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Member of the SNC-Lavalin Group

New Town North of Waterbeach to North East Cambridge Public Transport Study

Option Appraisal Report

Greater Cambridge Partnership

19 August 2020

Notice

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This document has 83 pages including the cover.

Document history

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Client signoff

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1. Introduction

1.1. About the Study

Atkins has been commissioned by the Greater Cambridge Partnership (GCP) to undertake a study to explore the options to deliver the most effective public transport connections between the proposed New Town north of Waterbeach and North East Cambridge.

The aim of this study is to identify interventions in the corridor that contribute to local policy objectives to accommodate employment and residential growth without increasing motor traffic levels in Cambridge and the study area. In particular, the study seeks to identify a preferred transit corridor to integrate with the emerging Cambridge Autonomous Metro (CAM) proposals and to enhance walking and cycling infrastructure. The intention is to progress a Waterbeach to North East Cambridge Public Transport Scheme along this preferred corridor.

The study includes preparation of an Options Appraisal Report (OAR) (this document) which outlines the methodology of generating and assessing options for the route of this transport corridor.

1.1.1. Study Objectives

The study objectives set by GCP are as follows:

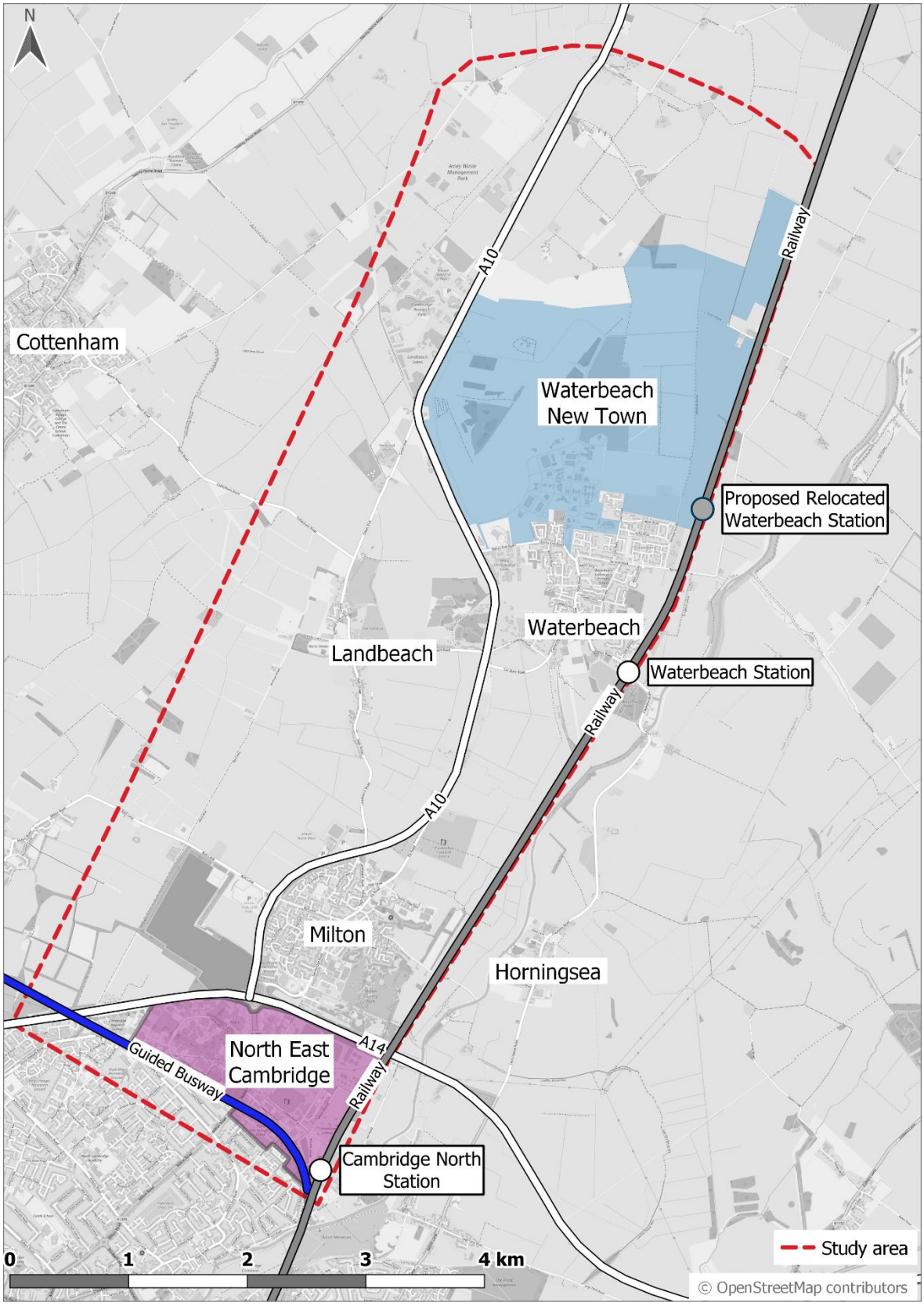
1. To identify a variety of deliverable options which will improve the reliability, safety, capacity and speed of sustainable transport connections between the proposed New Town north of Waterbeach and North East Cambridge. Measures should have the aim of reducing the number of vehicles driving into Cambridge and could include:
    - Segregated rapid transit options;
    - Bus priority measures;
    - Improvements to Park and Ride provision; and
    - Interchange capacity – between car, bus, rail, CAM, walking and cycling.
2. To identify measures that allow for the relocation of Waterbeach rail station as part of the proposals for the New Town north of Waterbeach; however, the relocation of the station itself does not form part of the study;
3. To ensure provision for walking and cycling is inherent in all proposals;
4. To generate options that support the reduction of traffic levels in Cambridge to 10%-15% below 2011 levels, which equates to a 24% reduction from 2018 traffic levels;
5. To generate sustainable options that address transport demand from the proposed New Town north of Waterbeach and enable development at North East Cambridge to proceed;
6. To generate options for ‘quick-wins’ to address or resolve known problems to be deliverable over a period of one to two years; and
7. To improve connectivity between existing settlements and to work with Cambridgeshire County Council (CCC), Cambridgeshire and Peterborough Combined Authority (CPCA) and other stakeholders to identify the best package of measures aimed at ensuring connectivity is in place at the opening of new developments, thereby reducing the propensity for trips to be made by private car.[1]

1.2. Study Area

The study area was determined by GCP and is shown in Figure 1-1. The study also takes account of schemes across a wider area where these could affect the selection of options for connections within the study area.

[1] Greater Cambridge Partnership (2019) *New Town North of Waterbeach To North East Cambridge Public Transport Study Specification. [Pages 6 and 7]*

Figure 1-1 - Study Area



1.3. Impacts of Covid-19

The Covid-19 pandemic has changed current travel behaviours, and as the UK comes out of lockdown some of these changes may continue into the future. Significant growth in the corridor is nevertheless still planned, which requires transport infrastructure to support increased travel. Therefore, there remains a need for a public transport solution that is accompanied by additional active travel infrastructure for the study area (see Chapter 2) in the longer term, irrespective of the short to medium term impacts of Covid-19 on travel demand.

