The Cambridge South East Transport Order

Transport And Works Act 1992

Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006

Design & Access Statement – Revision 1

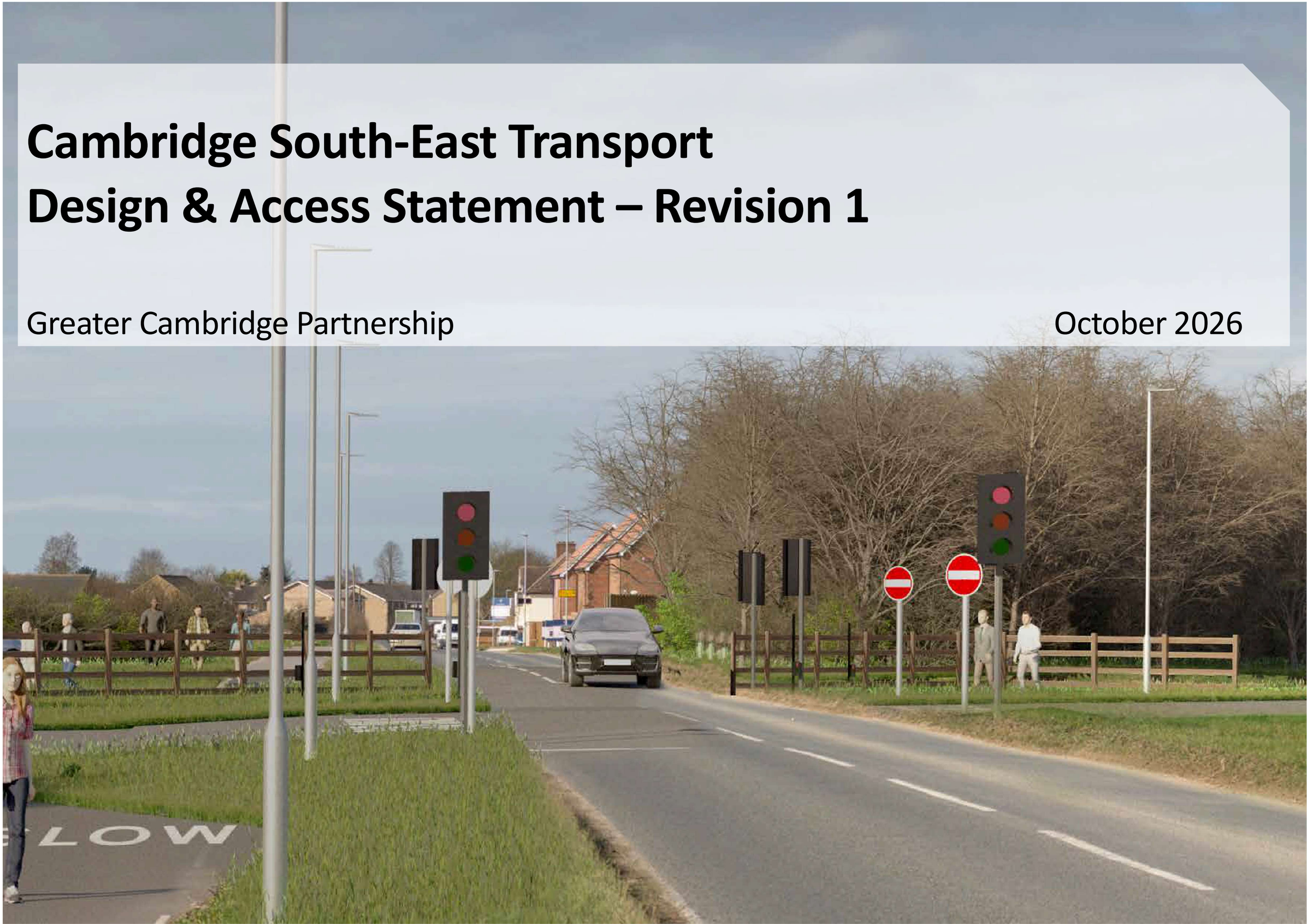
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Cambridge South-East Transport
Design & Access Statement – Revision 1

Greater Cambridge Partnership

October 2026



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1. Introduction

Introduction

The Design & Access Statement (DAS) has been prepared in line with the requirements of Article 9 of The Town and Country Planning (Development Management Procedure) (England) Order 2015 which states that a design and access statement must:

• Explain the design principles and concepts that have been applied to the development;

• Demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;

• Explain the policy adopted as to access, and how policies relating to access in relevant local development documents have been taken into account;

• State what, if any, consultation has been undertaken on issues relating to access to the development and what account has been taken of the outcome of any such consultation; and

• Explain how any specific issues which might affect access to the development have been addressed".

Purpose of this design statement

The DAS should be read in conjunction with the Planning Statement (document ref: CSET15-00-00) which sets out the full national and local planning policy context as well as the need for and benefits of the Cambridge South-East Transport Phase 2 (CSET) (the Proposed Development), drawing on the overall suite of documents and assessments that accompany the Order, in particular those that provide design information as set out below:

- Deemed Planning Drawings (document ref: CSET12-DP1-00 to CSET12-DP7-00)
- Environmental Statement (document ref: CSET10-02-00)
- Transport Assessment (document ref: CSET18-00-00)

The design statement will cover eight key areas of the Proposed Development in detail. These are listed below:

- Francis Crick Avenue;
- Hobson's Conduit crossing;
- Great Shelford stop and Hinton Way crossing;
- Stapleford stop and Haverhill Road crossing;
- River Granta (Stapleford) crossing;
- Sawston stop and Sawston Road crossing;
- River Granta (Babraham) crossing; and
- A11 Travel Hub.

Structure of the report

The rest of this section sets out the background and objectives of the Proposed Development that the Order seeks consent for with regards to the CSET scheme as follows:

- Section 2 sets out the Planning Policy Context as it relates to the design and access of the Proposed Development;
- Section 3 sets out the vision and objectives;
- Section 4 sets out the consultation undertaken to date in relation to the Proposed Development, specifically in relation to how this has influenced the design development process;
- Section 5 sets out the design objectives that will guide the Proposed Development's evolution through the detailed design stage and how this will be captured through the proposed planning conditions included as part of the Request for Deemed Planning Permission (document reference CSET-14-00-00);
- Section 6 provides information on the route wide accessibility aims; and
- Section 7 identifies the route and sets out the approach to site specific design elements for each section including landscaping, linkages and access.

Appendix 1 sets out the design principles that will be adhered to at detailed design stage. Details, such as the final location, layout scale and external appearance of certain structures and hard/soft landscaping works are 'reserved' for subsequent approval by the relevant local authorities through the planning conditions.

2. Planning Policy Framework

The design, route and access arrangement for the Proposed Development has been influenced by relevant planning policy with these informing the development of the design vision and principles. A more detailed description of the planning policy context for the Proposed Development is set out in section 6 of the Planning Statement (document ref: CSET-15-00-00). The policies deemed to be of most relevance to the design of the Proposed Development have been summarised below.

National Planning Policy Framework (NPPF)

The latest version of the NPPF was published in August 2026 (NPPF26). The following sections are the most relevant to the determination of this proposal:

- Chapter 3: Procedural policies: Decision-making policies
- Chapter 4: Achieving sustainable development
- Chapter 5: Meeting the challenge of climate change
- Chapter 6: Delivering a sufficient supply of homes
- Chapter 7: Building a strong, effective economy
- Chapter 12: Making effective use of land
- Chapter 13. Protecting Green Belt land
- Chapter 14: Achieving well-designed places
- Chapter 15: Promoting sustainable transport
- Chapter 16: Promoting healthy communities
- Chapter 17: Pollution, public protection and security
- Chapter 18: Conserving and enhancing the environment
- Chapter 19: Managing flood risk and coastal change
- Chapter 20: Conserving and enhancing the natural environment
- Chapter 21: Conserving and enhancing the historic environment

There are several paragraphs and chapters within the NPPF which are of direct relevance and will provide the key basis at national level for determining the suitability of the Proposed Development. The key parts of the NPPF, having regard to the principles of the Proposed Development, are discussed within section 5 of this report.

Chapter 4 sets out that, at the heart of the NPPF is a presumption in favour of sustainable development. The NPPF also sets out within Paragraph 17 that there are three overarching objectives to sustainable development, namely: economic, social and environmental. The definitions of the three objectives are set out as follows:

a) **Economic –** to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

b) **Social –** to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

c) **Environmental –** to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and mitigating and adapting to climate change, including moving to a low carbon economy. The NPPF is clear that the above objectives are interdependent, and development should pursue them in mutually supportive ways to ensure that development achieves net gains across each one.

Chapter 15 of the NPPF sets out detailed guidance in relation to the promotion of sustainable transport. Paragraph 109 states that transport issues should be considered from the earliest stages of plan-making and development proposals, so that impacts of development on transport networks can be addressed, opportunities from proposed transport infrastructure, and changing transport technology and usage, are realised, opportunities to promote walking, cycling and public transport use are identified and pursued, environmental impacts of traffic and transport infrastructure can be identified, assessed and other transport considerations are integral to the design and contribute to making high quality places.

Policy TR3 states that a number of principles should be adhered to in *"So that development is located where it can support sustainable patterns of movement, enable good accessibility for different users and make the most of existing and proposed transport infrastructure…".*

These include

Policy GB6(2) of the NPPF states that *"inappropriate development is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances".* When considering the acceptability of the principle of development within the Green Belt, the key policy criteria are set out in Policy GB&(f)(i) of the NPPF which states the following:

"Certain other forms of development, provided the impact on the openness of the Green Belt is minimised, and there would not be a significant conflict with the Green Belt purposes.

These are: i.Mineral extraction and processing, engineering operations, and transport, electricity network, water and telecommunications infrastructure required in a Green Belt location…".

The Development Plan

The Proposed Development is located within the administrative areas of South Cambridgeshire District and Cambridge City. As such, this is a cross border application and the adopted and emerging Development Plan of both South Cambridgeshire District Council and Cambridge City Council apply. In addition, relevant policies within the Cambridgeshire County Council Adopted Minerals and Waste Local Plans are also of relevance.

It is important to note that with this development being submitted under the Transport and Works Act Order (TWAO), unlike a planning application made pursuant to the TCPA 1990, it is not required to be in accordance with the development plan. However as provided for in paragraph 1.28 of the TWA Procedures Guidance, *"in line with the plan led system for determining planning applications, projects that conflict with relevant policies in the development plan are unlikely to be authorised, unless material considerations indicate otherwise".* Therefore, an assessment of the proposals in relation to the development plan, and in particular an assessment in Green Belt terms, is an important material consideration.

South Cambridgeshire Local Plan

The Development Plan for South Cambridgeshire District Council includes the following relevant documents:

- The South Cambridgeshire Local Plan September 2018 (SCLP 2018);
- SCLP 2018 Adopted Policies Map September 2018
- Cambridge Southern Fringe Area Action Plan February 2008;
- Cambridgeshire and Peterborough Minerals and Waste Local Plan July 2021.

The policies considered most relevant to this application within the SCLP 2018 are also listed below:

- Policy S/2: Objectives of the Local Plan
- Policy S/3: Presumption in Favour of Sustainable Development
- Policy S/4: Cambridge Green Belt
- Policy S/7: Development Frameworks
- Policy CC/1: Mitigation and Adaptation to Climate Change
- Policy CC/3: Renewable and Low Carbon Energy in New Developments
- Policy CC/4: Water Efficiency
- Policy CC/6: Construction Methods
- Policy CC/7: Water Quality
- Policy CC/8: Sustainable Drainage Systems
- Policy CC/9: Managing Flood Risk
- Policy HQ/1: Design Principles
- Policy HQ/2: Public Art and New Development
- Policy NH/2: Protecting and Enhancing Landscape Character
- Policy NH/3: Protecting Agricultural Land
- Policy NH/4: Biodiversity
- Policy NH/5: Sites of Biodiversity or Geological Importance
- Policy NH/8: Mitigating the Impact of Development in and adjoining the Green Belt
- Policy NH/14: Heritage Assets
- Policy SC/2: Health Impact Assessment
- Policy SC/9: Lighting Proposals
- Policy SC/10: Noise Pollution
- Policy SC/11: Contaminated Land
- Policy SC/12: Air Quality
- Policy SC/14: Odour and Other Fugitive Emissions to Air
- Policy TI/2: Planning for Sustainable Travel
- Policy TI/3: Parking Provision
- Policy TI/7: Lord's Bridge Radio Telescope
- Policy 5: Strategic transport and infrastructure
- Policy 8: Setting of the city
- Policy 17: Cambridge Biomedical Campus (including Addenbrooke's Hospital) Area of Major Change
- Policy 28: Carbon reduction, community energy networks, sustainable design and construction, and water use
- Policy 29: Renewable and low carbon energy generation
- Policy 31: Integrated water management and the water cycle
- Policy 32: Flood risk
- Policy 33: Contaminated Land
- Policy 34: Light pollution control
- Policy 35: Protection of human health and quality of life from noise and vibration
- Policy 36: Air quality, odour and dust
- Policy 39: Mullard Radio Astronomy Observatory, Lord's Bridge
- Policy 55: Responding to context
- Policy 56: Creating successful places
- Policy 57: Designing new buildings
- Policy 59: Designing landscape and the public realm
- Policy 61: Conservation and enhancement of Cambridge's historic environment

Cambridge City Local Plan

The Development Plan for Cambridge City includes the following relevant documents:

- Cambridge Local Plan October 2018 (CLP 2018);
- The Adopted Policies Map October 2018;
- Cambridge East Area Action Plan 2008;
- North East Cambridge Area Action Plan (emerging);
- North West Cambridge Area Action Plan (2009);
- Cambridgeshire and Peterborough Minerals and Waste Local Plan July 2021.

In addition to the above relevant policies from the SCLP 2018, the policies considered most relevant to this application within the CLP 2018 are listed below:

- Policy 1: The presumption in favour of sustainable development
- Policy 4: The Cambridge Green Belt
- Policy 62: Local heritage assets
- Policy 65: Visual pollution
- Policy 69: Protection of sites of biodiversity and geodiversity importance
- Policy 70: Protection of priority species and habitats
- Policy 71: Trees
- Policy 80: Supporting sustainable access to development
- Policy 81: Mitigating the transport impact of development
- Policy 82: Parking management

Emerging Greater Cambridge Local Plan 2024-2045

Cambridge City Council and South Cambridgeshire District Council are in the process of preparing a new joint Greater Cambridge Local Plan which is at relatively early stage of its preparation (Emerging Local Plan).

As of August 2026, this Plan is at Regulation 19 stage. The latest Local Development Scheme (LDS) states that the GCLP will reach Submission stage in December 2026, with adoption not anticipated before 2027.

Policy DM4(1) of the NPPF **[CD11-01]** (page 19) states that authorities may "*give weight to relevant policies in emerging plans according to:*

a) the stage of preparation of the emerging plan (the more advanced its preparation, the greater the weight that may be given);

b) the extent to which there are unresolved objections to relevant policies (the less significant the unresolved objections, the greater the weight that may be given); and

c) the degree of consistency of the relevant policies in the emerging plan to this Framework (the closer the policies in the emerging plan to the policies in the Framework, the greater the weight that may be given)".

Emerging Cambridge Local Plan Policy S/DS: Development Strategy includes strategic scale allocations referencing Cambridge Biomedical Campus in part b(ii) as an allocation for a development including approximately 520,000sqm of employment floorspace and 1,000 homes for local workers. Part c(ii) notes the land adjacent to the A11 and A1307 'Grange Farm' as a mixed-use new settlement that is well connected to Greater Cambridge's dynamic life sciences research campuses. The settlement is set to comprise 4,500 homes, 15,000 square metres employment floorspace for office uses and 20,000 square metres for industrial uses, and a new centre with a mixture of facilities and services.

Emerging Cambridge Local Plan Policy S/GF 'Land adjacent to A11 and A1307 at Grange Farm' outlines in 'objectives and place identity' part 6 that *'the new settlement will play a critical role in extending the Cambridge South East Transport (CSET) scheme, with a new segregated connection proposed which would also enable potential future extension of the proposed scheme to settlements further afield' page 317.*

Movement Part 23 C(ii) outlines that the CSET scheme will provide a transport corridor and active travel route from the proposed A11 Travel Hub to the CBC, Cambridge City Centre and the Linton and Sawston Greenways.

Emerging Cambridge Local Plan Policy S/CBC 'CBC (including Addenbrooke's Hospital)' outlines that the CBC, including the land allocated for expansion through release of land from the Green Belt, is appropriate for the required mix of clinical and research uses. Movement part 22(c) suggests the allocation should facilitate, via a combination of delivery, enabling works and financial contributions, the delivery of the CSET scheme. The policy guidance (paragraph 3.2.40, page 232) also notes that:

'Enhanced connectivity with Cambridge South Station and integration of the proposed CSET Phase 2 scheme are also critical to reducing car dependency, alongside micro-consolidation hubs to support efficient, low-impact logistics for last-mile deliveries.'

Cambridgeshire and Peterborough Minerals and Waste Local Plan (July 2021)

The Cambridgeshire and Peterborough Minerals and Waste Local Plan (MWLP 2021) was adopted by CCC and Peterborough City Council on 28 July 2021.

The MWLP 2021 sets the framework for all minerals and waste developments until 2036. It also makes strategic allocations for long-term mineral and waste management development, as well as designations such as MSAs.

3. Vision and Objectives

Background and objectives

The Planning Statement (document ref: CSET15-00-00) sets out detailed background information for the Proposed Development. Section 3 of the Planning Statement sets out the need, objectives and benefits of the Project. In summary, CSET will provide additional service capacity and reliability required to meet the demands of the growth ambitions for CBC and Cambridge; effectively relieve congestion along the A1307 and provide the means of improving the quality of limited public transport and active travel corridors to connect Haverhill and Linton to the growing number of employment opportunities forecast for the region in the medium to long term future. GCP's vision for the Proposed Development as defined in the Statement of Aims (document ref: CSET-04-00-00) is as follows:

The route will significantly improve connectivity between villages, planned new development, emerging and future development and with Cambridge city. In addition, some employment locations nearby will also benefit from the route in evolving more sustainable approaches for their sites, for example Babraham Research Campus and Granta Park.

The objectives of the Proposed Development are:

- Objective 1: Improve connectivity to employment sites in South East Cambridge and central Cambridge.

  - Provide improved access to the Granta Park, Addenbrooke's Hospital, Cambridge Biomedical Campus and a number of other employment sites in South East Cambridge.

  - Increase modal options for commuters travelling to and from employment sites in South East Cambridge and central Cambridge by delivering a high quality public transport network and improved active travel routes for users.

- Objective 2: Support the continued growth of Cambridge and South Cambridge's economy.

  - Deliver journey time savings for commuters travelling by public transport to job opportunities in South East Cambridge and central Cambridge.

  - Improve journey time reliability for users of the A1307 corridor.

  - Provide the transport infrastructure necessary to sustain economic growth.

- Objective 3: Improve road safety for all users of the A1307 corridor

  - Reduce the number of accidents at identified accident clusters along the corridor.

  - Reduce the number of speed related incidents along the corridor.
  - Improve the safety of crossing movements for cyclists, pedestrians and equestrians.

- Objective 4: Relieve congestion and improve air quality in South East Cambridge

  - Encourage use of sustainable transport modes for journeys through South East Cambridge and into central Cambridge.

  - Enhance quality of life by relieving congestion and improving air quality in South East Cambridge.

  - Relieve pressure at network pinch points.

- Objective 5: Improve active travel infrastructure and public transport provision in South East Cambridge

  - Deliver a High-Quality Public Transport offer between Cambridge and Haverhill.

  - Increase frequency of public transport services during peak periods.

  - Reduce severance for cyclists, pedestrians and equestrians.

  - Increase uptake of sustainable transport modes for commuter journeys.

Proposed works

The works for the Proposed Development will include:

- A new busway route, approximately 7.3m wide, will connect the Cambridge Biomedical Campus and the new A11 Travel Hub at Babraham. The majority of the Proposed Development will be a dedicated busway route apart from at the northern end of the site, where the busway vehicles will run along Francis Crick Avenue, on a segregated road.

- A new Travel Hub site off the A1307 / A11; and

- A new Service Track (also known as a Maintenance Track) providing pedestrian and cycle connections along the busway route. It will connect the A11 Travel Hub to the existing pedestrian/cycle path network around the Cambridge Biomedical Campus.

The busway route will cross Hinton Way, Haverhill Road and Sawston Road. The crossings will be controlled with traffic signals to protect the safety of vehicles using the existing roads. There will be additional crossings where the busway route crosses existing Public Rights of Way (PRoW) or farm accesses. These crossings will not be signalised.

Design vision and objectives

The design objectives have been developed to set out the framework for the detailed design of the Proposed Development and associated works to help not just deliver the design quality but to ensure it is an appropriate response to the context within which it is located.

The design objectives also provide assurance and confidence to stakeholders that the Proposed Development will be well designed. They inform the future design of the overall form as well as details of materials, which will be required to be submitted through planning conditions attached to the deemed planning consent. Submissions to discharge the relevant conditions will require a Design Compliance Statement to demonstrate how those proposals comply with the design objectives.

The proposals to date result from an iterative design process informed by the Strategic Outline Business Case, Project Objectives, the development plan, technical route development, public and key stakeholder consultation and pre-application meetings with the Greater Cambridge Shared Planning (GCSP). The Design Principles provide the framework for a contextual design approach which seeks to maximise the overall benefit provided by the Proposed Development and demonstrate compatibility with relevant Local Plan policies and guidance.

4. Consultation Strategy

GCP conducted comprehensive consultation on the Proposed Development. The consultation process included five formal stages of consultation with both key stakeholders and the local community from 2016 to 2022, as well as ongoing stakeholder engagement throughout scheme development, through individual and group meetings and written consultations.

The purpose of these consultations was to ensure statutory bodies, landowners, members of the public and other stakeholders understood the Proposed Development and the potential environmental effects. It provided them with a series of opportunities to comment on the proposals at key stages of development and for the project team to ensure these responses were considered as part of scheme design and construction planning.

Each round of consultation was well publicised to ensure a wide range of individuals and organisations had the opportunity to comment. It was also iterative; issues raised informed the Proposed Development and were carefully considered as part of each subsequent round of consultation. Engagement with stakeholders and the wider community has been undertaken, is ongoing and will continue post-submission and up to public inquiry.

After initial engagement with key stakeholders in 2015, scheme development was underpinned by five stages of public consultation between 2016 and 2022. A series of workshops with the specially established Local Liaison Forum (LLF) also played a key role. The programme was adapted over time in response to consultation feedback and as the Proposed Development design progressed. This included stakeholder engagement with those groups and individuals directly affected by the Proposed Development, including local authorities and other statutory consultees. Consultation included a wide range of activities including public exhibitions, working groups and LLF meetings to reach both community and statutory stakeholders.

