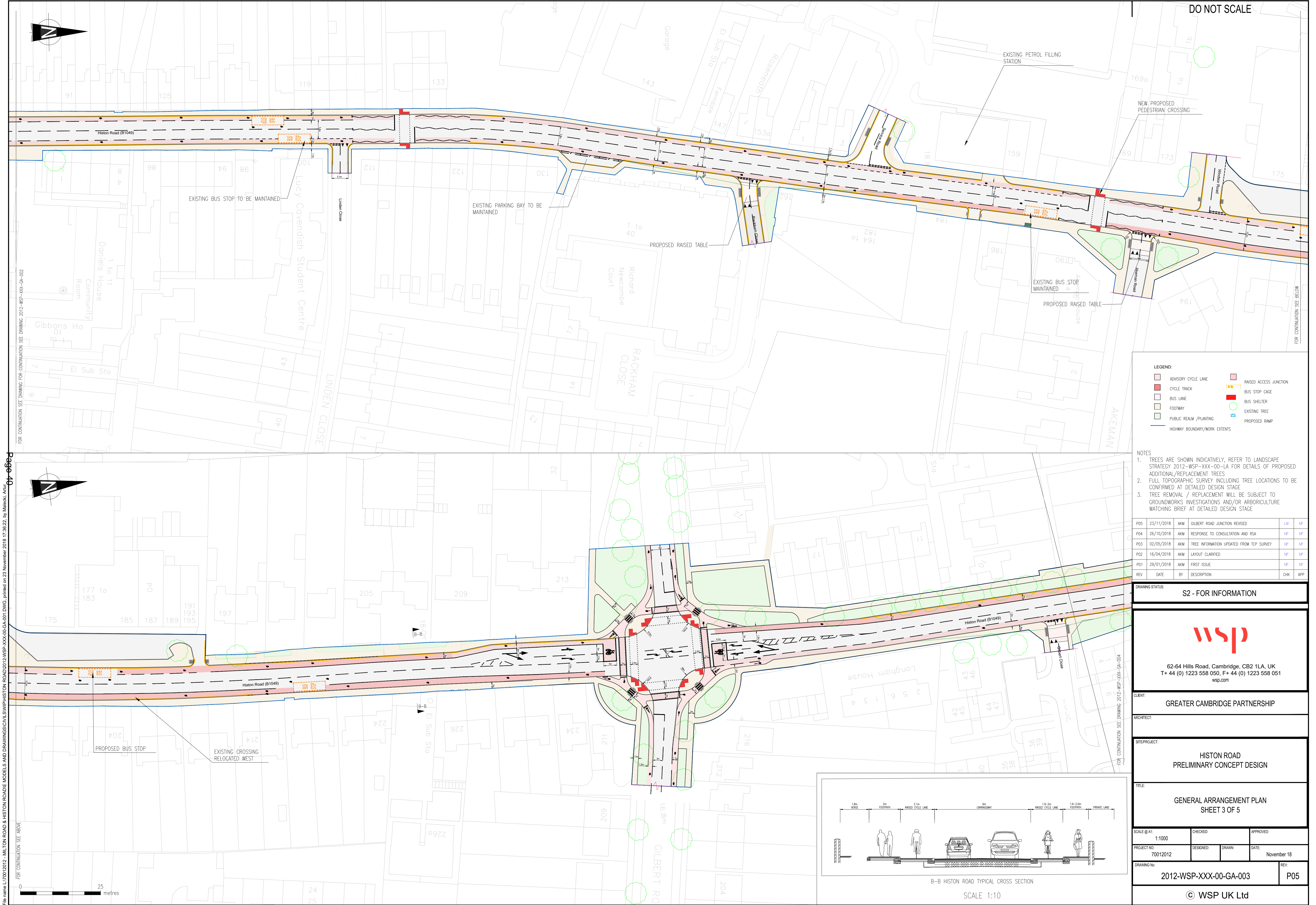
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ARCHITECT:

SITE/PROJECT: HISTON ROAD
PRELIMINARY CONCEPT DESIGN

TITLE: GENERAL ARRANGEMENT PLAN
SHEET 2 OF 5

SCALE @ A1: 1:500	CHECKED: LM	APPROVED: NP
PROJECT NO: 70012012	DESIGNED: AKM	DRAWN: AKM
DRAWING NO: 2012-WSP-XXX-00-GA-002	DATE: November 18	REV: P05
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DO NOT SCALE