Further technical development and assessment will continue to take account of the Covid-19 impacts, both as their eventual nature and scale become clearer, and by use of scenario testing to reflect any continuing uncertainties.

1.4. Structure of this Report

The remainder of this report is as follows:

- Chapter 2 describes the problems, challenges and need for intervention within the study area;
- Chapter 3 describes the future 'without scheme' case and potential scenarios;
- Chapter 4 describes the study objectives and intended outcomes;
- Chapter 5 describes the stakeholder engagement strategy;
- Chapter 6 describes commentary the option generation, sifting and assessment process;
- Chapter 7 identifies potential quick wins and complementary schemes; and
- Chapter 8 provides conclusions and recommendations.

This report shows the process leading to the recommendation on corridor options for further engagement with stakeholders and the public. That engagement, as anticipated in Chapter 5, subsequently took place in early and mid 2020. This report does not show the results of that engagement, which will be reported separately. However, Chapters 2 and 3 have been updated to reflect the main changes in the factual and policy context that have occurred in parallel with the engagement process.

2. Problems, Challenges and Need for Intervention

2.1. Introduction

This chapter outlines the existing and potential future transport issues and outlines the need for intervention within the study area, drawing on an evidence base consisting of previous studies and policy documents.

2.2. Existing Transport Networks

2.2.1. Local Highway Network

The local highway network includes the A10, which is the main highway connection between Waterbeach, the A14 and North East Cambridge. This route currently experiences considerable congestion during peak periods, particularly around Milton Interchange where the A10 and A14 converge.

The 2018 CCC Traffic Monitoring Report[2] reports a two-way traffic flow of 27,046 vehicles on Milton Road to the south of the A14 across a 12-hour period.

2.2.2. Local Bus Network

The main routes in the local bus network include:

- Stagecoach Citi 2, which during peak hours travels between Ely and Cambridge Biomedical Campus via Cambridge Research Park, Waterbeach, Cambridge Science Park and Cambridge City Centre.
- Stagecoach route 9, which travels between Ely and Cambridge City Centre, serving Cambridge Research Park, Waterbeach, Milton and Cambridge Science Park.
- The Milton Park and Ride service, which travels from Milton Park and Ride west of the A10 approximately 4km south of Waterbeach. The service operates with a 10 to 20-minute frequency and stops at Cambridge Science Park en route to Cambridge City Centre and at the Grafton Centre on the way back to Milton Park and Ride. After 18:30 any stop along the route can be requested, which includes local stops along Milton Road.

There is currently no bus priority infrastructure on the A10 to the north of the A14, although there are existing bus lanes on Milton Road. There are proposals to improve bus priority on Milton Road to the south of the study area as part of the GCP Milton Road project.

The Cambridgeshire Guided Busway (CGB) runs between St Ives and Cambridge North Station. It is currently used by busway services A, B and D which collectively serve Cambridge Science Park, Cambridge Business Park and Cambridge Regional College[3].

2.2.3. Local Rail Network

Cambridge North and Waterbeach railway stations are located within the study area and provide connections to the wider UK rail network including London, Cambridge, Ely, Peterborough, Kings Lynn and Norwich. As part of the proposals for the New Town north of Waterbeach, the existing Waterbeach railway station is planned to be relocated further north to a site within the New Town. The full planning application[4] for the new railway station was approved on 9th January 2020.

[2] Traffic Monitoring Report 2018, Cambridgeshire County Council, https://www.cambridgeshire.gov.uk/asset-library/imported-assets/Traffic%20Monitoring%20Report%202018.pdf
[3] Source: https://www.thebusway.info/routes-times.shtml and https://www.thebusway.info/pdfs/tt/ABDR.pdf. Correct at time of compilation.
[4] Planning application: S/0791/18/FL

2.3. Policy Background

A policy review has been conducted to understand the wider policy context and support for interventions within the study area. The policy documents that have been reviewed include:

- The South Cambridgeshire Local Plan (2018);
- The Cambridge Local Plan (2018);
- The Cambridgeshire and Peterborough draft Local Transport Plan (LTP) (2019);
- The Cambridgeshire and Peterborough Interim Local Transport Plan (ILTP) (2017);
- The Cambridgeshire LTP 2011-2031 (2015);
- The Cambridgeshire LTP 2011-2031: Long Term Transport Strategy (LTTS) (2015);
- The Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) (2014);
- The Waterbeach Supplementary Planning Document (SPD) (2019); and
- North East Cambridge Area Action Plan (NECAAP) (2020).

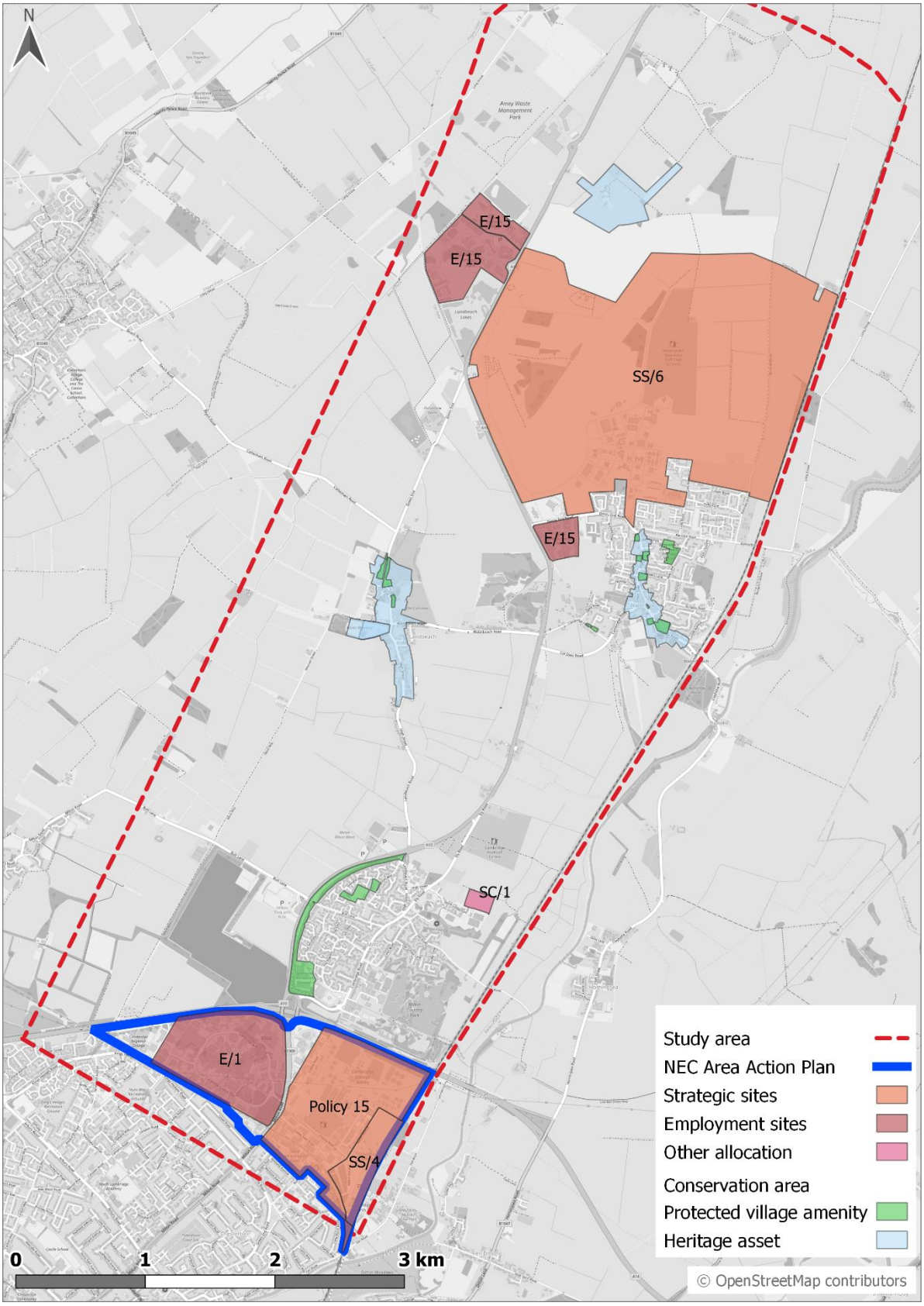
Appendix A summarises the relevant policies.