Stakeholder engagement continued throughout and was not limited to the formal consultation stages. Forums and working groups were set up with key stakeholders and organisations to enable continuous and collaborative dialogue to inform the ongoing design. This process ensured all stakeholders had an opportunity to comment as the design progressed. All feedback was carefully considered as part of the design. Consultees were divided into community and statutory stakeholders.

Community stakeholders

Community stakeholders comprised local Members of Parliament, local councillors, members of the local community and the wider public. It also included local interest groups such as CamCycle, Cambridge Past, Present and Future, the Magog Trust, Hobson's Conduit Trust and local residents' associations. Business groups, representatives and business owners were also consulted.

The Proposed Development identified a wide range of community stakeholders in the early stages of the consultation programme in 2015. This was expanded as consultation progressed, and new stakeholders were added as needed through desktop research and community engagement. A stakeholder list was set up and maintained internally throughout the project. Community engagement comprised public events, one-to-one meetings, site visits and presentations. It included comprehensive engagement with those groups or individuals that might be directly affected by the Proposed Development, as well as those individuals with a more general interest. Consultation with these stakeholders has been ongoing throughout scheme development from 2015 to date. It will also continue post-submission of the TWAO.

Many of these meetings with stakeholders were undertaken through the local parish councils (Babraham, Stapleford, Great Shelford, Sawston, Great Abington, Little Abington), and GCP-hosted forums (LLF and South Area Community Forum), each of which were engaged at key stages of the Proposed Development.

Five formal stages of public consultation are outlined below.

Round	Purpose
A1307 three campuses to Cambridge consultation 2016	The public were invited to consider a range of concepts for public transport improvements and other schemes along the A1307 corridor, including a public transport route.
Cambridge south east transport study consultation 2018	Three high-level strategies for more reliable and sustainable public transport options for journeys between Cambridge and the area to the southeast were taken to public consultation. This consultation also presented details of 17 shorter-term proposals for bus priority, junction improvements, walking and cycling measures and road safety improvements along the A1307 between Haverhill and Cambridge, common to all strategies and to be delivered in Phase 1 of the Proposed Development, with the longer-term public transport improvements presented as the three strategies to be delivered in Phase 2.
Cambridge south east transport – better public transport project consultation 2019	The consultation presented travel hub options, proposed stops and shortlisted route alignments for the Proposed Development. Following the 2019 public consultation, GCP's Executive Board approved the Brown route as the preferred option
Cambridge south east transport phase 2 EIA consultation 2020	The consultation presented information on the Proposed Development design, highlighting refinements since the previous consultation and providing justification for those changes. It identified potential environmental impacts, both positive and negative, set out the proposed measures for mitigation of adverse impacts and provided an opportunity for all stakeholders to comment and give their views on the proposals
Cambridge south east transport phase 2 proposed route change in Stapleford consultation 2022	After the 2020 consultation, proposals for a retirement village in Stapleford were approved on appeal by the Government's Planning Inspectorate. Therefore, amendments had to be made to the proposed bus route and the location of the Stapleford bus stop, to avoid the retirement village. A targeted consultation was held in Stapleford where two route change options were presented.

Statutory stakeholders

The Rules set out the procedure for submission of a draft order under the TWA. Schedule 5 of the Rules identifies the organisations that must be served with a copy of the application and supporting documents. Schedule 6 of the Rules identifies those organisations that must be notified. All groups or organisations listed must be served or notified under the Rules. GCP has termed these 'statutory stakeholders' for the purposes of consultation. Appendix B of the Consultation Report (document ref CSET05-00-00) sets out the Schedule 5 and 6 stakeholders who have been engaged with during scheme development.

Conclusions

Following the five consultation stages, option assessment stages and continuous engagement, points raised by consultees and ongoing engagement with key stakeholders informed design refinements to the Proposed Development. Further community engagement was and will be undertaken as the design developed for the above areas, with the detailed design to be agreed with local planning authority via the relevant planning conditions.

5. Design Objectives

To ensure that the principle of good design is reflected in the detailed design of the Proposed Development, the below design objectives will guide the approval of later detailed matters secured via the proposed planning conditions. The relevant planning authority will have the opportunity for design review at the pre-application stage prior to submission of the discharge of condition applications. The section below sets out how each of the design objectives has been reflected as part of the Order application, how they relate to specific design principles set out in Appendix 1, design and planning policies and how they will be secured through the relevant planning conditions included as part of the Request for Deemed Planning Permission (document ref: CSET-14-00-00).

i) Hard and Soft Landscaping

The approach to landscape design and mitigation across the Proposed Development has been informed by previous landscape character assessments listed below:

- Cambridge South East Transport – Consideration of Green Belt Issues (LDA Design, April 2021);
- Cambridgeshire Landscape Guidelines (Cambridgeshire, County Council, 1991: and
- South Cambridgeshire District Council: Landscape in New Developments Supplementary Planning Document (2010).

The key elements that have been considered to deliver hard and soft high-quality landscape design include:

- Respecting Landscape: ensure that the Proposed Development relates to its immediate setting and the contextual setting. The landscape design should seek to preserve and enhance the local landscape character;
- Appropriate Design: the landscape design should fit well and be of an appropriate scale to the existing landscape character and use the available land effectively. The landscape must function correctly and should work well and be easy, pleasant and safe to use;
- Landscape Management and Maintenance: all landscape management and maintenance requirements should be designed into the final landscape, rather than applied at the end of the design process;
- Encouraging Biodiversity: the Proposed Development should include native species trees, shrubs or herbaceous planting, particularly if it can correct areas of habitat in the context of the Proposed Development; and
- Sustainable Landscape Schemes: a well-designed landscape scheme should help to deliver aspects of social inclusion, effective protection of the environment, prudent use of natural resources, sustainable economic development and green infrastructure. The landscape scheme will be developed with a co-ordinated palette of materials, encompassing both hard and soft landscaping, to establish a clear identity for the Travel Hub and wider busway.

The landscape mitigation aims to integrate the Proposed Development into its landscape setting using the elements that contribute to the existing character of the landscape of woodland, trees, hedgerow and grassland. The design strategy for the busway is to maintain the existing openness of the landscape by using tree-lined hedgerows to screen the route, but not to screen the busway vehicles, as that would require woodland belts that would curtail existing long views over the landscape. Around the bus stops, trees and hedgerows are proposed to screen the car and cycle parking and to tie the stops into the pattern of hedgerows in the surrounding farmed landscape and the trees and woodland-edge planting found around the outskirts of the villages. Similarly, the woodland and tree planting at the River Granta crossings will tie the crossing approaches into the tree-lined river corridor. Planting, listed in the draft Landscape and Ecological Management Plan (LEMP), will be native species, appropriate to the local landscape character and growing conditions. The landscape mitigation has been designed in conjunction with the ecology mitigation.

New woodland with scrub planting will be planted to provide landscape integration, visual screening and connectivity between existing habitats. Planting mixes have been selected to provide a wide variety of species to improve the resilience of the woodland to climate change and disease.

Design details will set out the different landscape treatments of reinforced and un-reinforced embankments. The details will also be provided on the design of vegetated retaining walls and noise attenuation bunds to demonstrate how these elements will be effectively integrated and planted within the landscape.

Hedgerows will provide wildlife corridors, maintaining and improving the integrity of the hedgerow network. Different species mixes will be used across the Proposed Development and will be beneficial to invertebrates and birds.

The draft LEMP for CSET2 sets out the management requirements relating to landscape and ecology during its operation. It identifies the landscape and ecology mitigation and enhancement measures and how future management will ensure that the objectives of the design are achieved. The draft LEMP is in Volume 3 Appendix 2.2 of the Environmental Statement. Monitoring will be undertaken of landscape mitigation features that are designed to encourage higher flight paths in line with proposed planning condition 11 of the Request for Deemed Planning Permission.

Planting Aims, Specifications and Palette

Species	Specification	Percentage mix (%)
Semi-mature trees on Francis Crick Avenue		
Platanus acerifolia (London plane)	Semi-mature: 30-35cm girth: 700-900cm height	n/a
Planting mix for new native species woodland with scrub		
Acer campestre (field maple)	Transplant 1+2: 3 breaks brks: BR: 60/80cm	10
Crataegus monogyna (common hawthorn)	Transplant 1+2: 3brks: BR: 60/80cm	10
Malus sylvestris (crab apple)	Transplant 1+2: 3brks: BR: 60/80cm	10
Prunus avium (wild cherry)	Transplant 1+2: 3brks: BR: 60/80cm	10
Poplus alba (white poplar)	Feathered tree: 175/200cm: BR	5
Quercus robur (English oak)	Feathered tree: 175/200cm: BR	5
Rosa canina (dog rose)	Transplant 1+2: 3brks: BR: 60/80cm	5
Sambucus nigra (elder)	Transplant 1+1: 3brks: BR: 60/80cm	10
Sorbus aucuparia (rowan)	Transplant 1+2: 3brks: BR: 60/80cm	10
Tilia cordata (small leaved lime)	Feathered tree: 175/200cm: BR	15

Species	Specification	Percentage mix (%)
Standard trees for hedgerow, grassland, around busway stops and in the Travel Hub		
Acer campestre (field maple)	16/18cm girth	n/a
Carpinus betulus (hornbeam)	16/18cm girth	n/a
Poplus alba (white poplar)	16/18cm girth	n/a
Poplus nigra (black poplar)	16/18cm girth	n/a
Prunus avium (wild cherry)	16/18cm girth	n/a
Quercus robur (English oak)	16/18cm girth	n/a
Sorbus aucuparia (rowan)	16/18cm girth	n/a
Tilia cordata (small leaved lime - only suitable in grass areas, away from buildings and parked vehicles due to aphid drop)	16/18cm girth	n/a
Tilia tomentosa (silver lime)	16/18cm girth	n/a
Species mix for new hedgerow		
Cornus sanguinea (common dogwood)	1+1: Branched: 3 brks: BR: 80/100cm	10
Corylus avellana (hazel)	1+1: Branched: 3 brks: BR: 80/100cm	15
Crataegus monogyna (common hawthorn)	1+2 Transplant: 3brks: 80-100cm	40
lex aquifolium (holly)	1+2: 5brks: 80-100cm	5
Prunus spinosa (blackthorn)	1+1: Branched: 3 brks: BR: 80/100cm	20
Rosa canina (dog rose)	1+1: Branched: 3 brks: BR: 80/100cm	10


Acer campestre


Alnus glutinosa


Carpinus betulus


Cornus sanguinea


Corylus avellana



Crataegus monogyna



Ilex aquifolium



Poplus alba



Poplus nigra



Prunus avium



Prunus spinosa



Quercus robur



Rosa canina



Salix alba



Sorbus aucuparia



Tilia cordata



Tilia tomentosa

Suggested Materials, Surfaces and Finishes

Culverts
Pre-cast concrete culverts will be required within watercourses and ditches along the route. The structures will result in some exposed concrete as shown in the illustration below. To aid the regrowth of vegetation on the areas disturbed by construction around the culverts, a geotextile to hold topsoil in place while the vegetation becomes established will be laid on the exposed surfaces.



Example of earthworks around a culvert headwall with a web-geotextile used to retain top-soil and aid growth of vegetation.

Bridge over the River Granta at Stapleford and Babraham

The bridges over the River Granta at Stapleford and Babraham will be steel and concrete composite structures. The bridge decks will be weathering steel plate girders in a multi-beam arrangement, with a cast in-situ concrete deck slab. Weathering steel is proposed because it is low maintenance and does not require to be re-painted, though careful detailing is required to ensure that the exposed surfaces of the steel can drain. Weathering steel has an oxidised surface which changes its appearance over time as the surface patina develops and the colour darkens. It will provide a dark, matt surface that will reduce its prominence in the landscape. The bridge beams will be a uniform depth along their length however as the design is developed, a haunched profile could be considered in order to give a different aesthetic appearance.



Illustration of the appearance of weathering steel used in a bridge design. (The CSET bridges will not resemble this bridge design.)

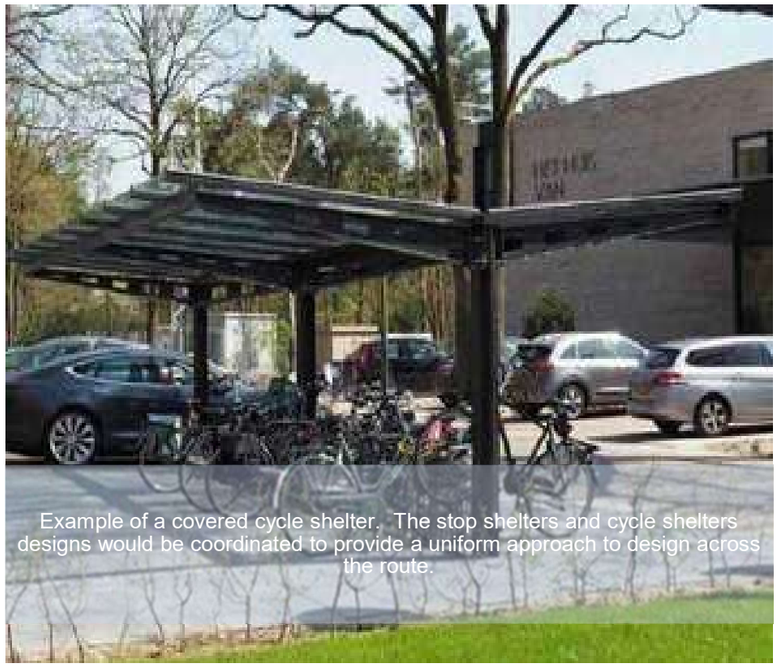
Design of bus waiting shelters

Site furniture including bus shelters at the bus stop will be selected to provide all-weather shelter and to minimise their visual impact. They will be incorporate screens with travel information, CCTV, simple seating and be fully transparent.



Example of simple shelter with minimal visual impact on its country setting. Transparent to provide clear visibility for waiting passengers in all directions.

Design of cycle shelters



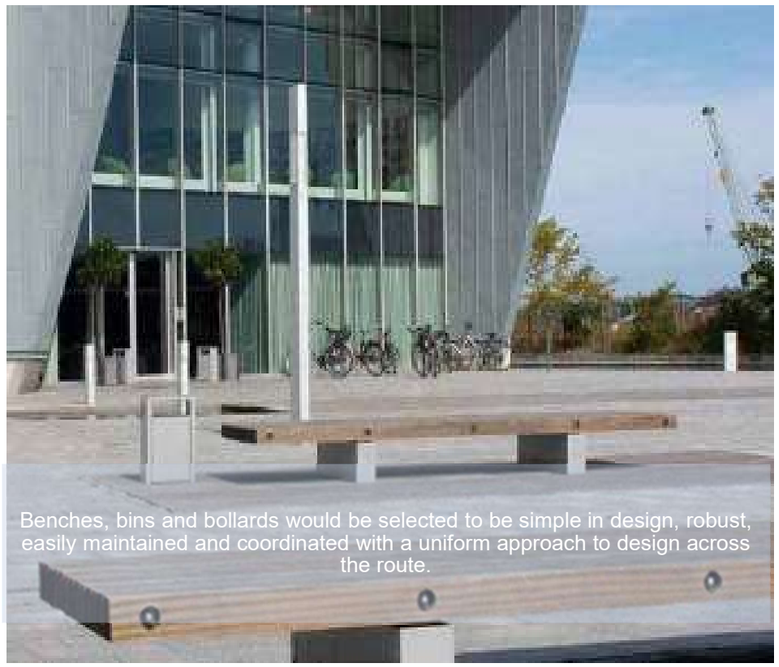
Example of a covered cycle shelter. The stop shelters and cycle shelters designs would be coordinated to provide a uniform approach to design across the route.

Design of cycle stands



The cycle stands would be selected to coordinate with a uniform approach to design across the route.

Seating, bins and bollards



Benches, bins and bollards would be selected to be simple in design, robust, easily maintained and coordinated with a uniform approach to design across the route.

Signage and wayfinding



Example of signage to be used along ATP. Wooden signs to reflect those in use in the local landscape.

ii) Ecology and Biodiversity Net Gain

The ecological objectives for the Proposed Development are to minimise its impacts on protected and notable species, to maintain and enhance habitat connectivity, to replace or provide compensation measures for the loss of hedgerows, trees and grassland, to ensure successful establishment and continued success of the ecological mitigation and to enhance the overall ecological value of the Proposed Development area.

The anticipated legal requirement to deliver 30 years of management for biodiversity net gain (BNG) will be delivered by CCC under the landscape and ecological management function. This will cover all the landscape planting and ecological mitigation measures included in this document. The BNG targets for the various habitats created through the landscape design will be the focus and driver for management for the 30-year period after CSET2 opens. These targets will need to be reviewed periodically to see what progress is being achieved. If additional action is identified as being required, it will be implemented through the CCC. The BNG commitments in terms of target values for different habitats are set out in the technical note on BNG, located in the Appendix of the Environmental Statement. The details related to the approach to Biodiversity Net Gain will be subject to the approval of the local planning authority in line with proposed condition 17 as set out in the Request for Deemed Planning Permission (document ref: CSET-14-00-00).

Further detail on the Biodiversity Net Gain target is given in Section 11 – Planting aims and specifications and in the Environmental Statement.

iii) Flood Storage

The drainage system for the Proposed Development has been designed, in accordance with advice from the Lead Local Flood Authority, the Environment Agency and other relevant stakeholders, to utilise Sustainable Drainage Systems (SuDS) and discharge in line with the drainage hierarchy. Along the busway route, water runs off the surface into the filter drains lining the route. These discharge into swales and then, via detention basins, discharge to the River Granta/Hobson's Conduit at a restricted Greenfield runoff rate. This approach utilises the appropriate level of treatment required prior to discharge into these water bodies. The approach to drainage on Francis Crick Avenue and within the Travel Hub is to also restrict runoff to Greenfield runoff rates and utilise a series of interconnecting SuDS features. Any detailed drainage design will be subject to the approval of the local planning authority in line with proposed conditions 11 and 15 as set out in the Request for Deemed Planning Permission (document ref: CSET-00-14-00).

iv) Lighting Design

Street lighting will be installed along Francis Crick Avenue. Once the busway continues south, along the offline section, there is no street lighting proposed along the busway except at the five road crossings. These are Granham's Road, Hinton Way, Haverhill Road, Sawston Road / Babraham Road and the High Street. There will also be new lighting at the three new bus stops. The lighting distances for the individual stops and road crossings are shown in the Environmental Statement (Doc ref CSET-10-02-00). The lighting along the Proposed Development has been designed with a 4000k colour as per the lighting strategy and agreed specification. However, in sensitive areas the Proposed Development will deploy warm 3000k colour to reduce impacts to nocturnal wildlife. The lighting columns will be approximately 10 m in height along Francis Crick Avenue. For the road crossings, the lighting columns will be 6 m in height and at the Travel Hub and A1307, access the columns will be 8 m in height. The locations of the proposed busway stops are shown on the Deemed Planning Drawings (Sheets 1 to 18) with the final location, layout and external appearance to be approved by the relevant local planning authority via proposed planning condition X as set out in the Request for Deemed Planning Permission (Doc ref: CSET-14-00-00).

v) Busway Route Design

The busway route will generally follow existing ground levels, with a typical vertical alignment variation of 0.5m above or below existing ground levels. There may be short sections where the variation is greater to accommodate localised depressions or raised areas of landform. The vertical alignment will also depart from the typical vertical alignment variation at the crossings over Hobson's Brook and the River Granta. Differences in levels will be gently graded out with grass slopes of a maximum of 1:4m gradient. The planning permission granted by the TWAO will be subject to the proposed planning conditions set out in Schedule 1 to the Request for Deemed Planning Permission (document reference CSET-00-14-00). The proposed planning conditions reserve certain matters including detailed designs of certain elements of the Proposed Development for subsequent approval by the relevant local planning authority. These include matters relating to:

- Phasing of development
- Contaminated land
- Drainage
- Biodiversity
- Works to trees and hedgerows
- Handling of agricultural soils
- Archaeology
- Construction and demolition related matters
- Sustainability
- Hard and soft landscaping
- Appearance, access, layout and scale of elements of the development
- Construction traffic arrangements

vi) Sustainability

As part of the optioneering stages, in Autumn 2021, Atkins were commissioned to undertake a review of the emerging design for the Proposed Development to identify areas for value engineering to reduce costs. The review identified two key areas where costs could be reduced without negatively impacting the performance of the scheme. These were the two bridges crossing the River Granta and the design along Francis Crick Avenue. The two bridges were designed to span the width of the River Granta flood plain resulting in large five span structures. By reducing the width of these structures to four spans, the costs would be reduced whilst also reducing the amount of embodied carbon. A draft carbon management plan has been produced to identify opportunities to reduce carbon emissions through the use of materials with low embedded carbon, and construction practices that will minimise carbon emissions. At the opening year, it is anticipated that fully electric buses with the required range to operate the Proposed Development services will not be available to the market so hybrid buses will operate instead. This situation will change as technology improves and new buses come to market. Fully electric buses will be used for the Proposed Development services at the earliest practicable time. This is likely to be secured through a subsequent planning condition.

The construction works will be in accordance with an approved Construction Environmental Management Plan (CEMP). It will seek to minimise construction traffic, congestion and re-routing to minimise carbon emissions. A Code of Construction Practice will support the Request for Deemed Planning Permission (Doc Ref: CSET-14-00-00 Request for Deemed Planning Permission). A Local Environmental Management Plan (LEMP) will cover all matters specified in the Code of Construction Practice and will be approved in writing by the relevant local planning authority. As part of the LEMP the applicant will undertake all construction works in line with an approved Site Waste Management Plan(s) to ensure that waste arising from the development is minimised and that which is produced is handled in such a way that it maximises opportunities for re-use or recycling. The details related to the sustainable construction elements of the Proposed Development will be subject to the approval of the relevant local planning authority.

In line with best practice, the Proposed Development will use design techniques to enable it to adapt to variations in temperature and water levels addressing CCC's Surface Water Planning Guidance for Developers (June 2021) and the Greater Cambridge Sustainable Design and Construction SPD (2020). Cuttings and embankment works will be designed based on slope-stability analysis using site-specific soil parameters. Additionally, to avoid waterlogging around embankments, appropriate drainage will be included, so that runoff is collected and stored before being released gradually to infiltrate. Tree planting providing shading is proposed near crossings or paths providing natural cooling.

The Maintenance Track will allow pedestrians, cyclists and horse riders greater access to the wider Cambridge area via active modes of travel. The Proposed Development as a whole provides sustainable travel alternatives within the A11 corridor and facilitates an increase in active travel and public transport trips between Cambridge, Sawston, Shelford and other communities within the corridor. Provision of the busway and park and ride facility is anticipated to reduce delays across the network, thereby improving traffic efficiency, reducing stop-start traffic, and reducing fuel consumption of vehicle trips across the network. The mode shift to sustainable modes and the use of electric vehicles and provision of electric vehicle charging infrastructure will contribute to minimising environmental impact.