- LEGEND:
- ADVISORY CYCLE LANE
 - CYCLE TRACK
 - BUS LANE
 - FOOTWAY
 - PUBLIC REALM /PLANTING
 - RAISED ACCESS JUNCTION
 - BUS STOP CAGE
 - BUS SHELTER
 - EXISTING TREE
 - PROPOSED RAMP
 - HIGHWAY BOUNDARY/WORK EXTENTS

- NOTES
- TREES ARE SHOWN INDICATIVELY; REFER TO LANDSCAPE STRATEGY 2012-WSP-XXX-00-LA FOR DETAILS OF PROPOSED ADDITIONAL/REPLACEMENT TREES
 - FULL TOPOGRAPHIC SURVEY INCLUDING TREE LOCATIONS TO BE CONFIRMED AT DETAILED DESIGN STAGE
 - TREE REMOVAL / REPLACEMENT WILL BE SUBJECT TO GROUNDWORKS INVESTIGATIONS AND/OR ARBORICULTURE WATCHING BRIEF AT DETAILED DESIGN STAGE

POS	23/11/2018	AKM	GILBERT ROAD JUNCTION REVISED	LM	NP
P04	26/10/2018	AKM	RESPONSE TO CONSULTATION AND RSA	NP	NP
P03	02/05/2018	AKM	TREE INFORMATION UPDATED FROM TOP SURVEY	NP	NP
P02	16/04/2018	AKM	LAYOUT CLARIFIED	NP	NP
P01	29/01/2018	AKM	FIRST ISSUE	NP	NP
REV	DATE	BY	DESCRIPTION	CHK	APP

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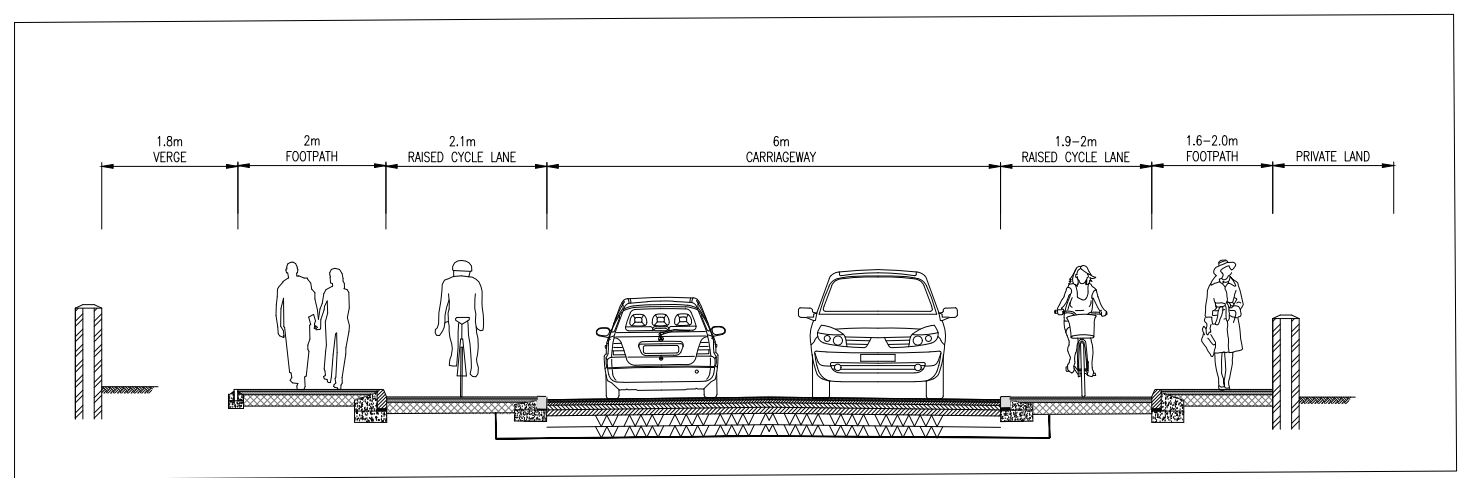
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PRELIMINARY CONCEPT DESIGN

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SHEET 3 OF 5

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B-B HISTON ROAD TYPICAL CROSS SECTION

SCALE 1:10