The first key policy area of these documents is the extensive proposed growth in the study area. The Cambridge and South Cambridgeshire Local Plans identify a need for 33,000 homes and 44,000 jobs by 2031 and the study area has been identified as a key area in which to contribute towards this growth. The locations of these allocations and policies are shown in Figure 2-1. Key sites include:

- New Town north of Waterbeach (up to 11,000 homes[5]), identified under Allocation SS/6; and
- NEC (up to 17,000 new homes and 14,000 new jobs), identified under Allocation SS/4, Policy 15 and Policy E/1.

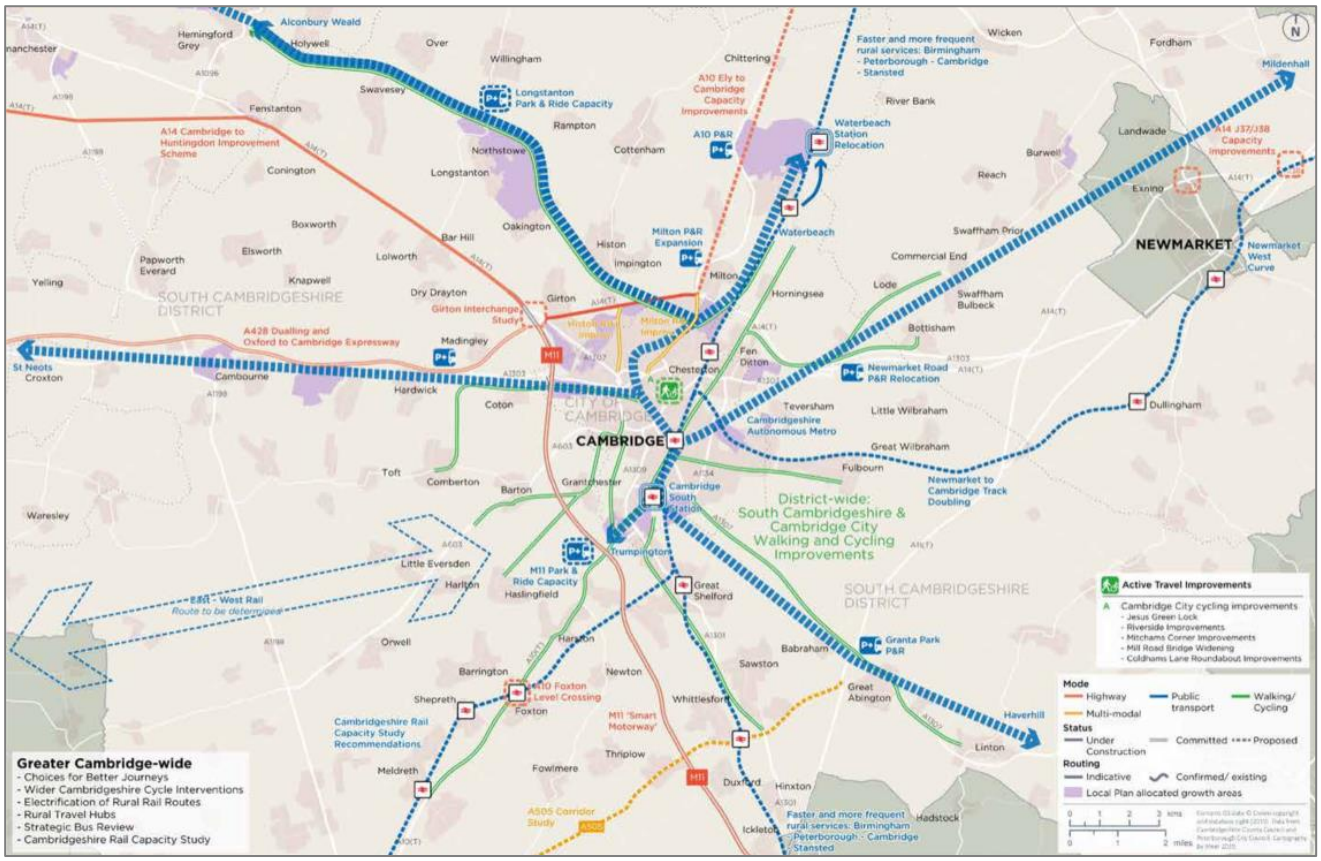
[5] Urban and Civic website: https://www.urbanandcivic.com/projects/strategic-sites/waterbeach-barracks/site-details and RLW estates website: http://www.waterbeach.co.uk/post.php?s=2018-06-05-planning-application-submitted-by-rlw-estates-for-up-to-4500-homes-at-waterbeach

Figure 2-1 - Location of Key Allocation/Policy Sites



The second key policy area is the need for sustainable transport to address existing congestion and connectivity issues in the study area, and to enable this growth to occur. The CPCA Draft LTP identifies that public transport, walking and cycling need to be enhanced to improve people's journeys into and around Greater Cambridge and reduce car dependency[6]. Figure 2-2 shows the key projects within Greater Cambridge from the CPCA Draft LTP that aim to overcome the challenges faced by the Cambridge region.

Figure 2-2 – Key Transport Projects in Greater Cambridge[7]



The public transport schemes represented in Figure 2-2 with the thick blue dashed line form the CAM network, one section of which will connect Waterbeach and Cambridge. A new Park and Ride on the A10 is also identified in the Draft LTP, as is an expansion at the existing Milton Park and Ride site.