From the above list of design objectives, a set of final overarching design principles are included at Appendix 1.

6. Route Wide Accessibility

An Equality Impact Assessment (EqIA) has been prepared (document ref: CSET-17-00-00). This considers the impact of the Proposed Development on persons or groups of persons who share characteristics which are protected under Section 4 of the Equality Act 2010. Based on the outcomes of the EqIA, a number of recommendations will be carried forward as part of the detailed design such as:

- Ensure wayfinding within and around the Proposed Development site is clear, easy to read and available in key languages, or uses symbols or maps to provide better understanding and guidance.
- Ensure all information regarding the Proposed Development is provided in accessible formats and in key languages, depending on the linguistic diversity in the study area, wider impact area and greater Cambridge.
- Ensure lane markings on the new access routes and within the Travel Hub are clear to help reduce congestion and the risk of accidents. Lane markings should also consider the needs of disabled people by providing tactile paving and reasonable adjustment at crossings where applicable. These will accord with the DfT “Traffic Signs Manual” 2018 (Chapter 6), the “Inclusivity Mobiliiy: a guide to best practice on access to pedestrian and transport infrastructure” 2022, Standards for Highways “CD143 Designing for Walking, Cycling and Horseriding” 2020 and DfT “Guidance on the Use of Tactile Paving Surfaces” 2021.
- Ensure that the pedestrian environment is managed during construction and remains physically accessible to all. This could include avoiding closing footpaths and providing level access diversion routes. Ensure that wayfinding and signage is clear, easy to read and visually accessible to all in regard to factors such as height, colour and design when pedestrian diversions are put in place.
- The detailed design of the road crossings and shared use route should implement inclusive design principles with appropriate widths and gradients, adequate lighting, use of CCTV, rest places and appropriate separation of users. This will ensure that the route is accessible to all, including older people, those with mobility, visual or hearing impairments and children.

Furthermore, the aim is that the design will create attractive, high quality, accessible, inclusive and safe areas to benefit existing and proposed communities along the route and an inclusive, responsive and flexible design so that all users can use the scheme safely, easily and with dignity, meeting part of Objective 5 to “enhance quality of life by relieving congestion and improving air quality in South East Cambridge”.

7. The Route and Site Specific Design



Figure 1: Proposed Busway route

Departures from vertical alignment

Location	Approximate maximum extent of vertical level change	Key areas where vertical change differs from majority of the route
Francis Crick Avenue to Granhams Road	1m +/-	Hobson's Conduit Crossing: approximately 3m above existing ground level (refer pg 12 & 13)
Granhams Road to Hinton Way	0.5m +/-	North of Coppice Avenue: approximately 1.5m above existing ground level (refer pg 17)
Hinton Way to Haverhill Road	1m +/-	Cutting east of Hinton Way: approximately 2.5m below ground level (refer pg 19)
Haverhill Road to River Granta (Stapleford) crossing	1m +/-	
River Granta (Stapleford) crossing	5m + (to bridge deck)	
River Granta (Stapleford) crossing to Sawston Road	1m +/-	
Sawston Road to River Granta (Babraham) crossing	0.7M +/-	
River Granta (Babraham) crossing	5m + (to bridge deck)	
A11 Travel Hub	0.5m +/-	

7a) Francis Crick Avenue

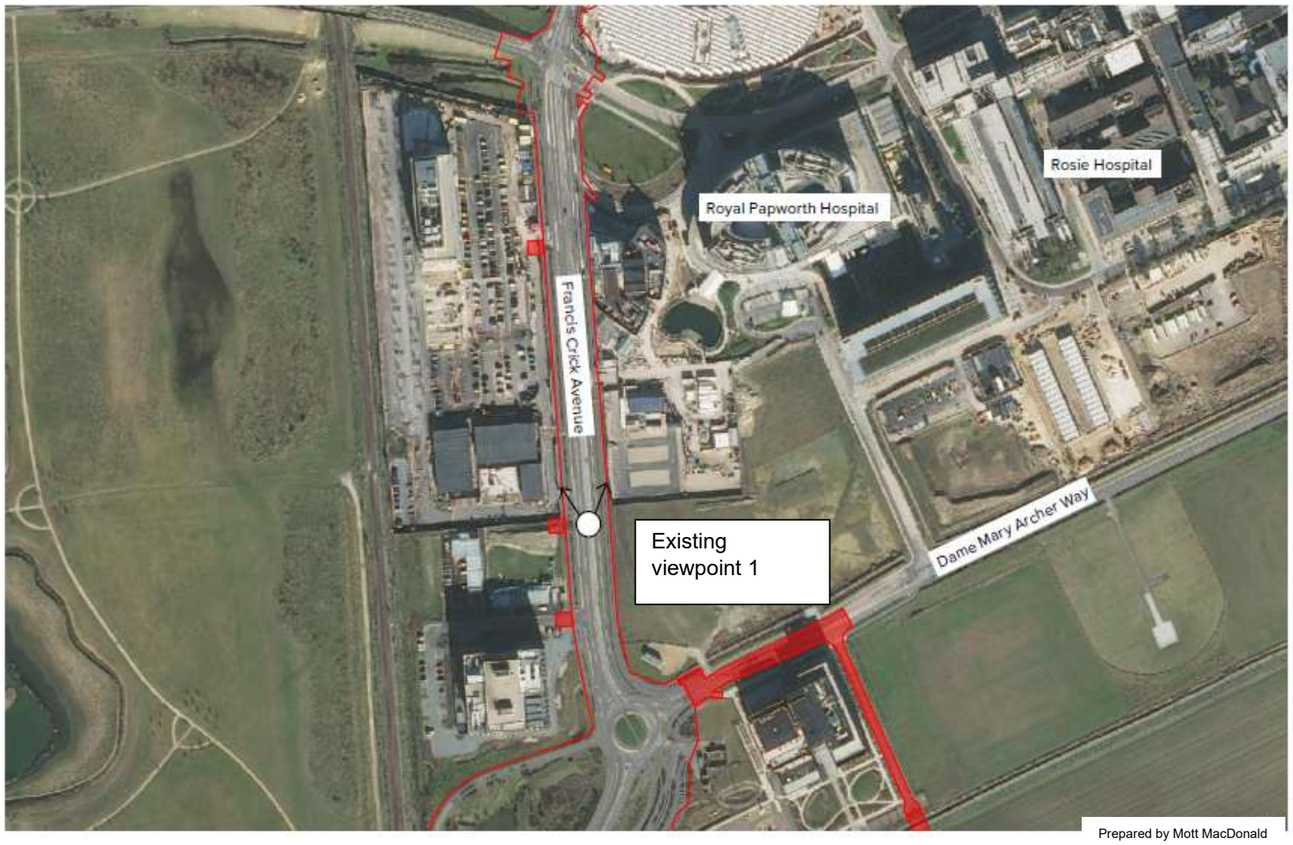


Figure 2: Francis Crick Avenue extents

Busway route

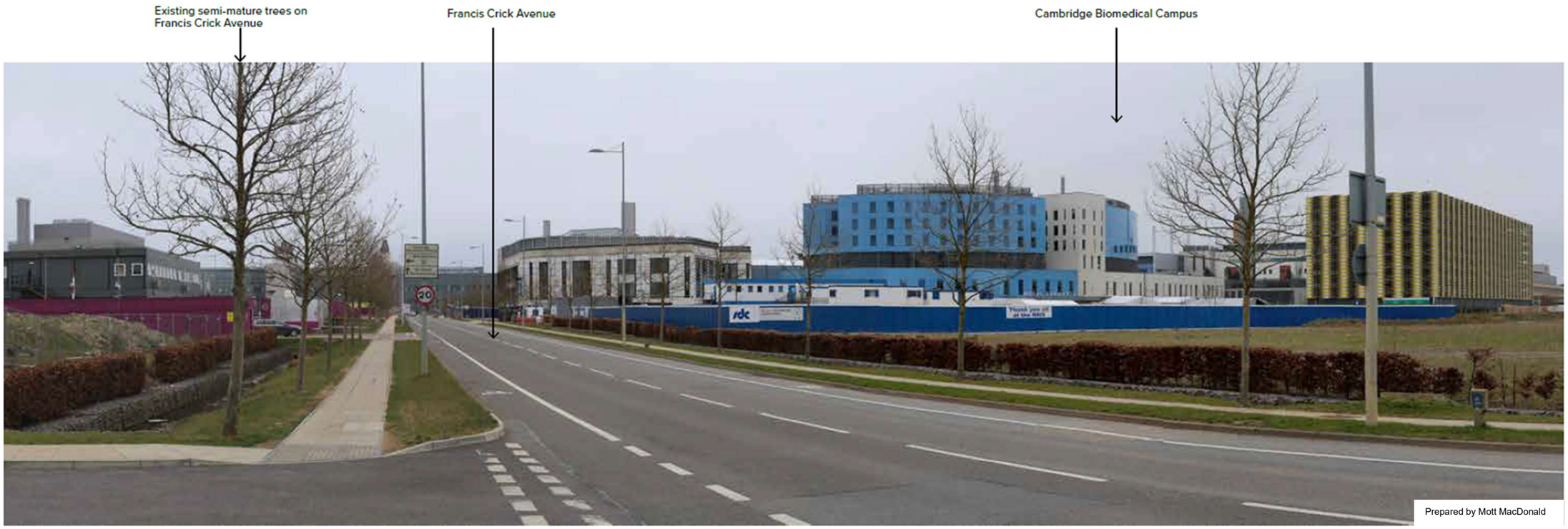
The improvements to Francis Crick Avenue (FCA) particularly to improve walking and cycling do not require a TWAO and can be secured under permitted development rules under the Town & Country Planning (General Permitted Development Order) 2015. The Applicant has agreed this approach with the Greater Cambridge Shared Planning Service, and it has been explained in formal engagement with stakeholders, landowners, and occupiers through the existing project engagement channels.

Local landscape character and setting

Francis Crick Avenue is a two-lane carriageway that passes through the Cambridge Biomedical Campus, between Dame Mary Archer Way and Robinson Way. The carriageway speed is limited 20 mph and the avenue is designed with cycle lanes on both sides of the road and footpaths on both sides of the road separated from the road by grass verges. There a zebra crossing along the midpoint of the avenue. Some sections of the avenue are defined by timbers post and rail fencing. The fencing design has been balanced with safety and security issues. Detailed design development will consider the selection of materials and based on DMRB and MCHW standards.

The buildings of Addenbrooke's and Papworth Hospitals and the multi-storey laboratories, offices and car parks are dominant features in the landscape. There are several vacant plots along the road and a large site currently under development. The area is brightly lit at night by pole mounted street lighting, which contributes to noticeable skyglow above. Tranquillity is low due to activity generated by traffic and ongoing construction.

Figure 3: Existing viewpoint 1: Looking north on Francis Crick Avenue



Busway route design

Along Francis Crick Avenue, buses will primarily utilise the existing road infrastructure, meaning that there will be shared usage with existing road users. The main changes around Francis Crick Avenue, are at the roundabout where Francis Crick Avenue meets Dame Mary Archer Way and Addenbrooke's Road, improved walking and cycling infrastructure on the west side of Francis Crick Avenue, and improvements to the junction with the existing bus guideway (and the proposed Cambridge South Station entrance).

The roundabout at the southern end of Francis Crick Avenue will be enlarged and reconfigured to include a northbound lane passing through the centre of the roundabout with partial signal control. The junction with the existing bus guideway will be modified to deal with the expected vehicle movements and improve pedestrian and cycling infrastructure.

Two new laybys will be provided on Francis Crick Avenue to provide an interchange with Cambridge South Station. The existing side road accesses (west) onto Francis Crick Avenue will be modified to suit a new drainage channel location and the implementation of a two-way segregated cycle track along the western edge. The proposals take into account the proposed-on site development accesses and proposed changes to pedestrian movements.

The route will then curve south-westwards towards the railway line where it will run alongside the railway line before tapering south-eastwards where is crossed Haverhill Road and continues on to Sawton. The route along the avenue will include an additional zebra crossing nearer to the southern roundabout compared to the existing crossing.

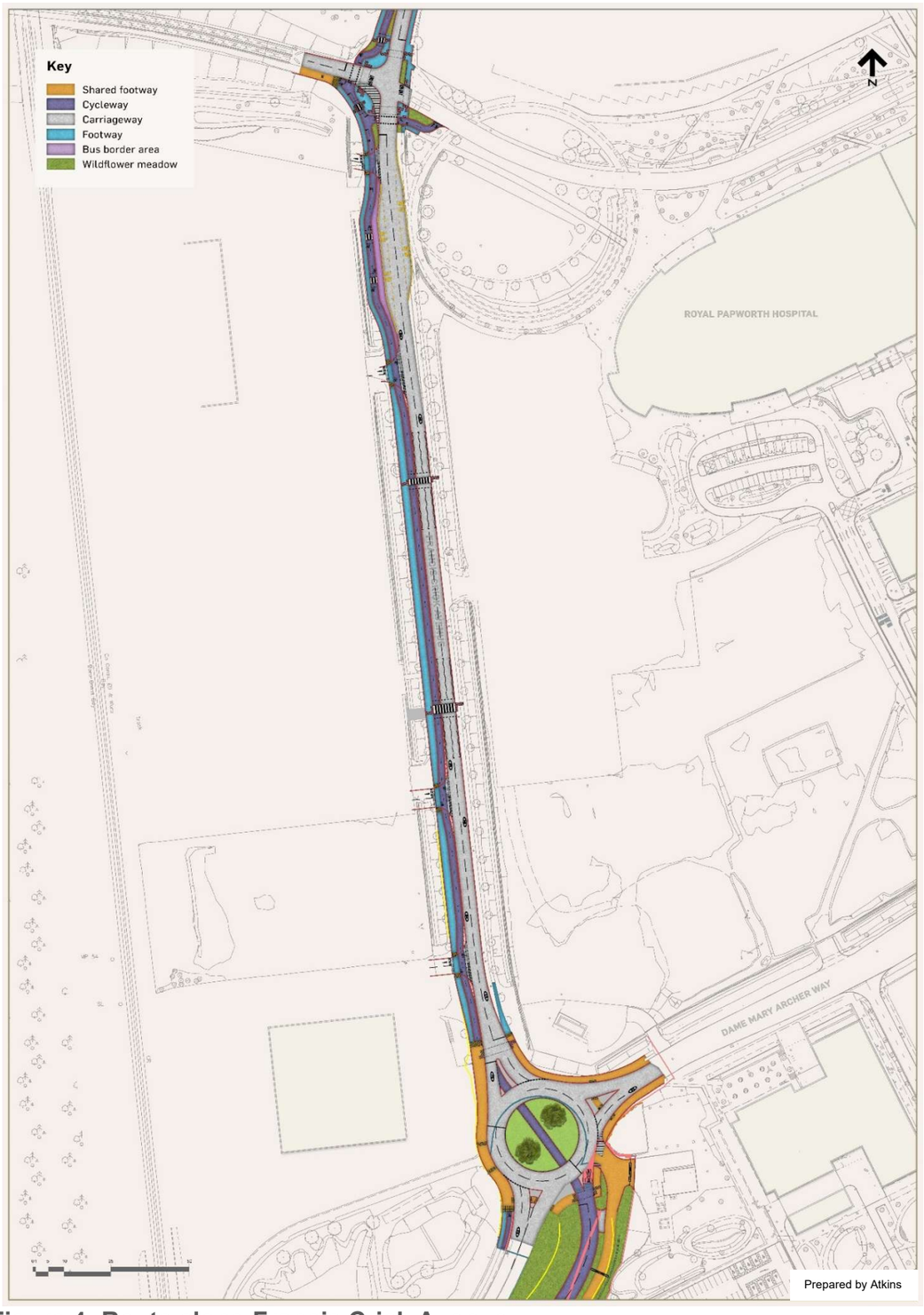


Figure 4: Route along Francis Crick Avenue

Connection to guided busway

The existing junction between the Guided Busway, The Broadway and Francis Crick Avenue will remain as a signal controlled junction but will be modified to accommodate the busway route including cyclepath and footpath. Powers to effect modifications to Francis Crick Avenue, on the Cambridge Biomedical Campus (CBC) and sought of the existing guided busway connection to CBC are proposed. The current condition of Francis Crick Avenue allows buses to run on that privately maintained road with general CBC traffic.

Interaction with development in the area

Stakeholder engagement and liaison with local businesses has informed the design of Francis Crick Avenue. The proposed design maintains existing access requirements for properties on Francis Crick Avenue as well as those planned as part of the current Addenbrooke's site development programme.

Public realm and landscape design

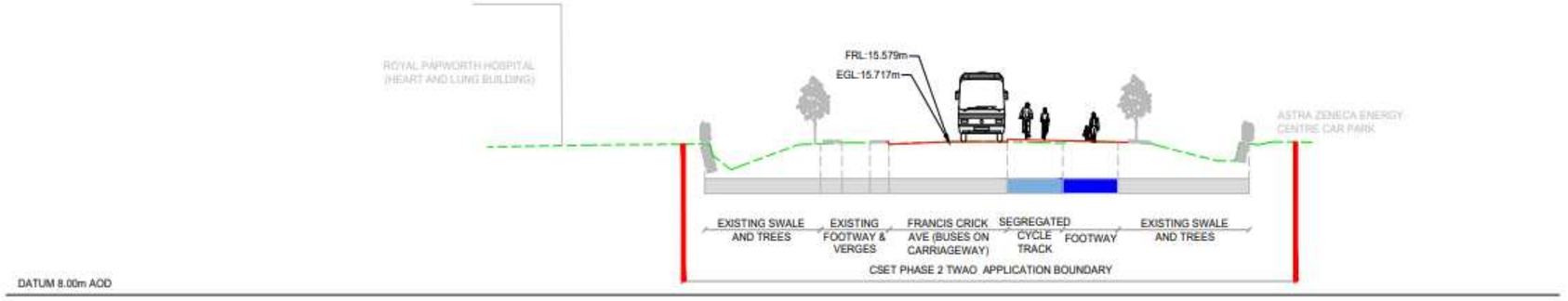
A typical section and layout of Francis Crick Avenue is shown in Figure 5. It shows, going west to east, a footway (3m wide), two way cycleway (3m wide), a southbound single carriageway for the buses (3.7m wide), the existing Francis Crick Avenue and existing verge-footway-verge.

The section on Francis Crick Avenue is the only section of the CSET Scheme where the Service Track will be segregated due to the higher use by vulnerable users expected in this area. Cyclists and pedestrian priority will be maintained along the Service Track via raised table arrangements. The ATP will become a shared path where it joins the existing DNA Cycle Path at its junction with Francis Crick Avenue.

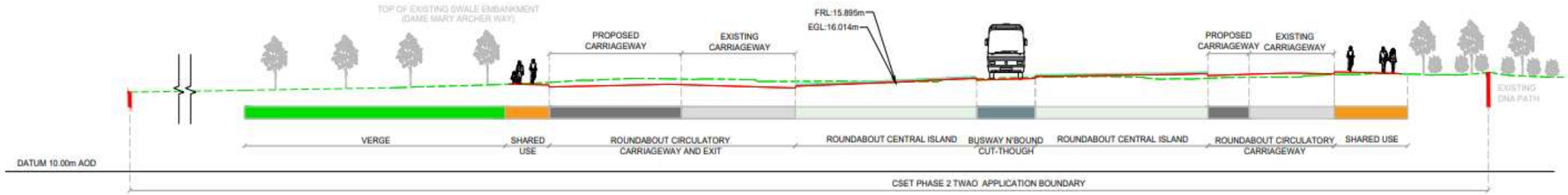
The existing drainage at Francis Crick Avenue will have to be locally altered due to the changes of the road layout although the existing swales will be retained for the majority of the road.

There will be filter drains along features along the grass verges on Francis Crick Avenue, with below ground crates for storage and attenuation and permeable paving on new footpaths and the cycle path. The drainage will discharge into the existing pond west of the roundabout at the junction of Addenbrooke's Road, Francis Crick Avenue and Dame Mary Archer Way.

The existing semi-mature trees on Francis Crick Avenue will be removed during construction. If feasible, they will be lifted by a specialist tree nursery, grown on in the nursery and replanted in new locations at the end of construction. If it is not feasible to do this, due to seasonal or practical constraints, new trees will be planted of a similar stature and species to the existing trees.



SECTION 1 - CHAINAGE 180m
SCALE : 1:250



SECTION 2 - CHAINAGE 450m
SCALE : 1:250

Prepared by Atkins

Figure 5: Sections through Francis Crick Avenue – Deemed Planning Drawing Section Sheet 1 of 10

7b) Hobson’s Conduit crossing



Local landscape character and setting

The Hobson’s Brook rises in Nine Wells Nature Reserve, a small woodland with chalk springs. The surrounding landscape, mainly in arable cultivation, has the low-lying, gentle topography typical of river valleys. The DNA cycle path runs along the railway line, a prominent feature of the landscape. The Cambridge Biomedical Campus and residential development off Addenbrooke’s Road are clearly visible from the area which has a rural-urban fringe character. At night, the area is not lit, but street lighting in Cambridge is a source of sky glow to the west and north. Tranquillity is low due to activity generated by the railway line.

Figure 6: Hobson’s Conduit Crossing Plan

Figure 7: Existing viewpoint 2: Looking west from entrance to Nine Wells nature reserve





Figure 8: Hobson's Conduit route alignment

Landscape design

The tree-lined hedgerow along the eastern side of the route and embankment of the Hobson's Conduit crossing will screen views of the busway and partly filter views of the passing vehicles on the route from Nine Wells Nature Reserve and the public rights of way in this area. Two ponds within a grassed area are proposed on the eastern side of the busway as part of the landscaping and biodiversity enhancement strategy and drainage strategy. A Water Vole pond will be provided adjacent to the existing Hobson's Brook culvert that runs cross the north of the proposed vole pond and that then connects into Nine Wells Nature Reserve. The second attenuation pond will be located to the south in the same parcel of land. A grass drainage swale that runs parallel to the route will also collect surface water run-off from the route.

Hobson's Conduit Crossing

The Hobson's Conduit crossing will be an integral concrete bridge comprising a bridge deck constructed from pre-cast pre-stressed concrete beams, supported by reinforced concrete abutments on bored piles. The bridge will have a clear span of 15 m and be 14.4 m wide. There will be a minimum clearance from the underside of the deck to the ground of each side of the brook of 2.4 m. The bridge will have in-line wing walls supporting earth approach embankments.

Where the busway and Service Track join the roundabout at Addenbrooke's Road and Dame Mary Archer Way, they cross an existing drain. This crossing will comprise a pre-cast concrete culvert installed into the existing drain with headwalls at each end. The culvert will be around 45m long, 2m wide and 1m high. The culvert and headwalls will be backfilled and the land restored to grassland.