2.4. Evidence Base

Several previous studies have examined the constraints and potential transport options in this corridor. The previous studies that have been referred to are:

- Bus Strategy – Bus Route Option Study (2009);
- A10 Transport Corridor Constraints Study (2012);
- Waterbeach Busway Options Study (2014);
- A10(N) Corridor Constraints Study (2016);
- Ely to Cambridge Transport Study – Preliminary Strategic Outline Business Case (2018); and

[6] Cambridgeshire and Peterborough Combined Authority (2019) *The Cambridgeshire and Peterborough Local Transport Plan* [Page 96]

[7] Cambridgeshire and Peterborough Combined Authority (2019) *The Cambridgeshire and Peterborough Local Transport Plan* [Page 97]

- Ely to Cambridge Transport Study: Strand 2 New Town North of Waterbeach Transport Report (2018).

Appendix B summarises these studies, including the evidence base they provide and their findings.

2.4.1. Existing Corridor Constraints

Existing constraints in the corridor have been identified through assessment of previous studies. When considering potential transport options, the following main constraints need to be taken into account:

- Engineering constraints, including:
  - Any type of crossing over the A14, e.g. north of Cambridge Science Park or Cambridge Northern Fringe East;
  - Potential to fit through pinch-points such as the area north of Cambridge Road, Waterbeach;
  - Potential to accommodate a transit route to the east of Waterbeach alongside the railway without encroaching directly on local properties and the proposed sport lakes development;
  - The buildability of a transit route over the landfill site west of Milton; and
  - Any type of interaction with Milton Interchange, given the existing capacity issues experienced at the junction during peak periods.
- Environmental constraints, including the area south of Waterbeach being designated as green belt.
- A masterplan for North East Cambridge (NEC) is being developed and any option traversing the area will need to be coordinated with potential development proposals and existing buildings and transport infrastructure.

2.5. Summary of Problems, Challenges and Need for Intervention

This chapter has identified the problems, challenges and need for intervention within the study area, which are summarised in the following sections.

2.5.1. Existing Problems

There are three key challenges in the study area:

- **Proposed and allocated growth in the study area**: Local policies (including Local Plans) have identified a need for an additional 33,000 homes and 44,000 jobs by 2031, which would exacerbate transport capacity issues that are currently experienced during peak periods. Whilst it is recognised that there is a need for growth, the existing transport network is unlikely to be able to accommodate this without new sustainable transport infrastructure;
- **Congestion on A10 north of the A14 from Milton Interchange**: Current congestion on the A10 around Milton village causes journey time and reliability issues. The evidence base suggests that this issue is likely to be exacerbated when additional development (such as the New Town north of Waterbeach) is completed; and
- **Constraints on the eastern side of the study area**: Several previous studies (outlined in section 2.4) noted that the eastern side of the study area adjacent to the railway line has a number of constraints. These include the location of existing dwellings and proposed developments.

2.5.2. Need for Intervention

There is a clear need for intervention within the study area to:

- **Accommodate additional growth**: Additional growth proposed in the area is likely to result in worsened highway capacity issues in the future. To mitigate this, public transport infrastructure could provide faster and more reliable journeys for key travel markets along the A10 corridor and in north east Cambridge;
- **Reduce dependency on private motor vehicles**: There is little in the way of frequent, reliable and fast public transport links between Waterbeach and Cambridge and therefore there is currently a

dependency on private motor vehicles to make these journeys. Interventions that increase north-south public transport links would reduce the dependency on private car for these trips; and

- **Supporting local policy and strategies**: Local plans and policies identify a need to reduce congestion and accommodate additional growth in the study area. The policies demonstrate that the Waterbeach to Cambridge corridor is a key economic growth area and should be supported by the appropriate level of infrastructure.

2.5.3. Corridor Opportunities

To overcome the existing issues within the study area, there are opportunities to:

- Provide sustainable infrastructure directly servicing new developments and key travel markets;
- Encourage mode shift from private car to sustainable modes;
- Improve journey times and reliability within the study area corridor by public transport; and
- Accommodate growing transport demand in a sustainable way (via increased public transport and walking and cycling links).

2.5.4. Corridor Constraints

The main constraints are:

- Engineering constraints, including crossing the A14, and pinch points in existing built up areas;
- Environmental constraints, including use of green belt land; and
- Development constraints in planned layouts of NEC and the New Town north of Waterbeach.

3. Future 'Without Scheme' Case and Potential Scenarios

3.1. Introduction

This chapter sets out the future 'without scheme' case (Do Minimum scenario), which includes committed development and future development locations. Information in this chapter has been provided by GCP and outlines major aspirational, proposed and committed developments and transport schemes that will interact with the study area and any potential scheme.

3.2. Committed and Planned Developments

The New Town north of Waterbeach and North East Cambridge are two major mixed-used development sites located within the study area which would increase transport demand once constructed. These developments are set out in sections 3.2.1 and 3.2.2.

3.2.1. New Town North of Waterbeach

A proposed New Town north of Waterbeach, with up to 11,000 additional homes, is being delivered by two developers: Urban and Civic and RLW Estates.