Where the Service Track runs parallel to the railway line, continuing the DNA Trail, a separate foot/cycle crossing of the ditch will also be required. It is envisaged that this would be a simple hardwood timber structure supported on bank-seat foundations.

Agree a 40m minimum buffer from the site compound to Nine Wells LNR and Hobson's Brook to avoid construction impacts?
Agree a buffer and boundary treatment to Nine Wells LNR to avoid recreational impacts form the proposed cycle route diversion?

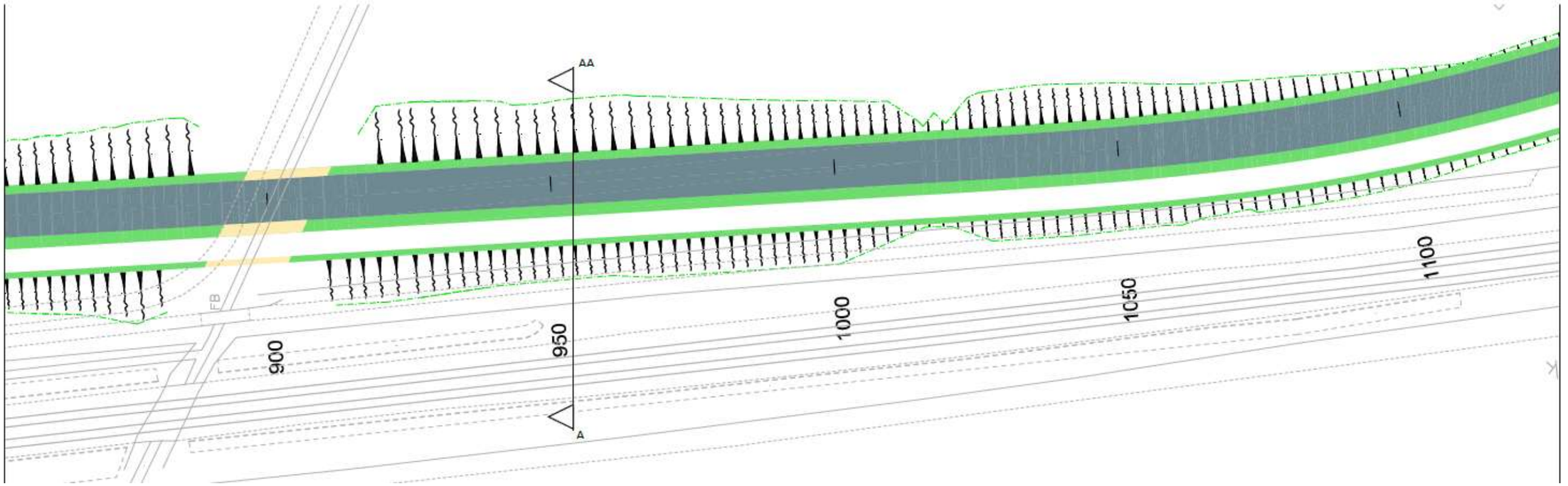
Connection with the existing DNA Path

Connection with DNA Cycle Path: a short section of the existing DNA Cycle Path will be diverted along the new Service Track. The metal double helix sculpture will be moved to a new location along this section of the path. The existing-coloured surfacing along the DNA Cycle Path will be replicated along the section of diverted path.



Sculpture of Double Helix

Figure 9: Section from engineering drawings



Plan not to scale

Prepared by Mott MacDonald

Figure 10: Section across the approach to the Hobson's Conduit crossing (taken from Deemed Planning Drawings Sheet 2 of 16)

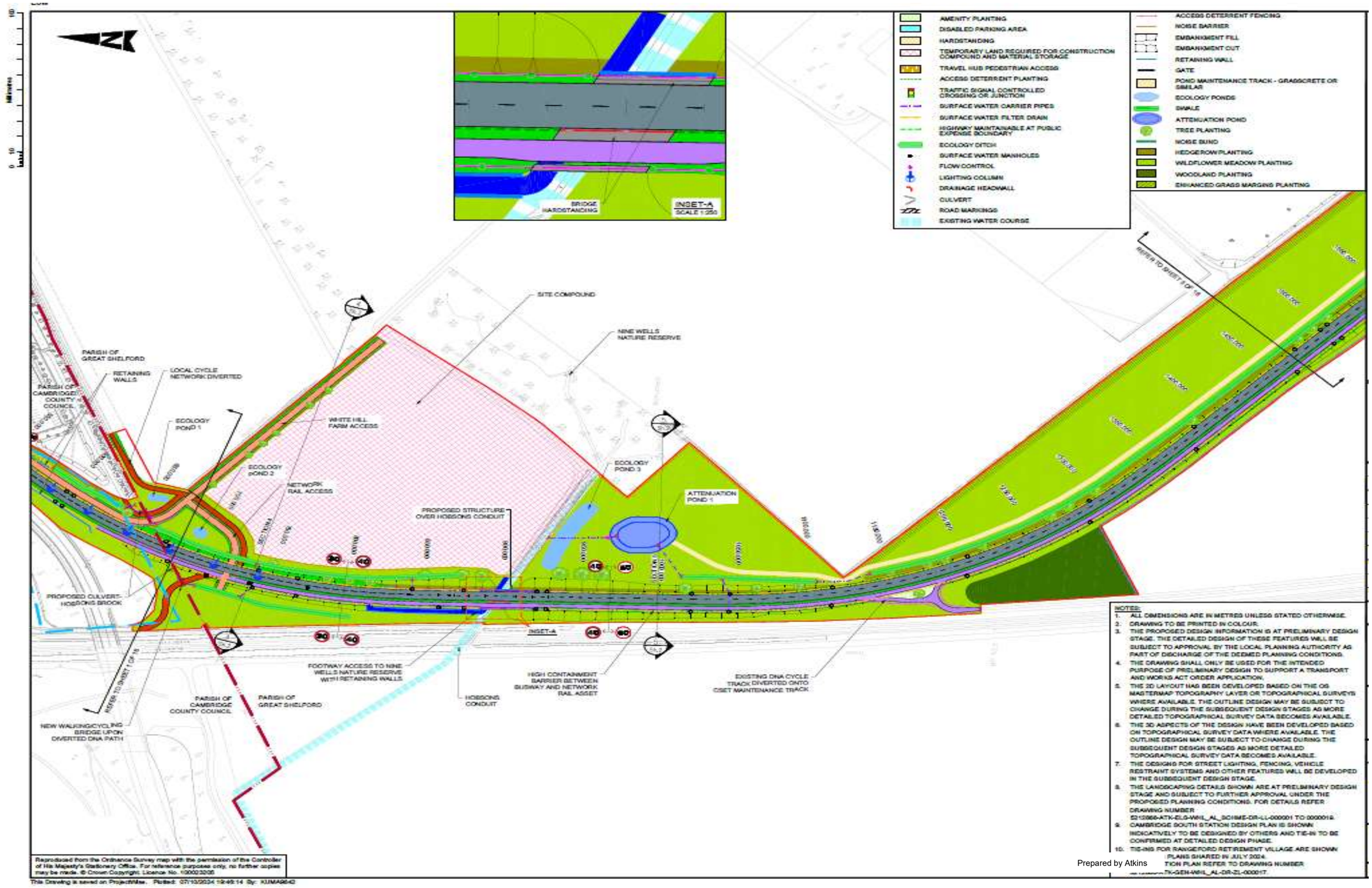


Figure 11: Verified photomontage illustrating the Hobson's Conduit crossing (baseline)

Field of view 53.5 degrees x 18 degrees



Figure 12: Verified photomontage illustrating the Hobson's Conduit crossing (year 1)

Field of view 53.5 degrees x 18 degrees

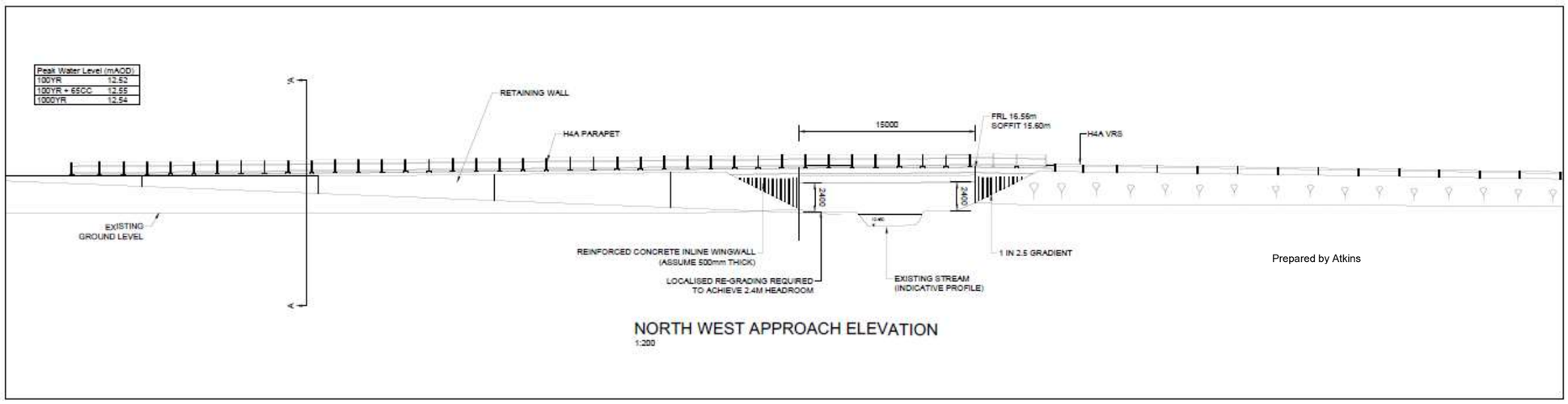


Figure 13: Verified photomontage illustrating the Hobson's Conduit crossing (year 15)

Field of view 53.5 degrees x 18 degrees



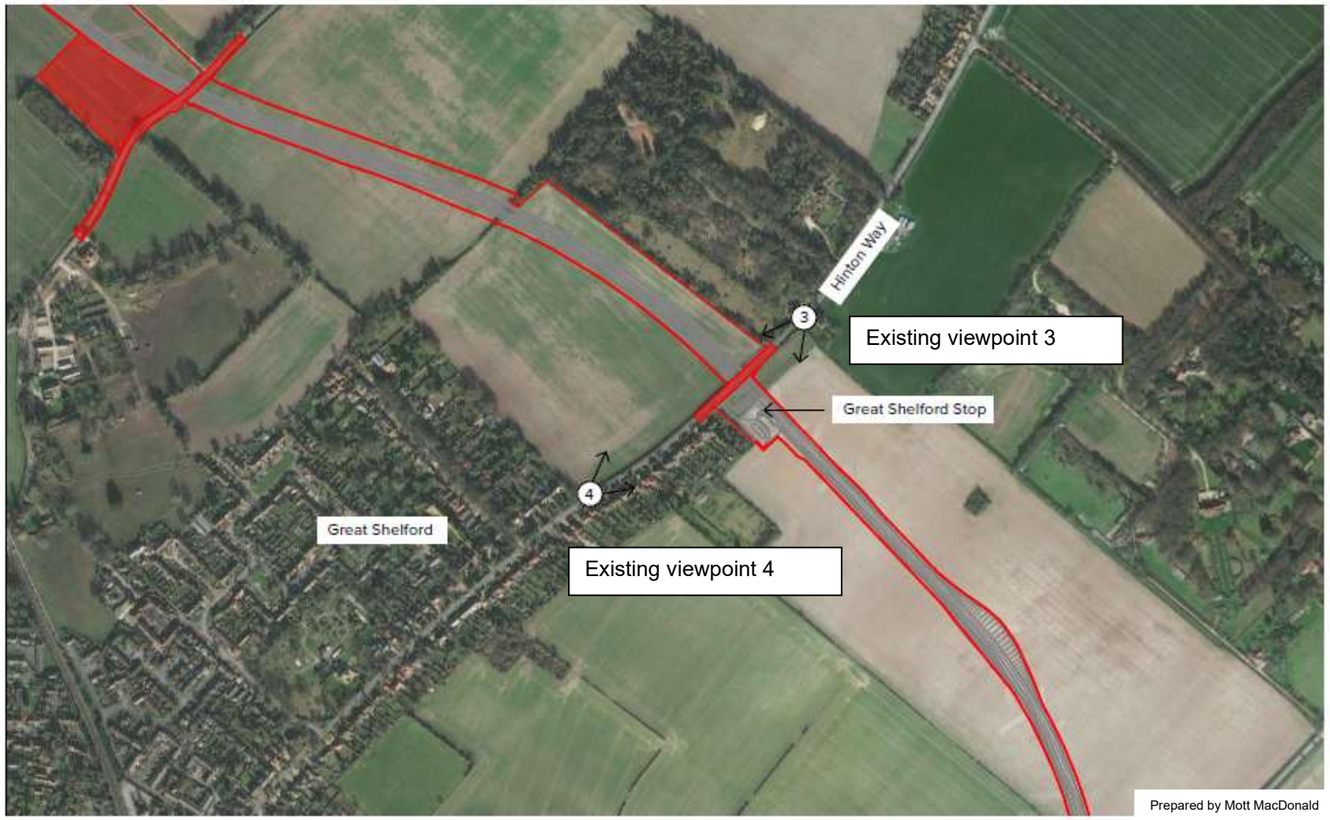
Figure 14: Elevation of the proposed Hobson's Conduit Bridge



Hobson's Conduit crossing – parameter information:

Span: 15 metres
Width: 14.4m
Height of top of deck above ground level: 3m
Height of equestrian guard rails: 1.8m
Height of pedestrian guard rails: 1.1m
Approach embankment slopes: 1:4 gradient

7c) Great Shelford stop and Hinton Way crossing



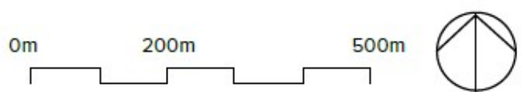


Figure 15: Great Shelford stop and Hinton Way crossing plan

Local landscape character and setting

The location of the Great Shelford stop is on Hinton Way, on the northern outskirts of Great Shelford. The land is low-lying but rises towards the wooded chalk ridge to the north-east. Hinton Way is lined with dense hedgerows, which limit views out to the farmland to east and west. Residential properties on the edge of the village are well screened from the surrounding countryside by garden vegetation. At night, Hinton Way is lit by street lighting, but the farmland beyond the lit area is dark. Tranquillity is reduced during the day by road traffic.



Figure 16: Representative viewpoint 3: Looking south-west on Hinton Way



Figure 17: Representative viewpoint 4: Looking north-east on Hinton Way



Design of Busway stop

The busway stop will comprise a PTR platform to mount from and dismount onto, a shelter, seating, cycle parking, blue-badge parking, a drop-off and pick-up area, CCTV and lighting. The shelter, seating, cycle parking, signage and lighting will be selected to have a minimum visual impact on their rural setting. The location of cycle parking will be located as close as possible to key points of interchange. There will be clear and safe routes in and out of the bus stop area for cyclists, which will also help to reduce potential conflicts between cyclists and large pedestrian flows. A timber noise barrier will reduce noise impacts on the residential properties closest to the stop.

The busway route where it crosses Hinton Way will be improved and marked up to allow safe via a signalised crossing.

Landscape design

The existing hedgerow along Hinton Way and the maturing tree-lined hedgerow to be planted along the north-eastern side of the busway and around the Great Shelford Stop will largely screen the stop, crossing, route and moving vehicles from view, although the lighting columns will remain visible above the vegetation. The stop and associated planting will appear to merge into the background planting in the garden and along the field boundary immediately south of the stop.

Design parameters

- Covered ground level cycle stands for 40 cycles;
- Blue badge parking for 5 cars;
- Car drop-off and pick-up zone;
- Waiting shelter, CCTV, lighting and real-time information on the bus service;
- Street lighting at the crossing and stops: 6m high columns;
- Timber noise barrier: 2m high, approximately 70m long adjacent to property boundaries on Hinton Way;.
- Noise bund: 1m high, approximately 100m long.

Departures from vertical alignment parameters

The busway route will depart from the typical vertical alignment parameters for an extended length in two locations: north of Coppice Avenue and east of Hinton Way.

North of Coppice Avenue, a short section of the route (approximately 200m long) will be raised above existing ground levels, to a maximum of 1.5m, due to a local depression in the landform. The gradient of the embankment on the southern side of the route will be slackened to provide a gentle transition between the route and surrounding ground levels and it will be planted with trees and shrubs to create a woodland. In time, the busway route and vehicles will be screened from Coppice Avenue as the woodland becomes established.

East of Hinton Way, a short section of the route (approximately 250m long) will be in cutting, to a maximum depth of 2.7m, due to a local variation in the landform. The higher slope, on the northern side of the route, will be cut into the chalk. It will be seeded with a grass and wildflower seed mix suitable for a chalk downland habitat.

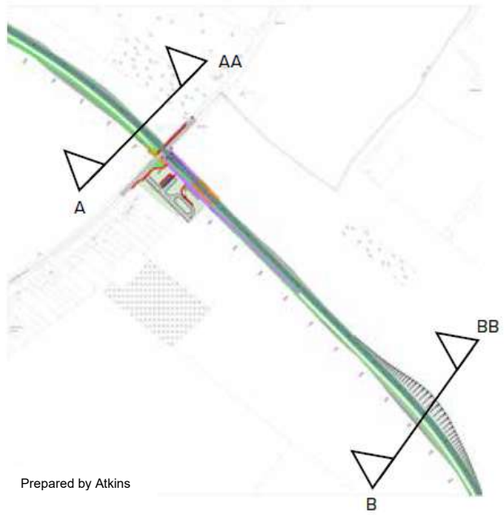
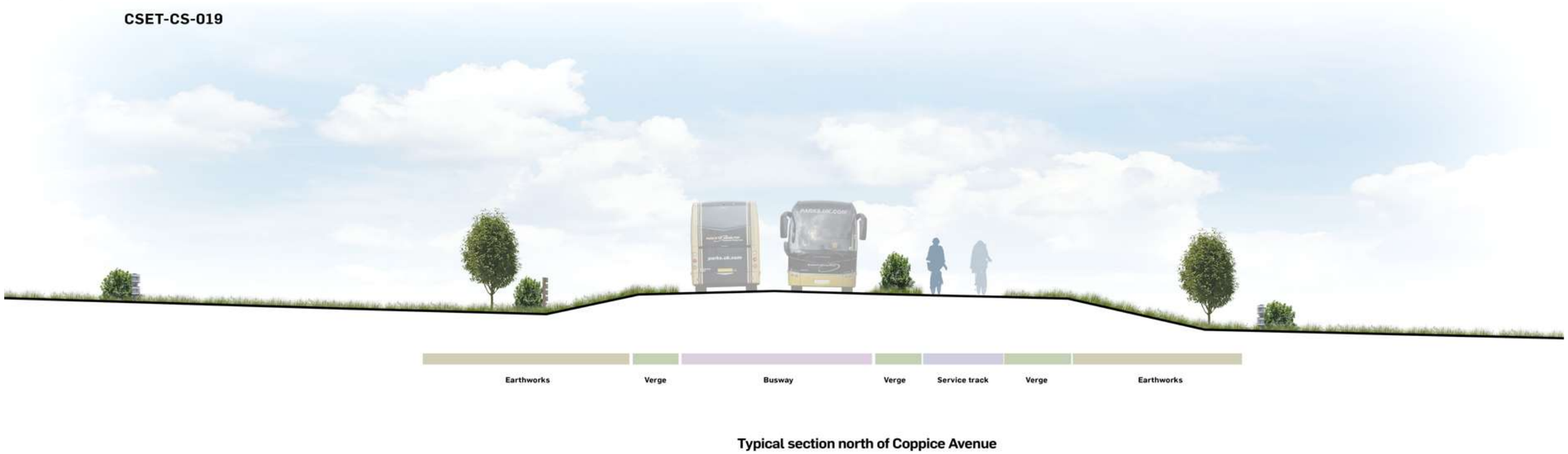


Figure 18: Busway route and crossing junction

Figure 19: Busway Route north of Coppice Avenue

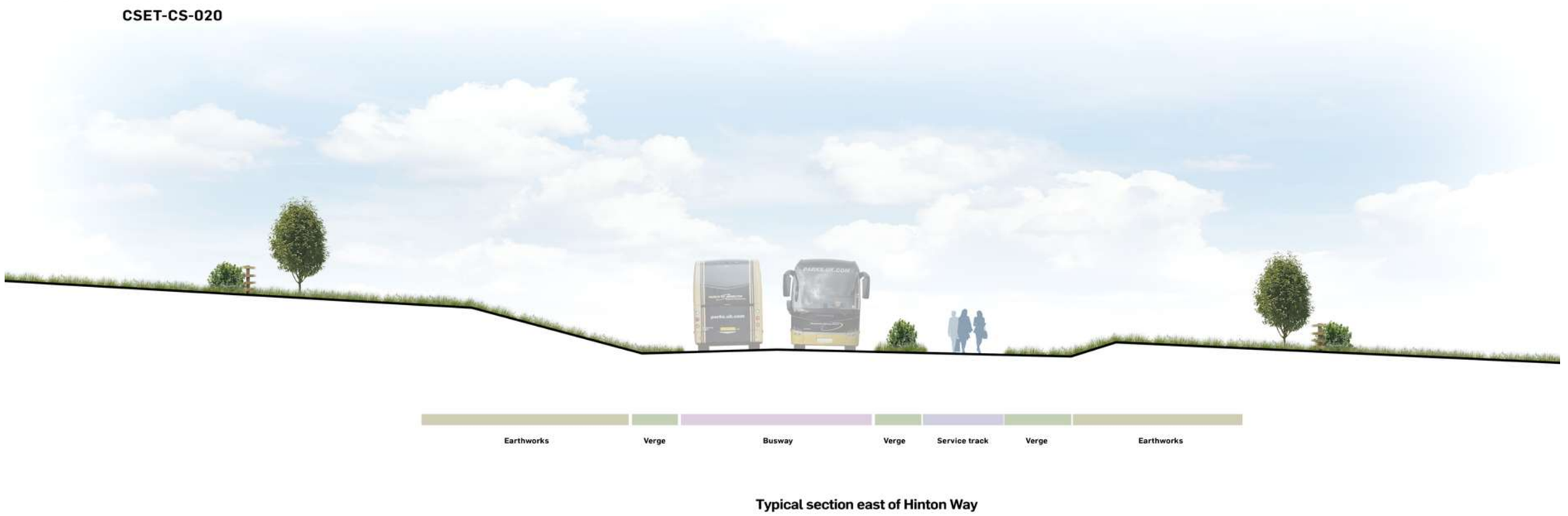
(Planting shown at year 15)



Prepared by Atkins

Figure 20: Cutting east of Hinton Way

(Planting shown at year 15)



Prepared by Atkins

7d) Stapleford stop and Haverhill Road crossing

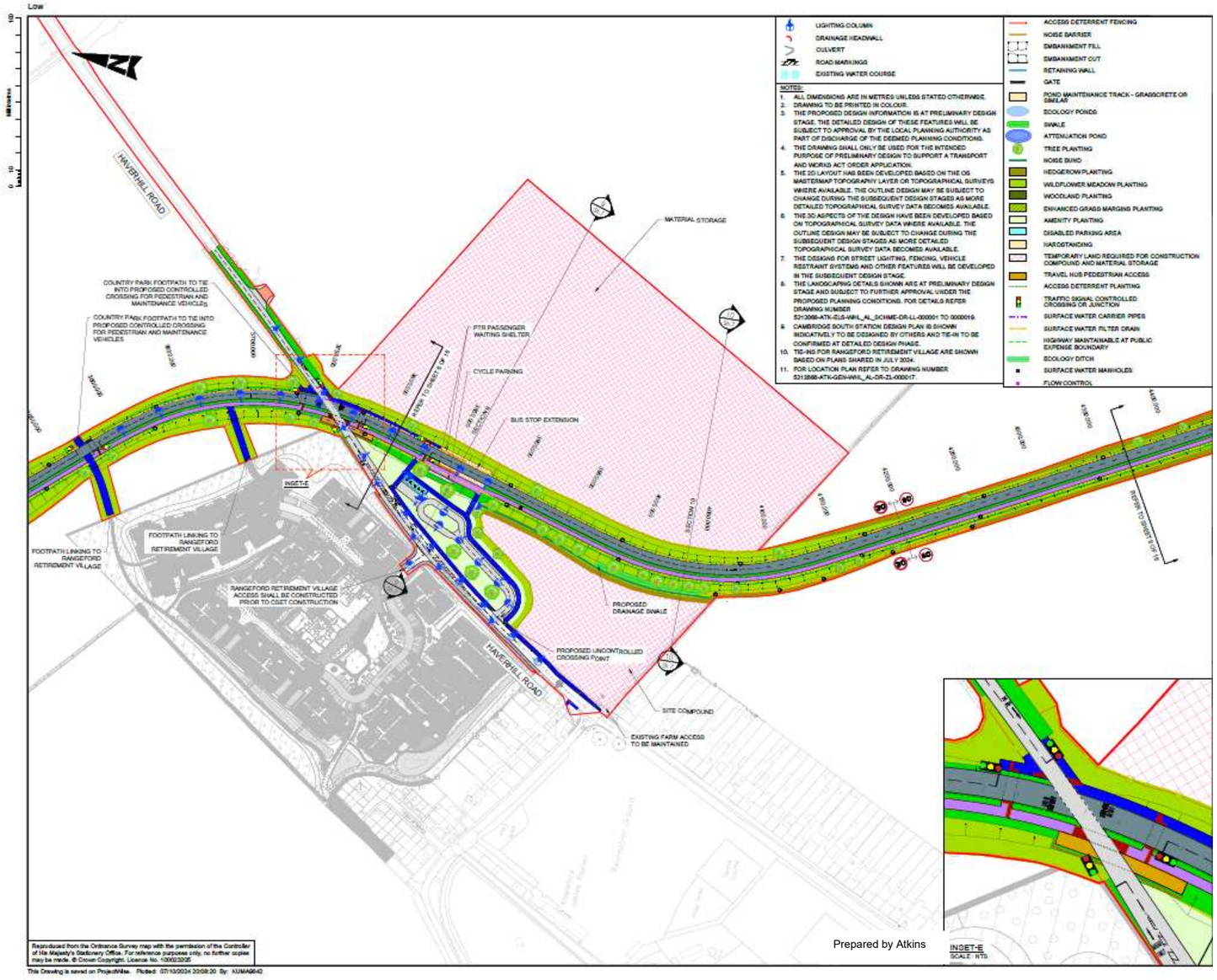


Figure 21: Stapleford stop and Haverhill Road crossing plan (Deemed Planning Drawings Sheet 7 0f 16)

Local landscape character and setting

The location of the Stapleford stop is on Haverhill Road, on the outskirts of Stapleford. The land is low-lying but rises towards the chalk ridge to the north-east. There are open views towards the wooded Fox Hill, Magog Down, Little Tree Hill and arable farmland from the road. Residential properties on the edge of the village are partially screened from the surrounding countryside by garden vegetation. At night, Haverhill Road is lit, but the farmland beyond the lit area is dark. Tranquillity is reduced during the day by road traffic.

The alignment of the route to the west of Haverhill Road has been amended to account for the new retirement village being built by Rangeford. As part of that development, a Country Park is proposed. The Proposed Development is designed to allow for access to the Country Park from the retirement village via footpaths to tie into the proposed controlled crossing for pedestrians and maintenance vehicles.

Figure 22: Representative viewpoint 5: Looking south-west on Haverhill Road



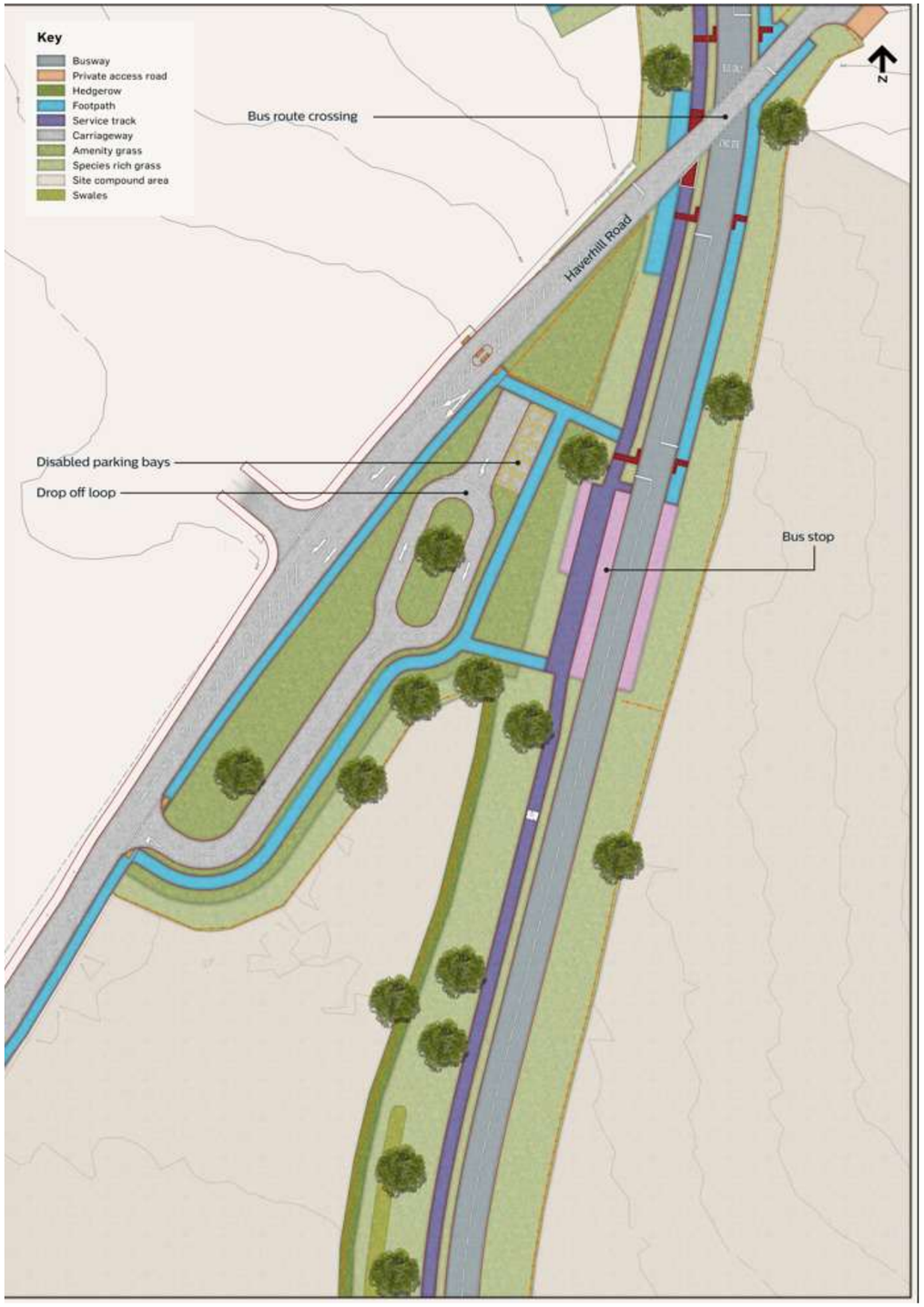


Figure 23: Busway route and crossing junction layout

Design of bus stop

The busway stop will comprise a shelter, seating, covered cycle parking, blue-badge parking, a drop-off and pick-up area, CCTV and lighting. The shelter, seating, cycle parking, signage and lighting will be selected to have a minimum visual impact on their rural setting. A noise bund, 1m high will reduce noise impacts on the residential property closest to the stop.

The busway route will cross Haverhill Road via a signalised crossing.

Landscape design

Tree-lined hedgerows will be planted along both sides of the busway route and around the Stapleford stop. This planting will largely screen the busway route and users on the ATP from the residential properties. However, the Stapleford stop, street lights and tops of the busway vehicles will remain visible above the vegetation.

Design parameters

- Covered, ground level cycle stands for 40 cycles
- Blue badge parking for 5 cars
- Car drop-off and pick-up zone
- Waiting area with shelter, CCTV, lighting and real-time information on the bus service
- Street lighting at the crossing and stops, 6m high columns
- Noise bund: 1m high, approximately 200m long

Figure 24: Verified photomontage illustrating the Stapleford stop, view from Haverhill Road (baseline) Field of view 53.5 degrees x 128 degrees



Figure 25: Verified photomontage illustrating the Stapleford stop, view from Haverhill Road (year 1)

Field of view 53.5 degrees x 128 degrees



Figure 26: Verified photomontage illustrating the Stapleford stop, view from Haverhill Road (year 15)

Field of view 53.5 degrees x 128 degrees



7e) River Granta (Stapleford) crossing

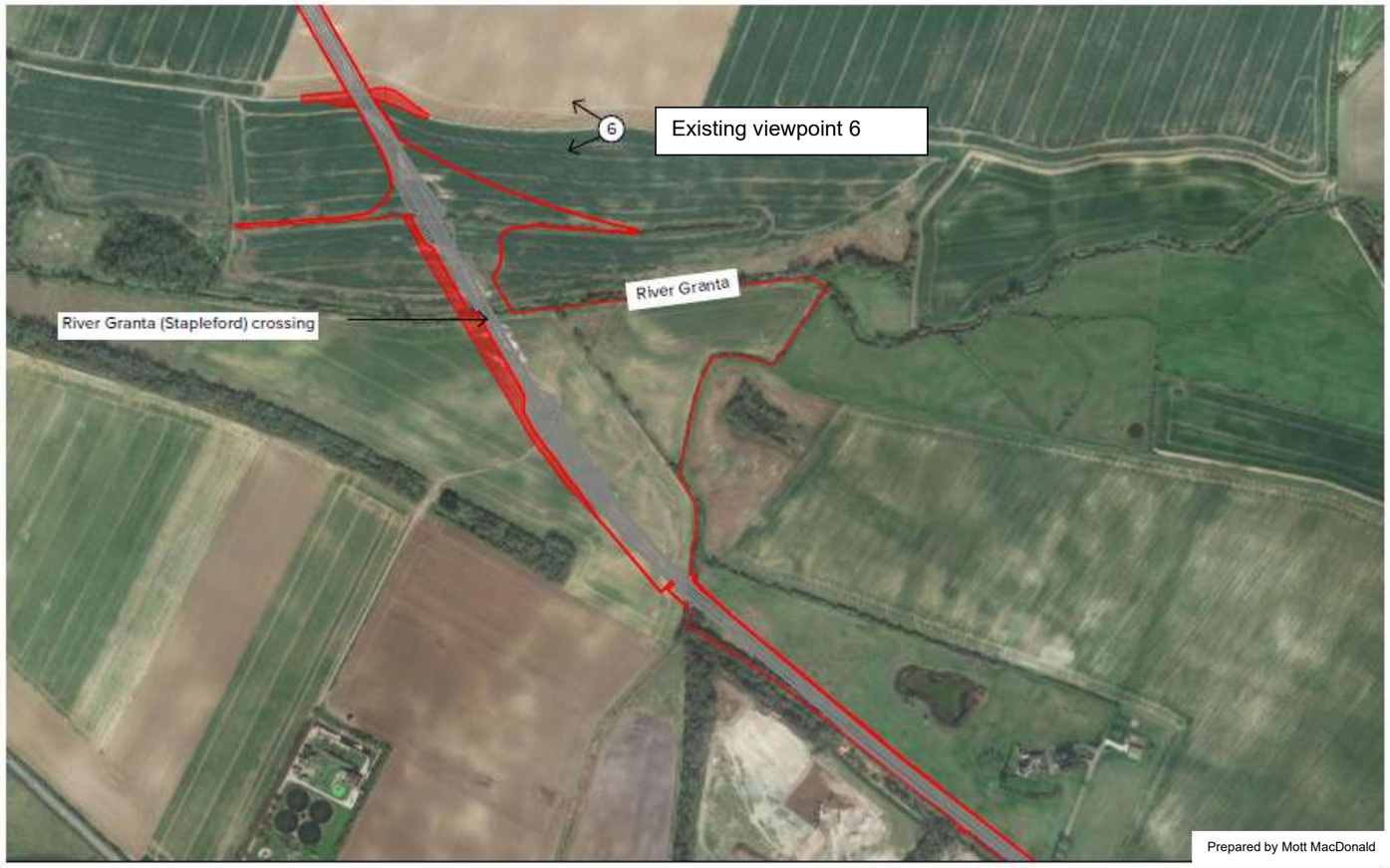


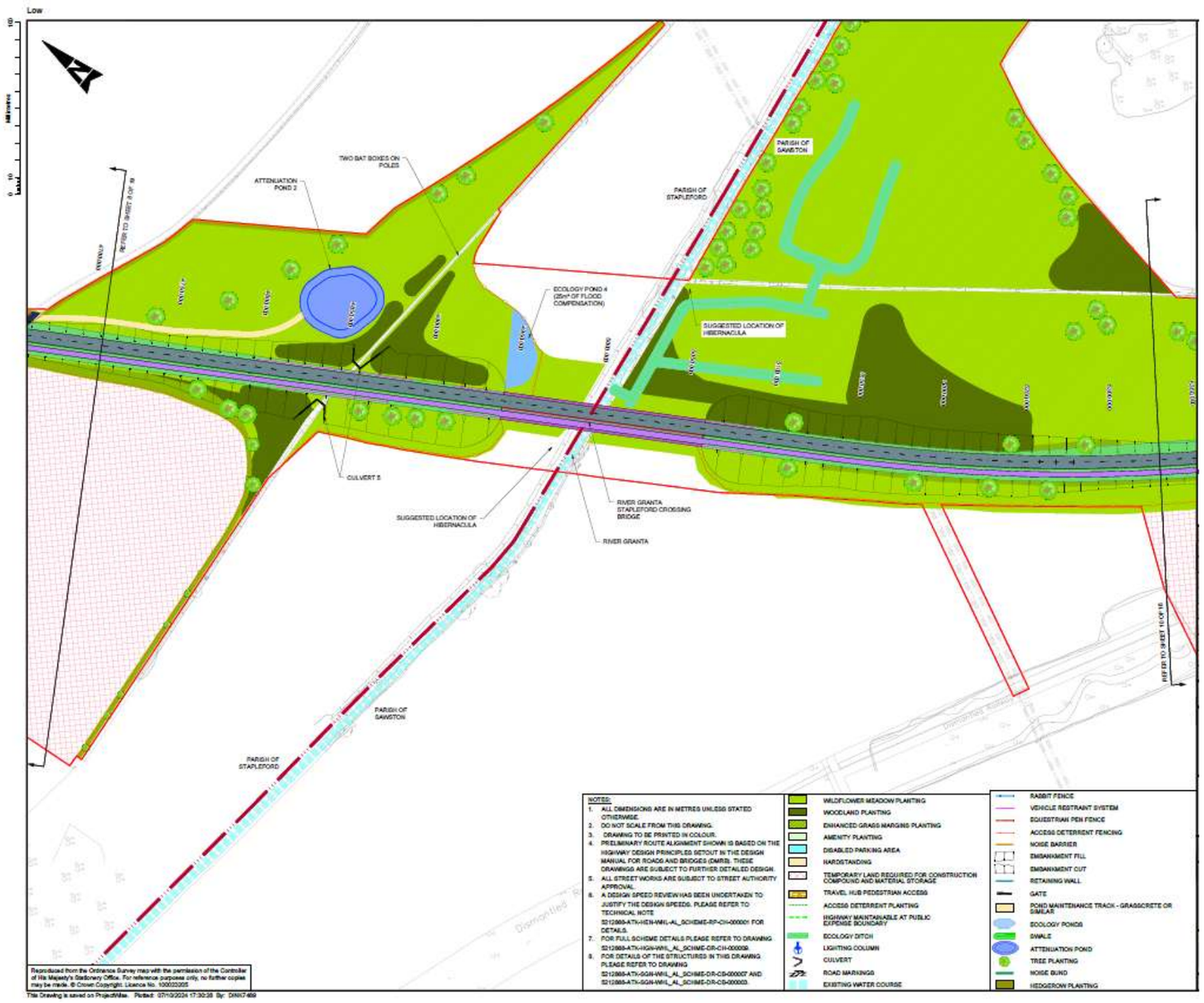
Figure 27: River Granta Crossing plan

Local landscape character and setting

The landscape between Stapleford and Sawston has the low-lying, gentle topography typical of river valleys. The tree-lined river and the arable fields, pastures and water meadows on the fertile soils of the valley are characteristic of the area. The River Granta is a County Wildlife Site along this stretch. Bridleway 212/3 passes close to the busway. The area is dark at night but skyglow above Cambridge and Fourwentways roundabout is evident at night. Noise and activity generated by traffic on the A1307 detract from the otherwise rural character of the area and tranquillity.

Figure 28: Representative viewpoint 6: Looking west from bridleway 212/3





Prepared by Atkins

Figure 29: Busway route and landscape plan (Landscape Layout Sheet 9 of 18)

Design of bridge structure

The bridge spans the River Granta and the river flood zone. The bridge abutments will be outside the flood zone boundary to minimise the impact on the containment capacity of the flood zone. The bridge will be a five span steel and concrete composite viaduct structure, comprising one 34.0m long main spans with four end spans 21.0m long to give an overall length of 118m. The ends of the bridge will be supported on piled reinforced concrete abutments with in-line wingwalls parallel to the alignment of the bridge. The bridge will be supported on four sets of intermediate piers, each comprising two columns at each pier, on bored piles with a pile cap. The columns will support the bridge deck at each pier location by means of a steel diaphragm between the beams.

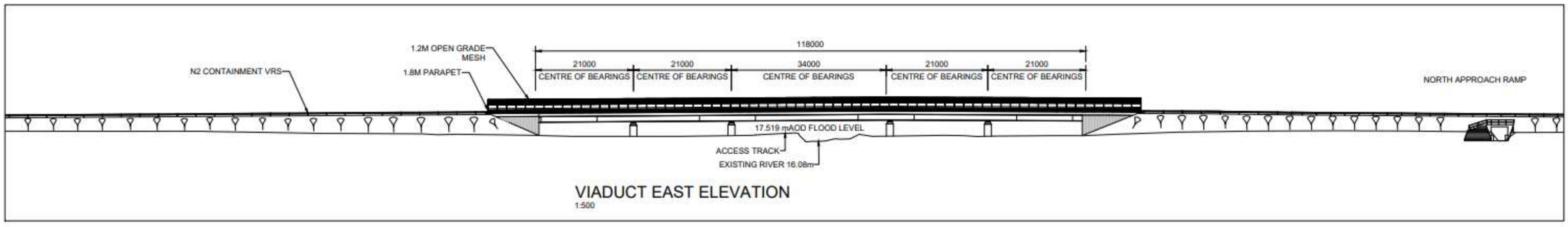
It is likely that the proposed bridge beams will be fabricated from weathering steel which has an oxidised surfaced appearance. However, as the bridge should integrate visually into the landscape and be low maintenance, other materials such as painted steel will also be tested. Piers are positioned to avoid any impact on the River Granta watercourse. The earth approach embankments to the bridge will be landscaped and profiled in order to seek to minimise the visible exposed concrete.

The bridge approach embankments will cross two ditches north and south of the Stapleford Crossing. The crossings will be in the form of pre-cast concrete culverts installed in the ditches with headwalls at each end. The north culvert will be approximately 40.0m long, 4.5m wide and 3.0m high, with a mammal ledge incorporated into the structure. Similarly, the south culvert will be approximately 32.0m long, 4.0m wide and 1.5m high, with a mammal ledge incorporated into the structure. The headwalls will be back-filled and returned to grassland. The total height of the bridge to the carriageway level will be approximately 5.5 m above the existing ground level.

Landscape design and Biodiversity Net Gain

Hedgerow, trees, and woodland planted around the embankments and bridge of the River Granta (Stapleford) crossing will partially screen them from view and integrate them into their landscape setting. The new planting will also, with the water vole mitigation pond, contribute to biodiversity enhancement. Trees within the flood zone have been strategically placed in line with the bridge piers to minimise the impact on the flood zone and soften the engineered appearance of the structures.