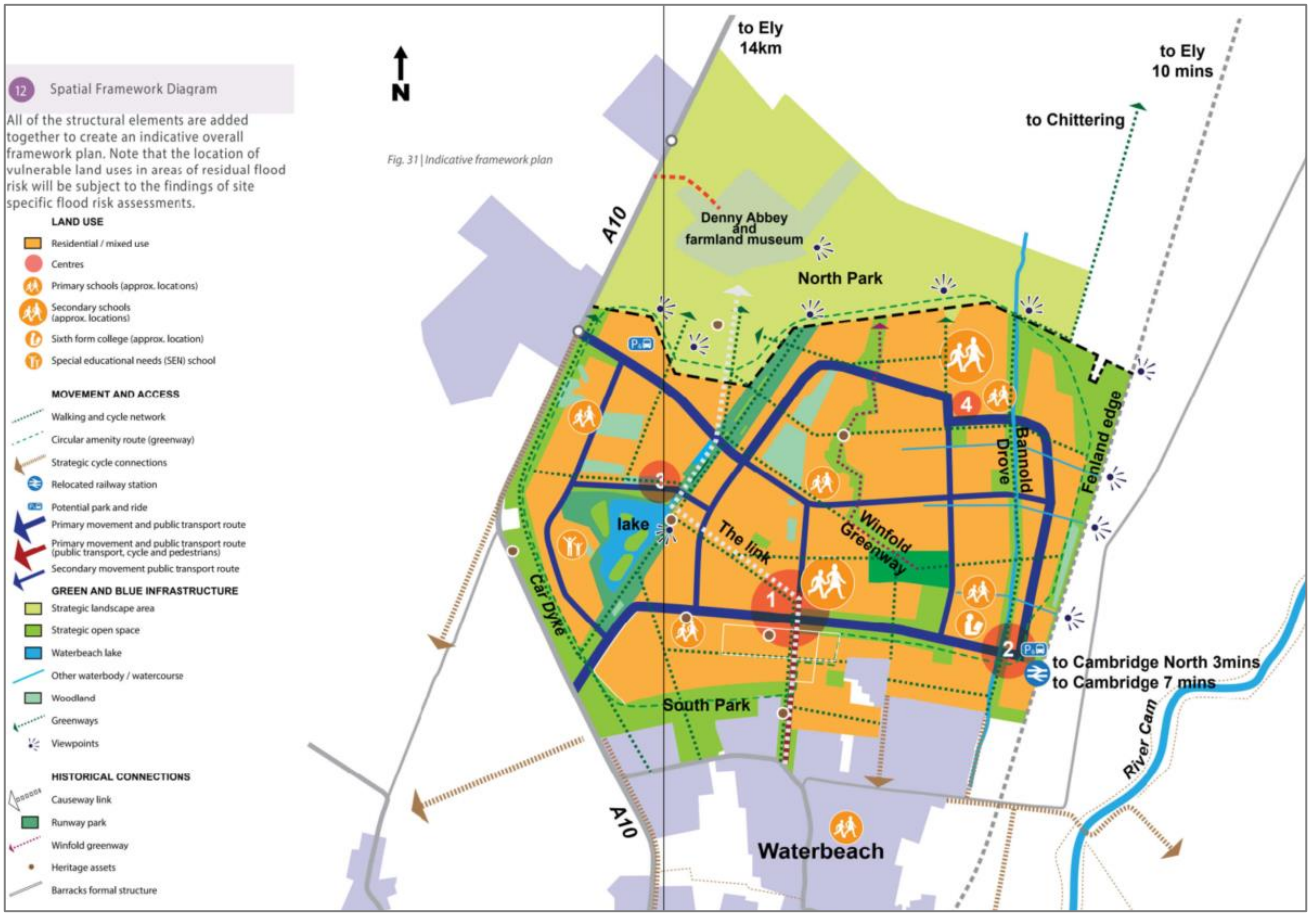
Outline planning permission has been granted for the Urban and Civic site, comprising up to 6,500 dwellings in addition to business, retail, community, leisure and sports facilities, a hotel, new primary and secondary schools, and green spaces including parks, ecological areas and woodlands[8]. On 11th March 2020 a planning application for Key Phase 1, for the first 1,600 homes on the Urban and Civic site, was submitted[9]. A Design Code has also been approved for the development, which specifies the design requirements and guidelines for Key Phase 1[10].

RLW Estates submitted a planning application on 30th May 2018 for a 4,500-dwelling development with business, retail, community, leisure and sports facilities, new primary and secondary schools and sixth form centre, and public open spaces including parks and ecological areas. This application is awaiting a decision[11].

The New Town north of Waterbeach will be serviced by transport links which have been considered within this study. Figure 3-1 shows the spatial framework for the New Town.

[8] Planning application: S/0559/17/OL
[9] Planning application: 20/01649/REM
[10] Planning application: S/4383/19/DC
[11] Planning application: S/2075/18/OL

Figure 3-1 – Spatial Framework for the Proposed New Town North of Waterbeach[12]



3.2.2. North East Cambridge

NEC lies to the south of the A14 and comprises several sites, including (landowner or developer shown in brackets):

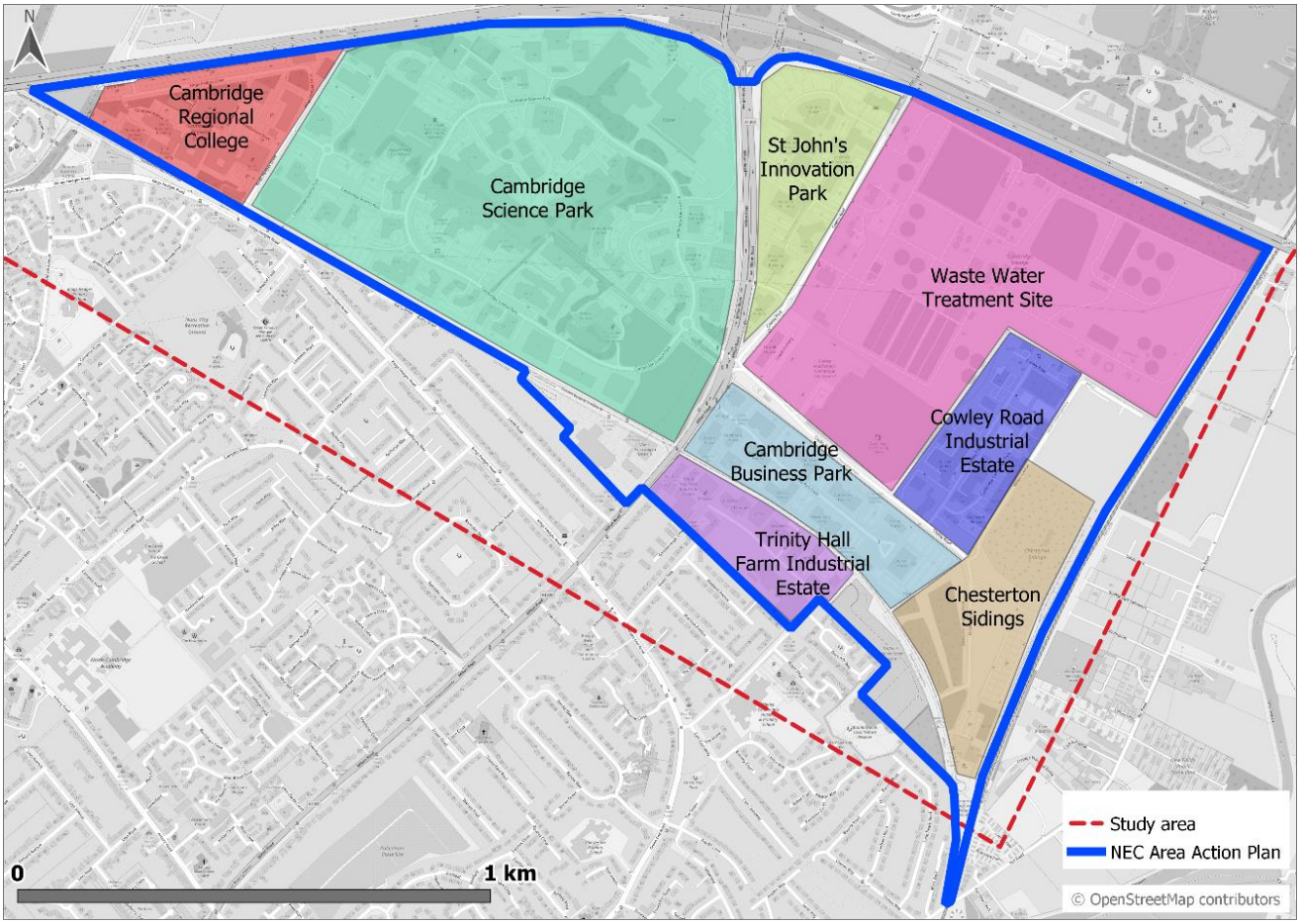
- Cambridge Science Park (Trinity College);
- Cambridge Business Park (The Crown Estate);
- Trinity Hall Farm Industrial Estate (Trinity Hall Farm / Dencora);
- St John's Innovation Park (St John's College);
- Chesterton Sidings (Network Rail / Brookgate / DB Schenker);
- Cambridge Regional College (Cambridge Regional College);
- Waste Water Treatment Plant (Anglian Water, plus some land owned by Cambridge City Council (CCiC); and
- Nuffield Road and Cowley Road Industrial Estates (various, including CCiC).