Figure 30: Section from engineering drawings – Structure 6 Stapleford South Approach Ramp



Prepared by Atkins

Figure 31: Section through bridge crossing

(planting shown at year 15)

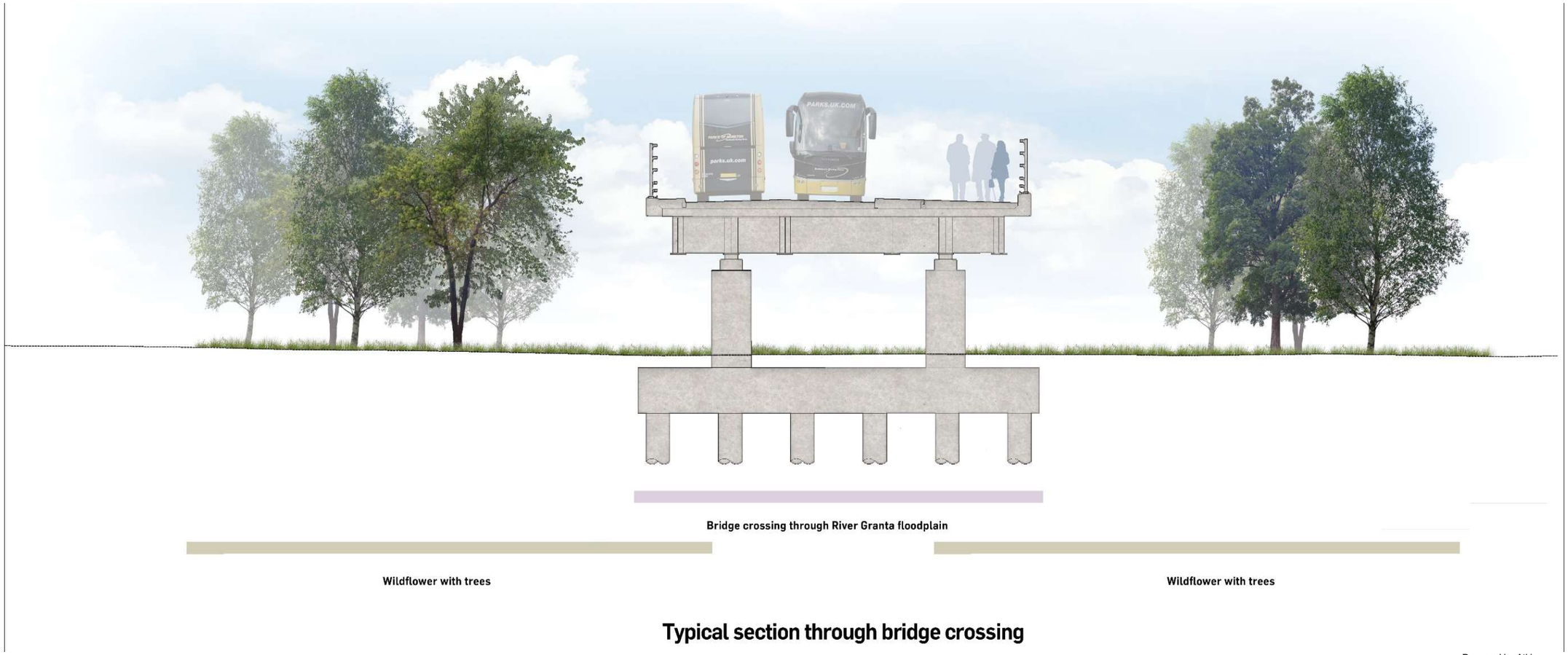
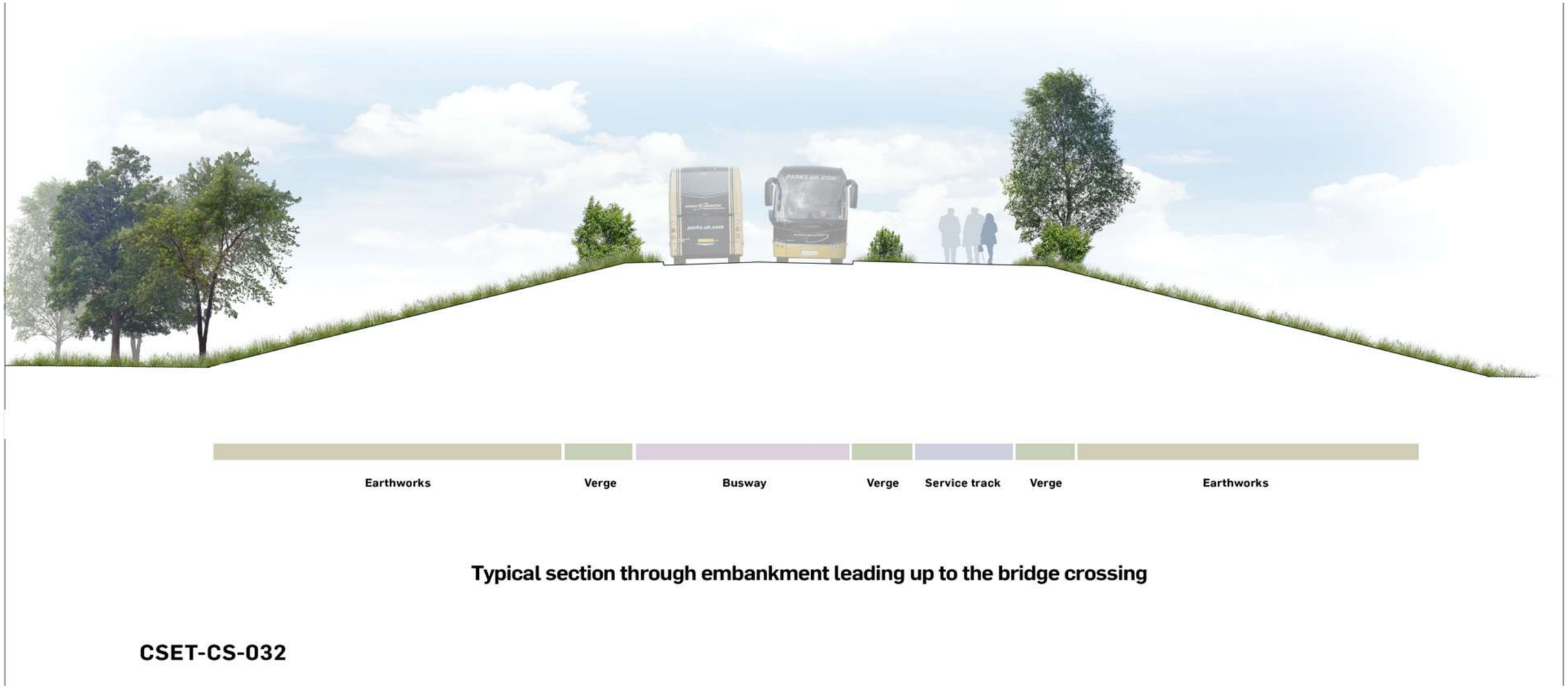


Figure 32: Typical section through embankment leading up to the bridge crossing

(planting shown at year 15)



Prepared by Atkins

River Granta (Stapleford) crossing – parameter information:

Width: 14.4m
Height of top of deck above ground level: 5.1m
Height of equestrian guard rails: 1.8m
Height of pedestrian guard rails: 1.1m
Approach embankment slopes: 1:4 gradient

Figure 33: Verified photomontage illustrating the River Granta (Stapleford) crossing (baseline) Field of view 53.5 degrees x 18 degrees



Figure 34: Verified photomontage illustrating the River Granta (Stapleford) crossing (year 1) Field of view 53.5 degrees x 18 degrees



Figure 35: Verified photomontage illustrating the River Granta (Stapleford) crossing (year 15)

Field of view 53.5 degrees x 18 degrees



7f) Sawston stop and Sawston Road crossing

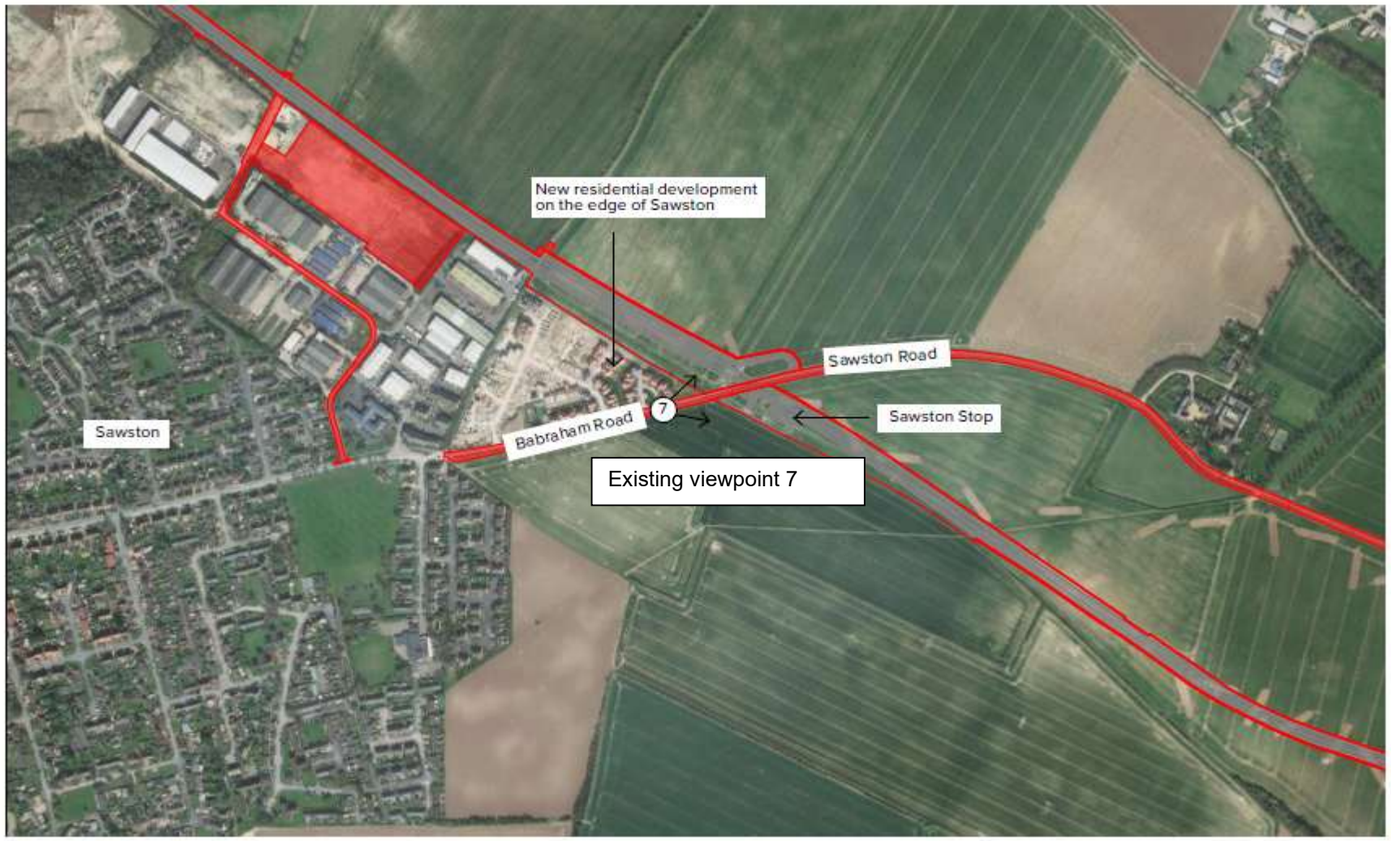


Figure 36: Sawston stop and Sawston crossing layout

Local landscape character and setting

The location of the Sawston stop is on Babraham Road, on the outskirts of Sawston. The land is low-lying and surrounded by open, arable farmland with intermittent hedgerows to the north, south and east. The urban edge of Sawston is clearly visible from the countryside. The new Hawthorns residential development on the northern side of Babraham Road is particularly prominent and is brightly lit at night. Tranquillity is reduced during the day by road traffic.

Figure 37: Representative viewpoint 7: Looking east on Babraham Road



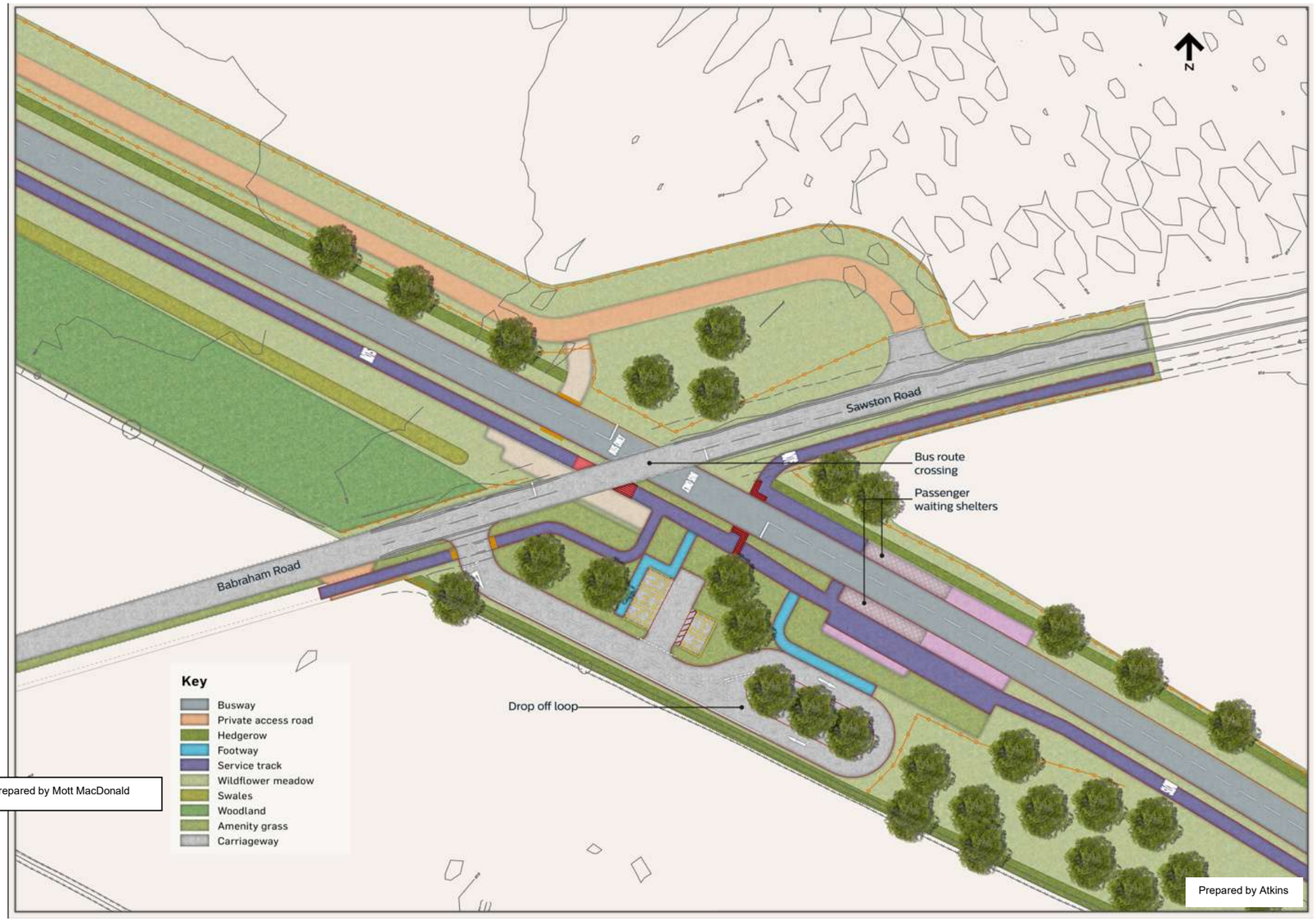


Figure 38: Busway route and junction layout plan

Design of bus stop

The busway stop will comprise PTR platforms, waiting shelters, seating, covered cycle parking, blue-badge parking, a drop-off and pick-up area, CCTV and lighting. The shelter, seating, cycle parking, signage and lighting will be selected to have a minimum visual impact on their rural setting.

The busway route will cross Sawston Road via a signalised crossing.

Landscape design

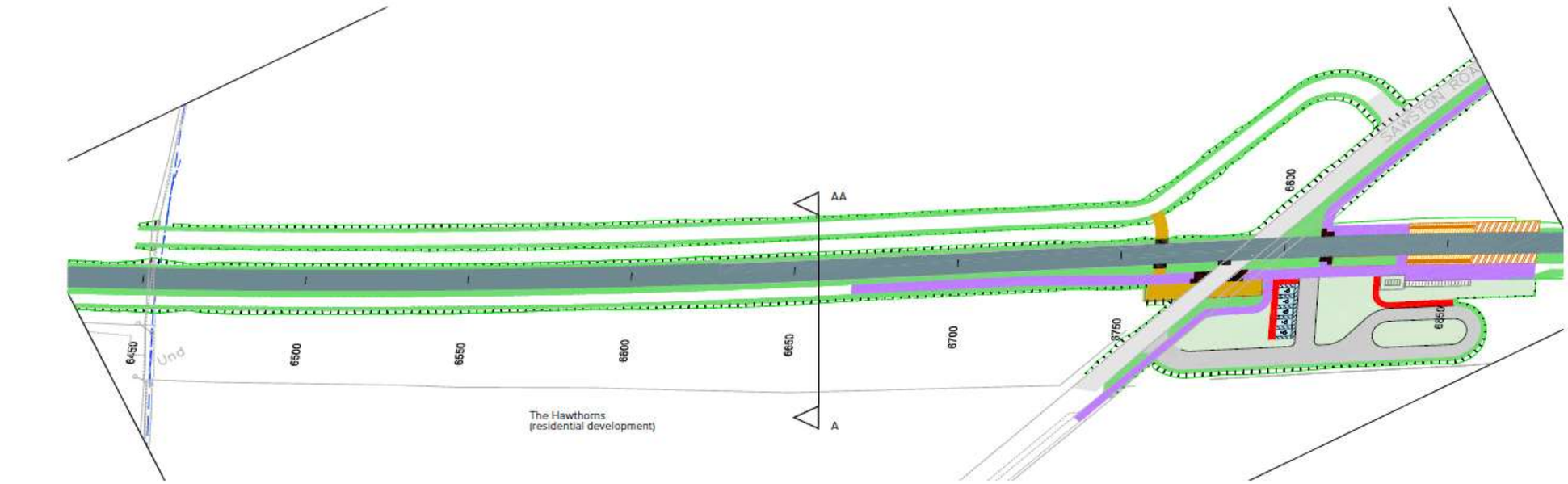
Tree-lined hedgerows around the Sawston stop will partially screen views of the stop from The Hawthorns, but the busway vehicles, street lighting and shelters will remain visible above the hedgerows. A woodland belt along the north-eastern boundary of the houses will screen the busway vehicles and the noise fencing in ground-level views to the north-east. The fencing design has been balanced with safety and security issues. Detailed design development will consider the selection of materials and based on DMRB and MCHW standards.

The tree-lined hedgerow along the south-western side of the busway route will screen the route and the ATP from residential properties south of Babraham Road but busway vehicles will remain visible in filtered and oblique views. The hedgerows planted as mitigation will become integrated into the existing pattern of hedgerows in the view.

Design parameters

- Covered ground level cycle stands for 40 cycles
- Blue badge parking for 5 cars
- Car drop-off and pick-up zone
- Waiting area with shelter, CCTV, lighting and real-time information on the bus service
- Street lighting at the crossing and stops: 6m high columns
- Timber noise barrier: 2m high, approximately 300m long

Figure 39: Section from engineering drawings



Prepared by Mott MacDonald

Figure 40: Typical section showing the proposed busway, proposed woodland, noise barrier and the Hawthorns (new residential development)

(planting shown at year 15)



Prepared by Atkins

Figure 41: Verified photomontage illustrating the Sawston stop, view from Sawston Road (baseline)

Field of view 90 degrees x 27 degrees



Figure 42: Verified photomontage illustrating the Sawston stop, view from Sawston Road year 1)



Figure 43: Verified photomontage illustrating the Sawston stop, view from Sawston Road (year 15)

Field of view 90 degrees x 27 degrees



7g) River Granta (Babraham) crossing



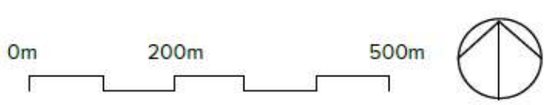


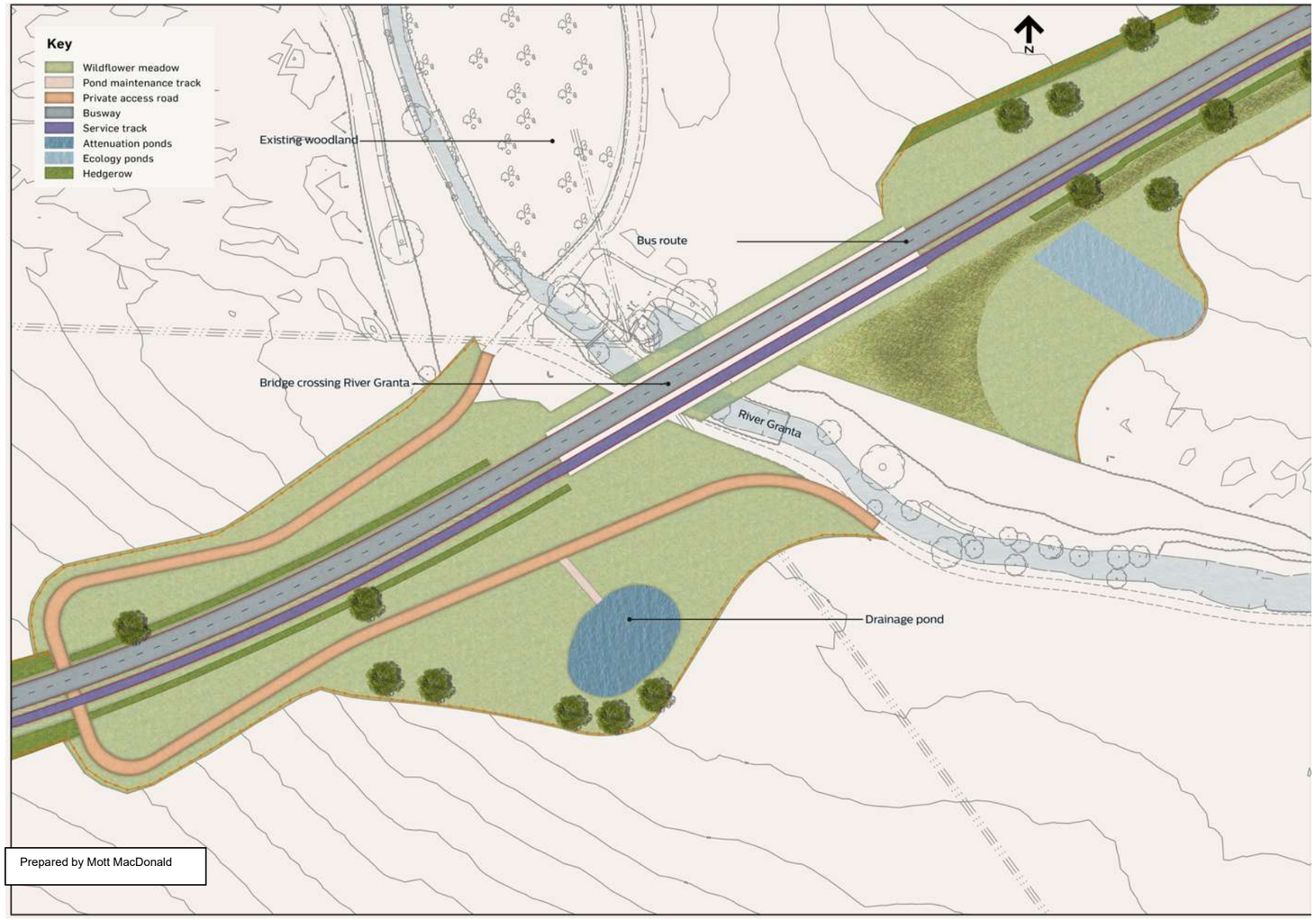
Figure 44: River Granta crossing

Local landscape character and setting

The landscape between High Street Babraham and the A11 has the low-lying, gentle topography typical of river valleys. The tree-lined river and the arable fields, pastures and water meadows on the fertile soils of the valley are characteristic of the area. The location of the crossing over the River Granta, a County Wildlife Site along this stretch, is between two belts of deciduous woodland. The majority of the village of Babraham nearby is a conservation area. The area is dark at night but skyglow above Cambridge and Fourwentways roundabout is evident at night. Noise and activity generated by traffic on the A1307 and A11 detract from the otherwise rural character of the area and tranquillity.

Figure 45: Representative viewpoint 8: Looking east on Babraham Road





Design of bridge structure

The bridge spans the River Granta and the flood zone of the river. The bridge abutments will be outside the flood zone boundary to minimise the impact on the containment capacity of the flood zone. The bridge will be a five span steel and concrete composite viaduct structure, comprising two 34.0m long main spans with two end spans 27.5m long to give an overall length of 130.0m. The ends of the bridge will be supported on piled reinforced concrete abutments with in-line wingwalls parallel to the alignment of the bridge. The bridge will be supported on four sets of intermediate piers, each comprising two columns at each pier on bored piles with a pile cap. The columns will support the bridge deck at each pier location by means of a steel diaphragm between the beams.

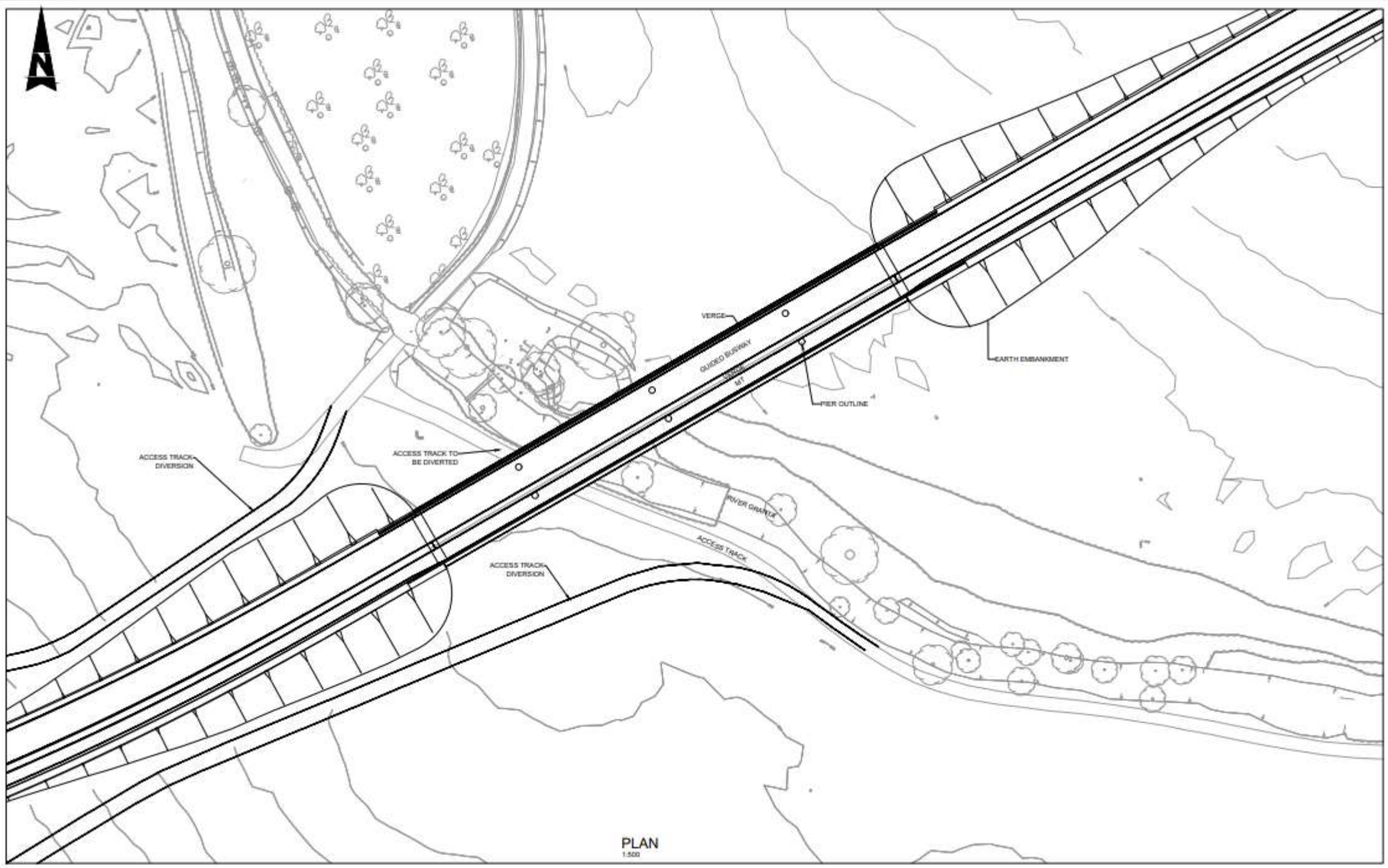
The proposed bridge beams will be fabricated from weathering steel which has an oxidised surfaced appearance. Piers are positioned to avoid any impact on the River Granta watercourse. The earth approach embankments to the bridge will be landscaped and profiled in order to seek to minimise the visible exposed concrete.

Landscape design and Biodiversity Net Gain

Hedgerows and trees along the northern side of the busway route will change the pattern of the landscape in the view by dividing the large open field the foreground into two. The hedgerow will also screen the busway route from the road but moving vehicles will remain visible above the vegetation.

Figure 46: Busway route and layout

Figure 47: Section from engineering drawings – Structure 8 Babraham Viaduct



Prepared by Atkins

Figure 48: Section showing the Babraham bridge crossing in the context of the landscape design

(planting shown at year 15)

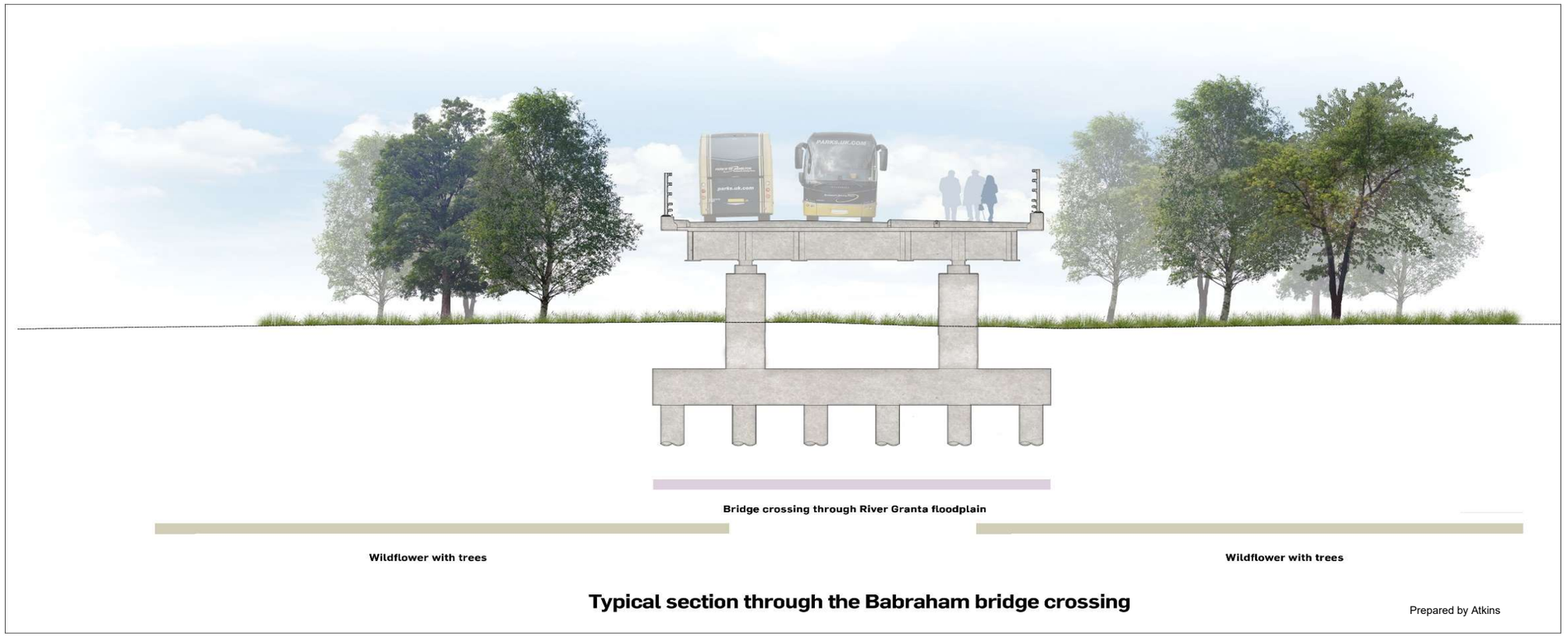


Figure 49: Verified photomontage illustrating the River Granta (Babraham) crossing (baseline)

Field of view 53.5 degrees x 18 degrees



Figure 50: Verified photomontage illustrating the River Granta (Babraham) crossing (year 1)

Field of view 53.5 degrees x 18 degrees



Figure 51: Verified photomontage illustrating the River Granta (Babraham) crossing (year 15)



River Granta (Babraham) crossing - parameter information

Width: 14.4m
Height of top of deck above ground level: 5.1m
Height of equestrian guard rails: 1.8m
Height of pedestrian guard rails: 1.1m
Approach embankment slopes: 1:4 gradient

7h) The A11 Travel Hub

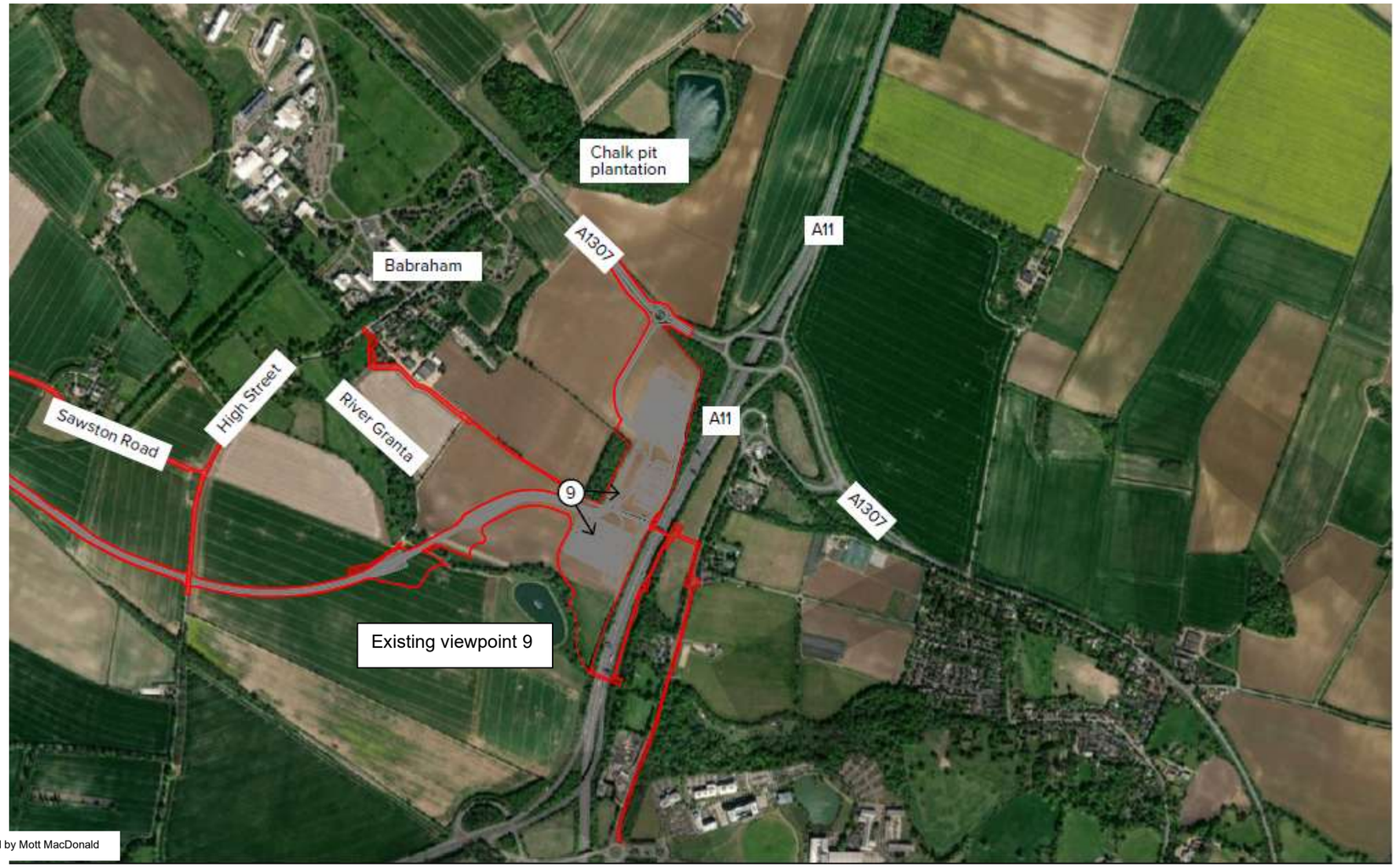


Figure 52: A11 Travel Hub Location Plan

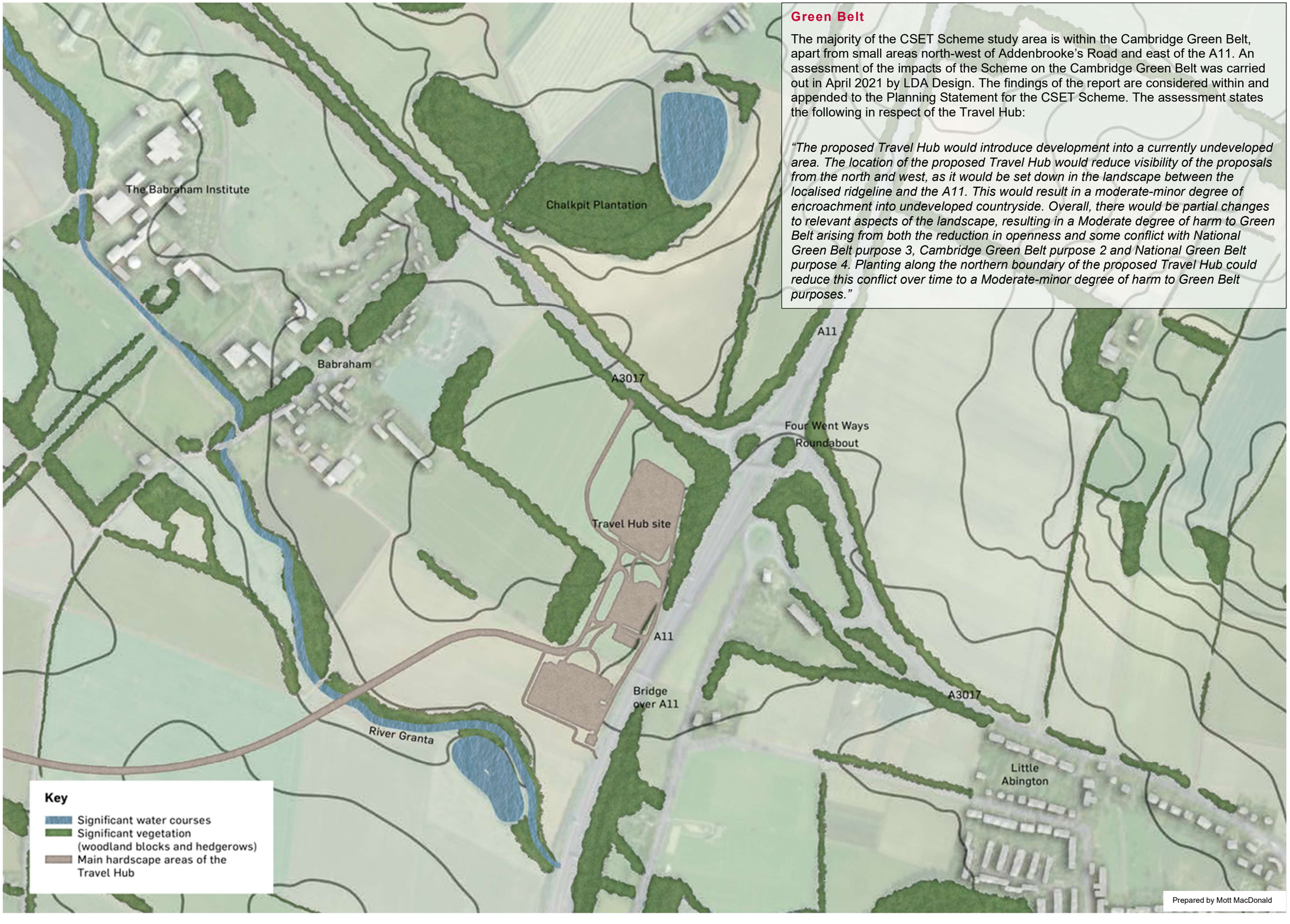
Local landscape character and setting

The location of the Travel Hub is on land between Babraham and the A11, on arable farmland that slopes gently down to the tree-lined River Granta. The site is partially screened from the village by the Two Acre Plantation and from the A11 and A1307 by vegetation bordering the roads. The farmland is relatively open, but the character of the landscape becomes more wooded to the north and east. The area is dark at night but skyglow above Cambridge and Fourwentways roundabout is evident at night. Noise and activity generated by traffic on the A1307 and A11 detract from the otherwise rural character of the area and tranquillity.

Figure 53: Representative viewpoint 9: Looking south-east from footpath 12/4



Figure 54: Topographic context of the Travel Hub



Green Belt

The majority of the CSET Scheme study area is within the Cambridge Green Belt, apart from small areas north-west of Addenbrooke's Road and east of the A11. An assessment of the impacts of the Scheme on the Cambridge Green Belt was carried out in April 2021 by LDA Design. The findings of the report are considered within and appended to the Planning Statement for the CSET Scheme. The assessment states the following in respect of the Travel Hub:

"The proposed Travel Hub would introduce development into a currently undeveloped area. The location of the proposed Travel Hub would reduce visibility of the proposals from the north and west, as it would be set down in the landscape between the localised ridgeline and the A11. This would result in a moderate-minor degree of encroachment into undeveloped countryside. Overall, there would be partial changes to relevant aspects of the landscape, resulting in a Moderate degree of harm to Green Belt arising from both the reduction in openness and some conflict with National Green Belt purpose 3, Cambridge Green Belt purpose 2 and National Green Belt purpose 4. Planting along the northern boundary of the proposed Travel Hub could reduce this conflict over time to a Moderate-minor degree of harm to Green Belt purposes."



Figure 55: Car Park Layout Plan

Design constraints

The layout of the Travel Hub is defined by the site constraints comprising the A1307 to the north, a woodland belt and the A11 to the east and north-east, the River Granta and associated flood plain to the south and a high pressure gas main (and associated 50m easement above) and Two Acre Wood to the west. Other constraints to the design include the existing PRoW and mature trees adjacent to the PRoW.

Layout principles

The A11 Travel Hub comprises approximately 1250 parking bays. It has been designed to minimise interaction between busway vehicles and other users, so Busway vehicles leave and enter the Travel Hub via the busway route, whereas all other traffic uses the aisle and access roads to move around the car park.

There are separate tree-lined pedestrian routes through the Travel Hub between the parking areas and the waiting area. A PRoW linking Babraham and Great Abington, via a footbridge over the A11, passes through the site. New ramps, accessible to all users, will be added to both sides of the existing A11 footbridge to improve the accessibility of the bridge for all non-motorised users through CSET1. There will be access to the ATP and existing underpass under the A11 from the unloading area via a dedicated track.

The objective is to create a legible, welcoming environment with a clear movement hierarchy. Whilst the details of this will be conditioned, the movement hierarchy provides a strategy for each transport mode. For example, cycle parking is prioritised and accommodated as close as possible to interchange points. Clear, safe routes in and out of the Travel Hub for people with bikes will be provided. CCTV and natural surveillance will assist with security for cycle parking.

Pedestrian access is important for access to the wider local area and for nearby residents and workers to benefit from the travel hub facilities. Pedestrians will be able to easily navigate available onward modes. Pedestrian routes will be clear and direct with paths catering to desire lines and provision of wayfinding.

The Travel Hub design will integrate landscape, lighting, and sustainable drainage into a coherent design identity. The building's position within the Travel Hub and location in the Green Belt has been given consideration. Its alignment with the A11 reduces the visual impact to mitigate the loss of Green Belt openness. The building's scale is appropriate for the size and function of the hub. The space will be an appropriate size to allow significant numbers of people to wait for services, with lighting, shelter and shade even when the building might not be open. The space will be of a scale to provide flexibility in the uses to be accommodated, with the potential for provision of a café, commercial cycle repair or cycle hire shop. The materials are likely to be lightweight or modular construction to provide adaptability and removal or redesign at relatively low cost.

Design parameters

- Total number of parking spaces: 1250 bays (including 150 covered solar panels in northern car park)
- Coach parking: 10 coach bays
- Blue badge holder parking: 63 bays
- Drop of parking: 29 bays
- Motorcycle parking
- 70 Secure cycle lockers
- 50 cycle stands
- 80 two tier cycle racks

- In the northern car park, 5% of the bays will have electrical charging facilities and 198 bays will be covered by solar panels
- A small building in the central area will provide a covered waiting area for passengers, toilets, and maintenance facilities
- High-quality passenger facilities (shelters, seating, real-time information)
- CCTV and real-time information on the bus service
- Lighting: 6m columns in the car park, 8m columns on the access road and 10m columns on the new A11 roundabout

Central Car Park

Landscape Design

- Hedgerows with trees throughout the car parking areas will break up the extent of hard surfacing in views and partially screen the parked cars.
- Pedestrians will be guided along hedgerow-lined traffic-free routes between the bus waiting area and the car parking areas, via designated crossing points.
- The locations of trees have been planned to avoid conflicts with the lighting scheme to maintain a safe environment at night.
- Trees and woodland in the bus waiting area will screen the bus drivers' rest area and reinforce the woodland character of the Travel Hub.
- A woodland belt along the eastern boundary of the Travel Hub will increase the depth of the existing woodland between the Travel Hub and the A11.
- A woodland belt along the western and northern sides of the northern parking area will help screen the parking area from Babraham and the A1307. It will gradually merge with the existing planting around the Fourwentways roundabout.