The Tarmac Aggregates facility also lies within the NEC boundary, but redevelopment is not anticipated due to its nature as a strategic freight handling location.

The existing site layout is shown in Figure 3-2.

[12] South Cambridgeshire District Council (2019) *Waterbeach New Town: A Spatial Framework and Infrastructure Delivery Plan. Supplementary Planning Document* [Page 72-73]

Figure 3-2 - Main Sites in NEC Proposals[13]

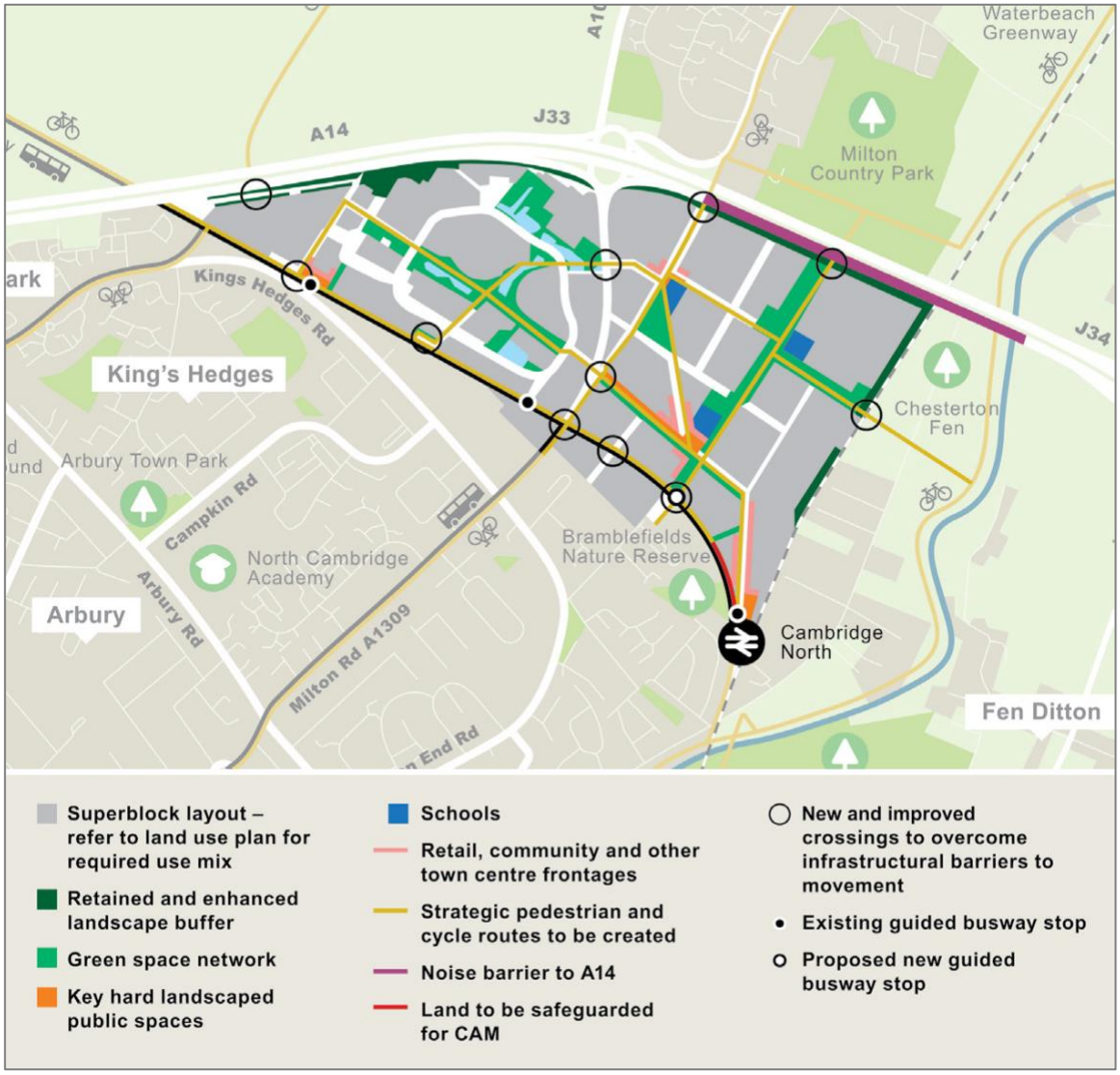


There are currently approximately 12,000 jobs across the existing sites. There are plans to intensify the area, providing an additional 18,200 to 27,000 jobs and between 5,500 and 9,200 dwellings.

The NEC area is currently served by local bus services, including the Milton Park and Ride service, and is proposed to be serviced by new transport links which have been considered within this study. Figure 3-3 shows the spatial framework plan, from the draft Area Action Plan published in June 2020.

[13]Information provided by the GCP

Figure 3-3 - NEC Spatial Framework[14]



3.3. Transport Demand

Whilst at this stage of the study the absolute transport demand for the corridor has not been quantified, it was important to consider the potential impact of future development on the existing transport network.

The scale of housing and employment for existing and future developments in the study area is shown in Table 3-1, and indicates the future broad level of demand for transport services. The figures provided in Table 3-1 have been obtained from a variety of sources including 2011 Census data and information provided by GCP.