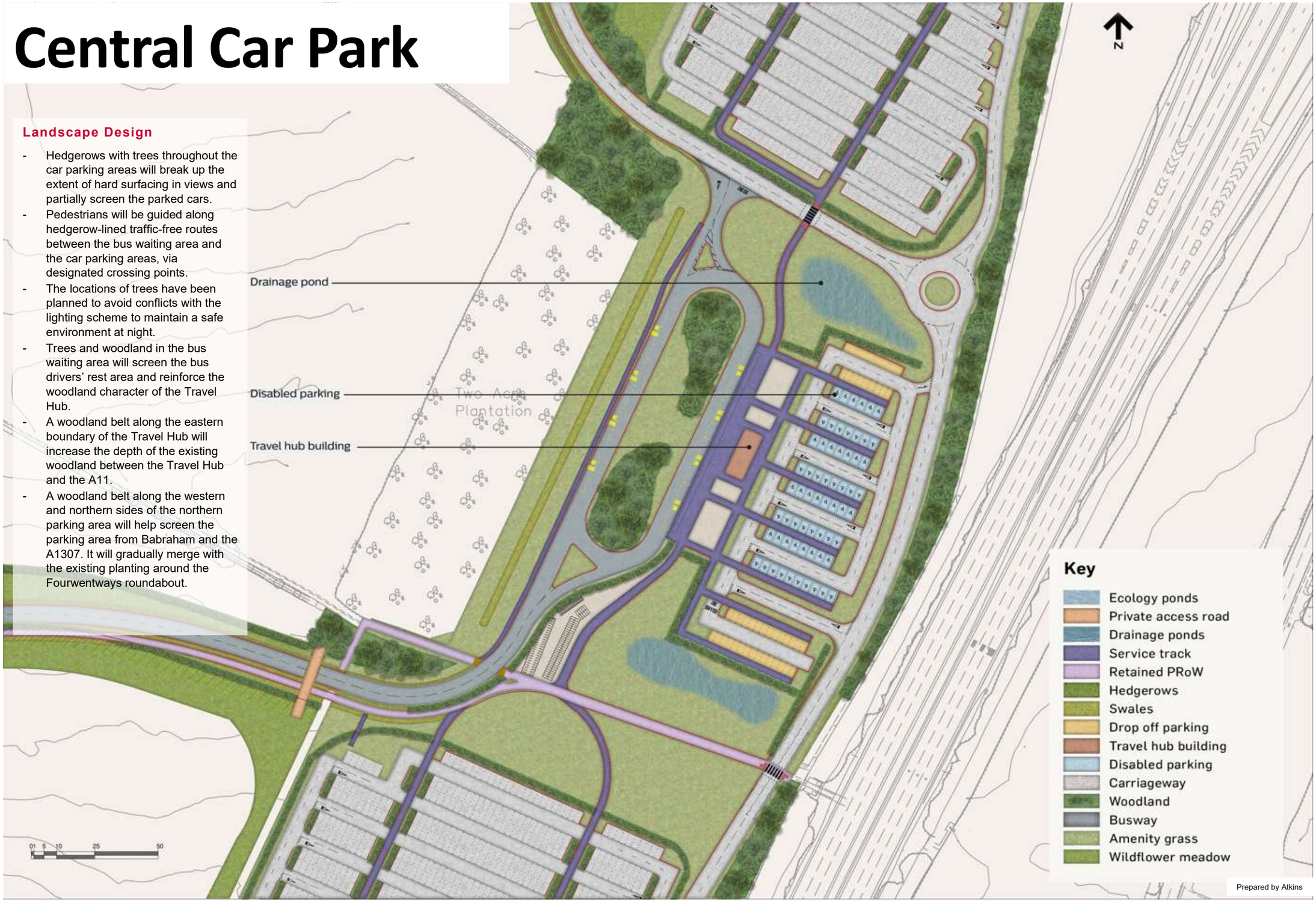


Figure 56: Central Park Car

Northern Car Park

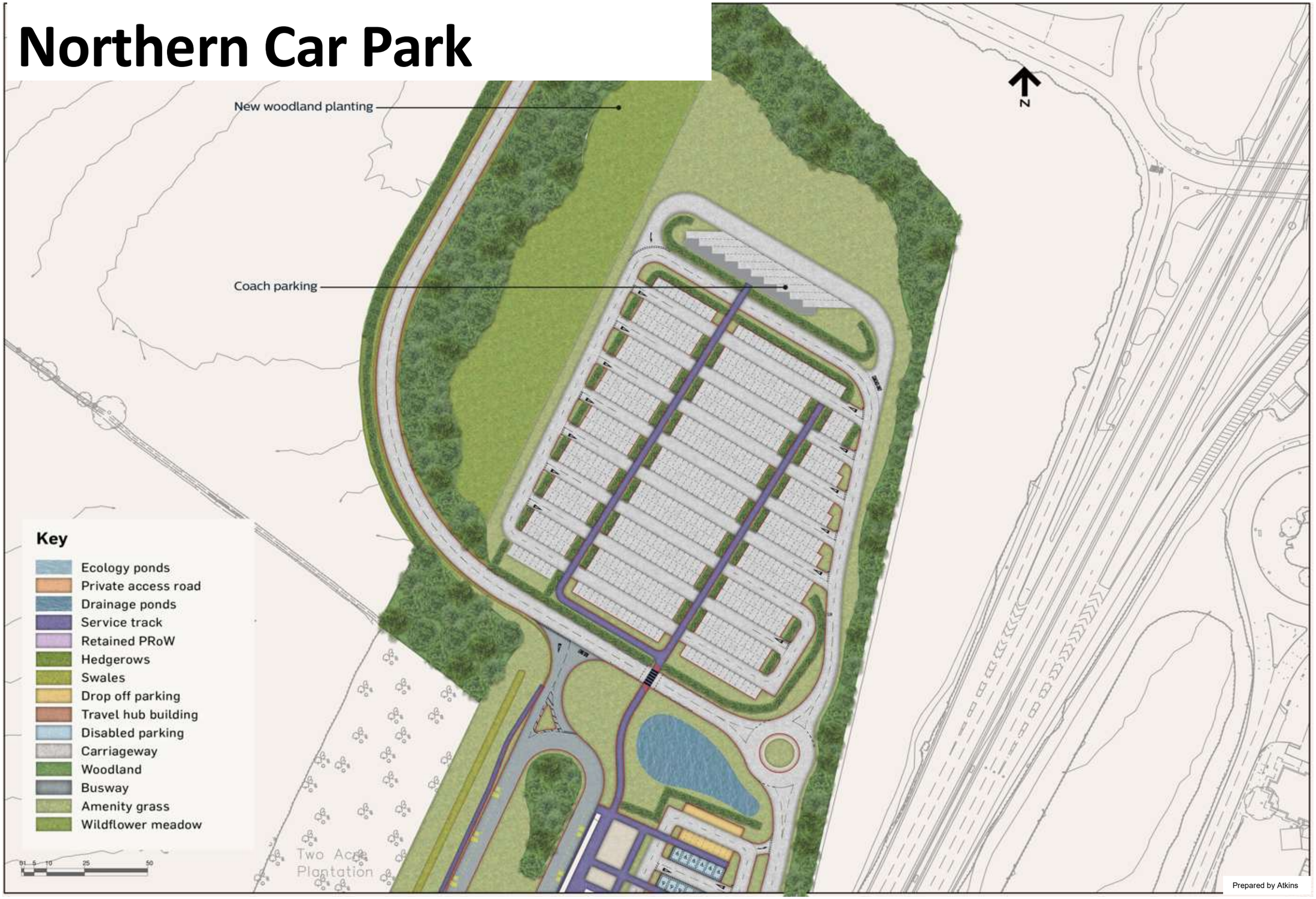


Figure 57: Northern Car Park



Figure 58: Southern Car Park

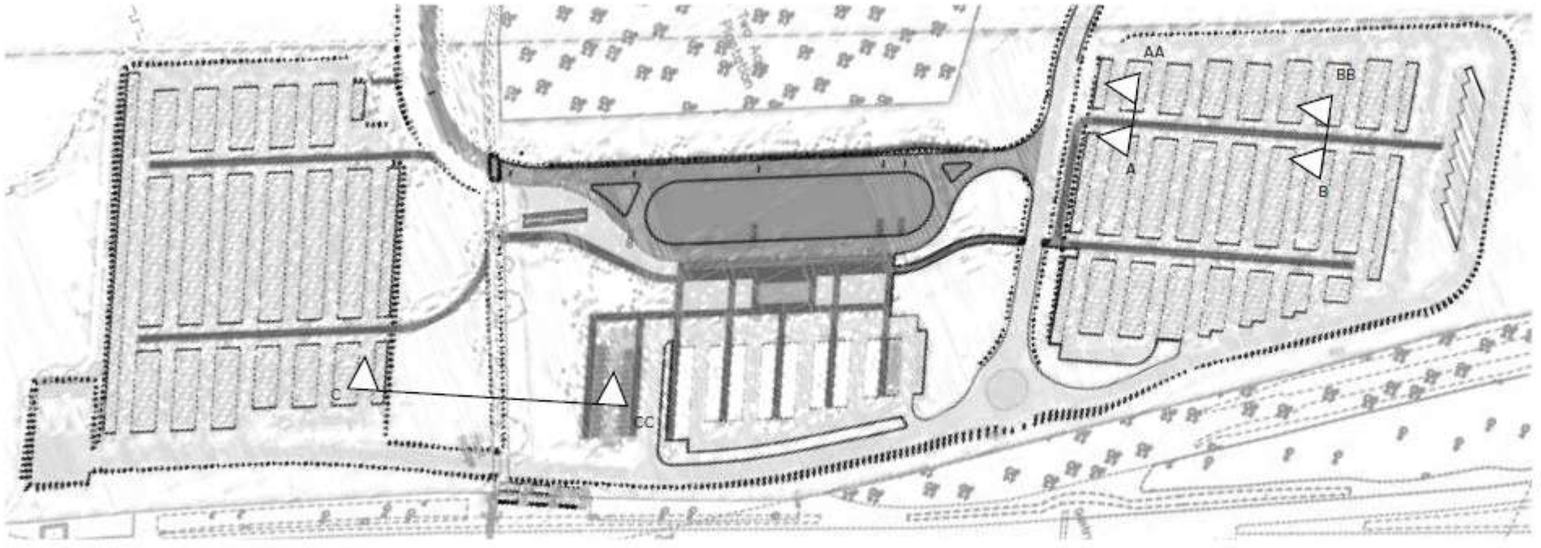
Figure 59: Verified photomontage illustrating the travel hub from Footpath 12/4 (year 1)

Field of view 90 degrees x 27 degrees



Prepared by Mott MacDonald

Figure 60: Embankments as shown on engineering drawings



The surface of the car park will be kept as close to existing ground levels as possible to reduce the need for slopes and retaining walls. In a few places, mainly along the eastern boundary with the A11, there will be shallow slopes at 1:4 gradient where the car park is a maximum of 1m above existing ground levels. However there is space in the Travel Hub arrangement for shallower gradients and generally the changes in level will be not be noticeable.

Prepared by Mott MacDonald

Figure 61: Section showing parking, solar panels, and pedestrian route through the car parking area

(planting shown at year 15)

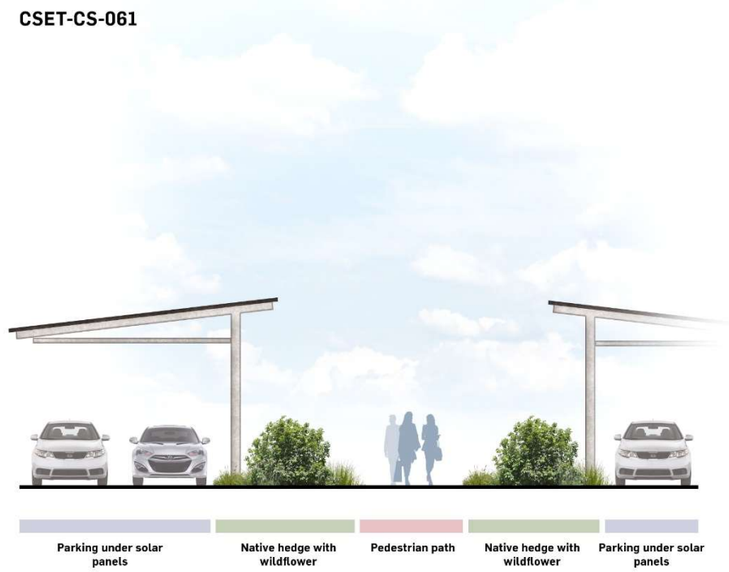


Figure 62: Section showing the area between the southern parking area and the central car parking area

(planting shown at year 15)

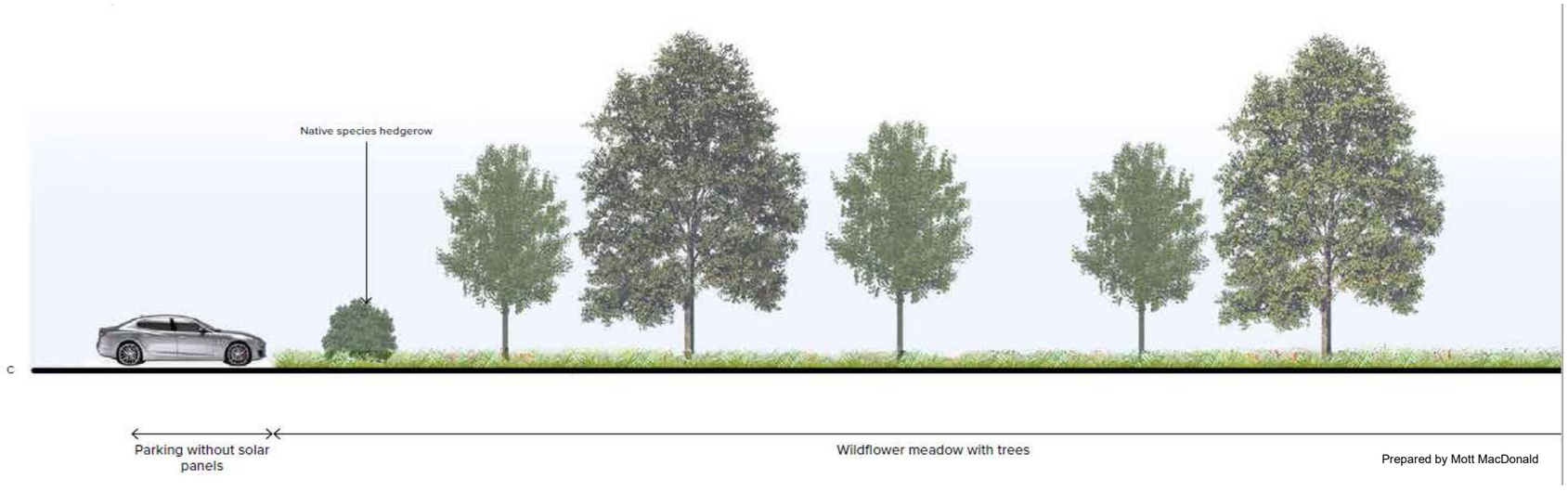


Figure 63: Section showing planting and pedestrian route through parking area

(Planting shown at year 15)

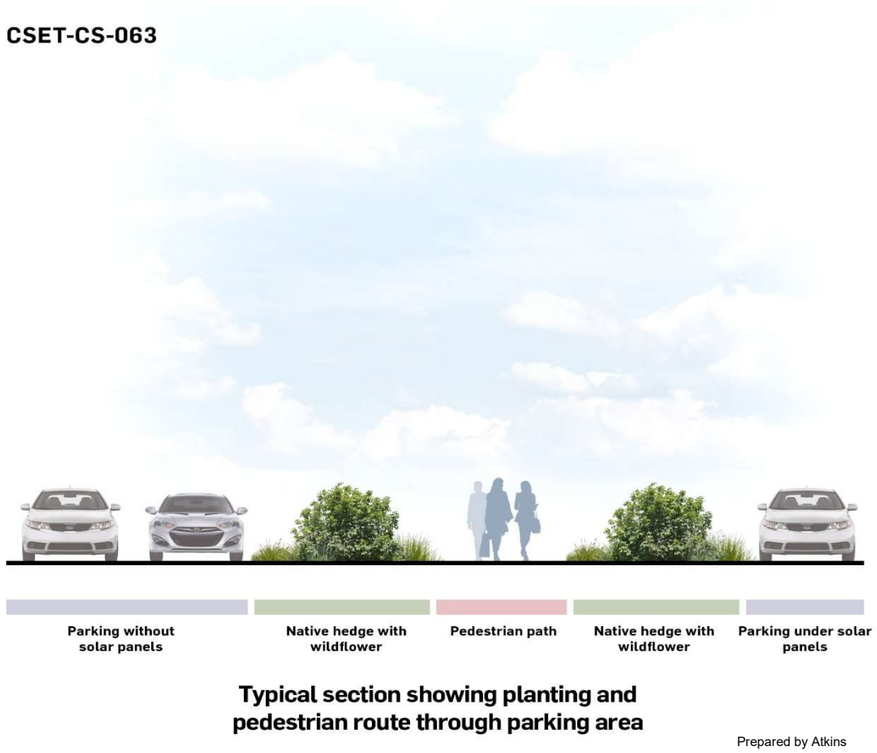
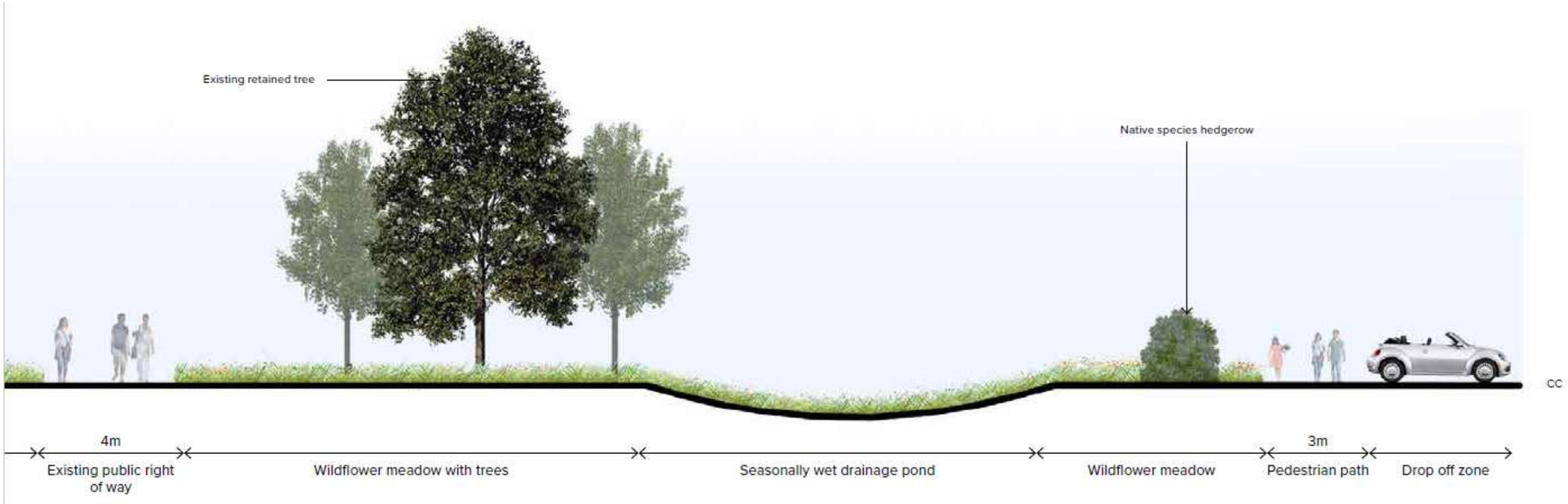


Figure 64: Section showing the relationship between the drop off zone, swale and existing PROW in central car park



Appendix 1 – Design Principles

Overarching Design Principles to be applied to the Proposed Development

The project objectives are set out in the Strategic Outline Business Case (CSET-20-00):

- Objective 1: Support the continued growth of Cambridge and south Cambridge's economy.
- Objective 2: Relieve congestion and improve air quality in south east Cambridge.
- Objective 3: Improve active travel infrastructure and public transport provision in south east Cambridge.
- Objective 4: Improve road safety for all users of the A1307 corridor.
- Objective 5: Improve connectivity to employment sites in south east Cambridge and central Cambridge

The Design Principles provide the framework for a contextual design approach which seeks to maximise the overall benefit provided by the Proposed Development and demonstrate compatibility with relevant Local Plan policies and guidance in design terms.

Design Principles:

1. A design that will be a multi-functional asset within the existing landscape context. Alongside functional new infrastructure, the corridor will be designed to maximise a sense of place, local character, biodiversity, sustainable water resources, and health and well-being
2. A design that seeks to create an attractive, high quality, accessible, inclusive and safe environment for different users;
3. A design that seeks to minimise impacts on the Green Belt and responds to the changing landscape context along to route;
4. A design which seeks to respect key views nearby;
5. A design which seeks to integrate into the landscape through the siting, form and materials of structures and landscaping;
6. A design which seeks to connect into the existing wider transport infrastructure network;
7. A design that provides access to and creates new/enhanced Green Infrastructure to support healthy living and well-being;
8. A design that creates new Blue Infrastructure that will mitigate flood impacts, adapt to climate change, and enhance biodiversity and landscape elements of the design;
9. A design that delivers a minimum of 10% biodiversity net gain (BNG) with a target to contribute to the 20% target across all GCP projects.
10. A design which seeks opportunities to increase hedgerow and woodland connectivity through additional planting to link existing or proposed open spaces, hedgerows and ecological corridors;
11. A sustainable design that meets the challenges of climate change including mitigation through carbon reduction, water management, site waste management, the sustainable use of materials, renewable energy generation and electric-vehicle charging;
12. A design which considers adaptation to climate change including through landscaping and planting, sustainable drainage, design and materials, the local micro-climate and environmental comfort for different users;
13. A design that is safe by design, notably in relation to natural surveillance, lighting, CCTV, clear signage and landscaping, and which complies with Secured by Design principles;
14. A people focussed design that considers how different users would move through and around the route and spaces, including managing potential conflicts; and
15. An inclusive design so that all users can use the scheme safely, easily and with dignity, and which complies with British Standard BS 8300 for designing accessible and inclusive environments;
16. A design which anticipates the need for flexibility to adapt the scheme to meet future needs;
17. A design which recognises the local importance of Nine Wells, Hobson's Brook and the River Granta, and the need to mitigate the impacts of construction and operation and seek enhancement to encourage biodiversity;
18. A highly legible scheme which provides a clear, consistent and coherent wayfinding along the route of the scheme for different users, and integrates into the existing wider transport network;
19. A design which has a coordinated palette of materials encompassing both hard and soft landscaping, structures and street furniture to establish a clear and coherent identity for the scheme; and
20. A scheme which provides high-quality cycle parking and associated facilities at the Travel Hub and bus stops which considers the needs of different users.