[14] Extract from Draft North East Cambridge Area Action Plan (2020) [Figure 10 on Page 39]

Table 3-1 – Levels of Housing and Employment in Existing and Future Developments

Development	Existing scale of development	Proposed scale of development
Waterbeach New Town[15]		11,000 dwellings; 25,500 sqm retail; 39,800 sqm employment use; 21,235 sqm leisure and community use
Waterbeach village[16]	2,070 dwellings	
Milton village	1,765 dwellings (2011 census)	
Cambridge Research Park[17]	41,660 sqm employment	315 sqm retail; 27,885 sqm employment
Waste Water Treatment Plant	Approximately 44 ha	5,500 dwellings; 3,700 sqm retail; 23,500 sqm employment; 5,700 sqm community use
Cambridge Science Park	160,000 sqm employment[18]	1,000 sqm retail; 109,969 sqm employment; 100 sqm community use[19]
St John's Innovation Park	24,137 sqm employment[20]	100 sqm retail; 35,000 sqm employment
Cambridge Business Park	30,193 sqm employment[21]	500 dwellings; 1,500 sqm retail; 68,000sqm employment
Trinity Hall Farm Industrial Estate and Nuffield Road Industrial Estate	22,443 sqm employment	550 dwellings; 1,500 sqm employment
Chesterton Sidings		730 dwellings; 1000 sqm retail; 55,000 sqm employment; 100 sqm community use
Cowley Road Industrial Estate		500 dwellings; 17,500 sqm employment
Merlin Place and Milton Road Car Garage		220 dwellings

[15] Planning applications S/0559/17/OL for Waterbeach New Town (west) and S/2075/18/OL for Waterbeach New Town (east)
[16] Waterbeach Parish Council (2019) Waterbeach Neighbourhood Development Plan 2020 to 2031
[17] Planning application S/4615/18/OL
[18] Odyssey, on behalf of Trinity College Cambridge and Cambridge Science Park (2018) Cambridge Science Park Transport Strategy
[19] Greater Cambridge Shared Planning (2020) North East Cambridge Draft Area Action Plan
[20] St John's Innovation Park (2020) St John's Innovation Park: Buildings https://www.sjip.co.uk/buildings/ Site accessed 14th July 2020
[21] Cambridge Business Park (2020) Cambridge Business Park https://www.cambridgebusinesspark.co.uk/ Site accessed 14th July 2020

The residential developments alone could lead to an increased demand of around 17,000 person-trips in the AM and PM peak hours across all modes of transport[22]. Whilst not all these trips will be to or from Cambridge or will use the full length of the corridor, a significant proportion are likely to do so. If no interventions are made, this will increase the demand in the corridor and could saturate areas of the existing transport network, such as the currently congested Milton Interchange. The relative scale of each development and the importance of being served by new transport infrastructure is discussed further in section 4.4, where the transport markets are considered.

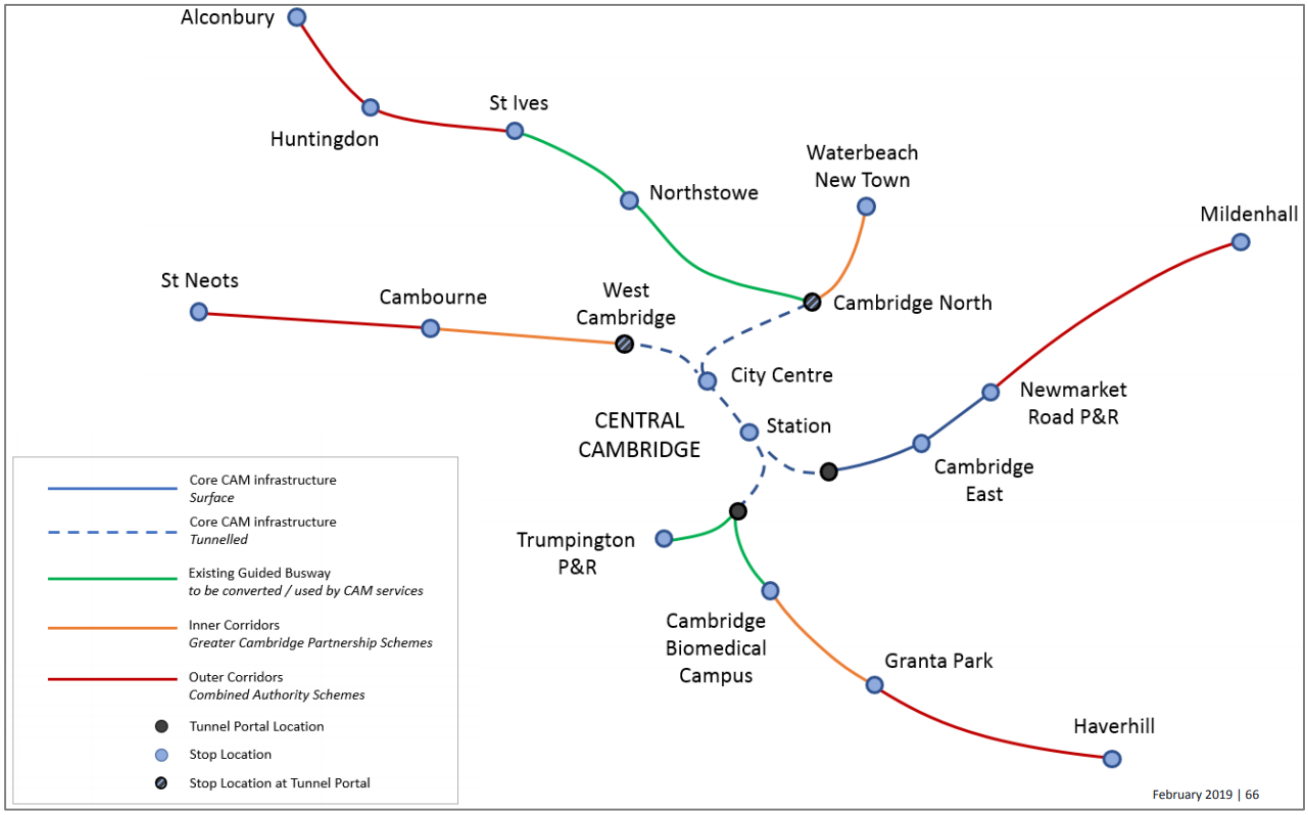
3.4. Transport Improvements

Several major transport schemes are proposed for the local area to improve transport connectivity in the study area and beyond. These are summarised in sections 3.4.1 to 3.4.5.

3.4.1. Cambridge Autonomous Metro

The Cambridge Autonomous Metro (CAM) is a CPCA project, set out in the Draft LTP, that would provide high-quality, high frequency services in the Cambridge region (including NEC). Delivery of CAM will be in collaboration with the GCP, with the first phase of CAM being high-quality, segregated public transport routes along key corridors, including between NEC and Waterbeach. This first phase of the CAM network will be served by electric vehicles, which will continue on-street into Cambridge city centre prior to the opening of the tunnels under the city centre. The proposed CAM network is shown in Figure 3-4.

Figure 3-4 - Proposed CAM Network[23]



[22] Based on estimates of trip rates from TRICS database, version 7.6.4
[23] Steer (2019) *Cambridgeshire Autonomous Metro Strategic Outline Business Case.* [Page 66]

3.4.2. Committed S106 schemes

Following the grant of outline planning permission for 6,500 dwellings as part of the New Town north of Waterbeach, the Local Planning Authority and Urban and Civic agreed a Section 106 agreement for a number of transport improvements including:

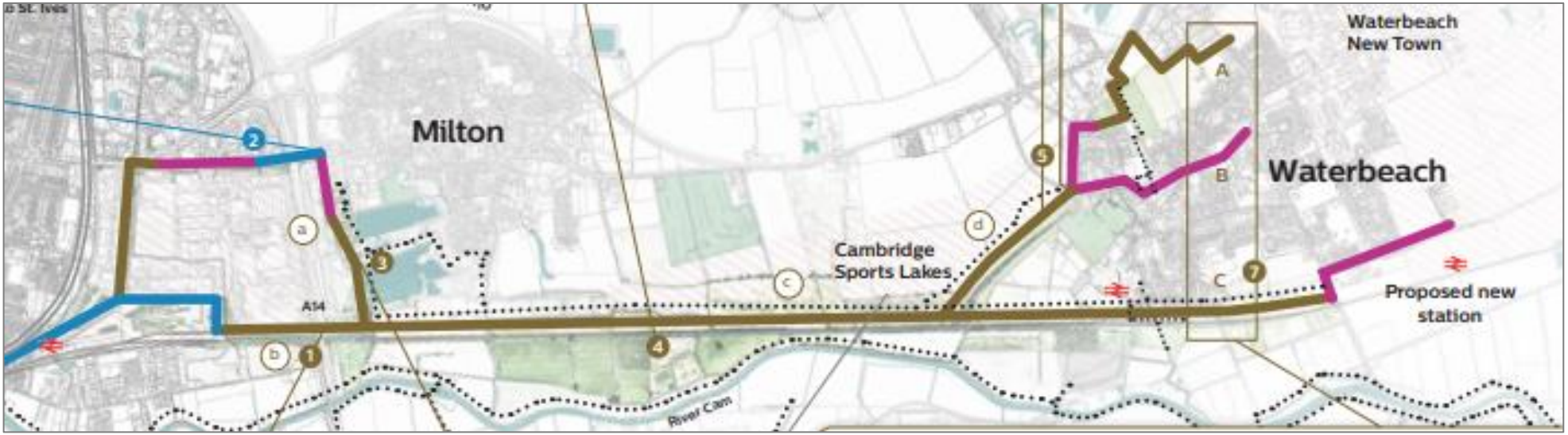
- **Milton:** Advisory cycle lanes, signage and hatch markings on Cambridge Road in Milton;
- **Mere Way Cycleway Designs:** A shared use path will be built along Mere Way and the Roman Road, passing through Landbeach and on to the A10, where a walking and cycling bridge will cross the A10 and connect with a shared use path into the New Town and to the Greenway through the existing village of Waterbeach;
- **Bus services:** extension of the Milton Park and Ride bus service or a new service to link Waterbeach New Town and Cambridge, and a new bus service between Cambridge Research Park, Waterbeach Railway Station and Waterbeach New Town;
- **A10 signalisation works (Landbeach Road/Humphries Way Junction):** Traffic signals will be installed at the junction of the A10 with Landbeach Road and Humphries Road to manage demand. The A10 at the junction will also be widened to accommodate turning lanes; and
- **A10 Improvements at Butt Lane and Milton P&R Enhancements:** Widening the southbound lane on the A10 south of Butt Lane.

3.4.3. Greenways and Trails

There are two proposed Greenway and Trail Schemes that are within or connect to the study area:

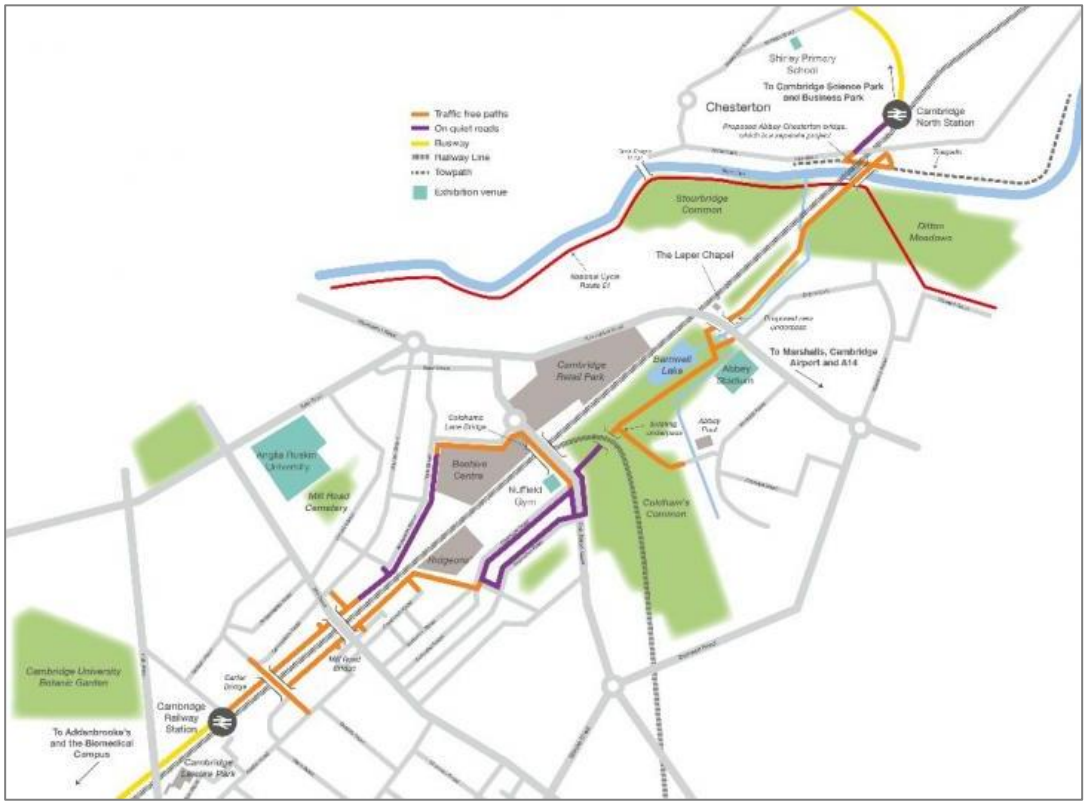
- **Waterbeach Greenway:** A paved shared use path with a grassed area to one side for horse riders, joggers or ramblers. The path will connect Waterbeach to NEC and run alongside the railway (Figure 3-5). A transit corridor option on the eastern side of the study area could tie in with the Waterbeach Greenway, with the greenway forming the parallel walking and cycling route; and
- **Chisholm Trail**: A committed walking and cycling route between Cambridge station and Cambridge North station which would improve the link between the proposed NEC area and Cambridge Biomedical Campus (Figure 3-6). The southern end of a sustainable transport corridor from Waterbeach to NEC would connect to the Chisholm Trail, extending the reach possible for people walking or cycling along either route. The section between Cambridge North Station and Newmarket Road is currently under construction and a new walking and cycling bridge across the River Cam is expected to be opened in Autumn 2020.

Figure 3-5 - Proposed Waterbeach Greenway Route[24]



[24] Greater Cambridge Partnership (2019) *Waterbeach Greenway Consultation Document*

Figure 3-6 - Proposed Chisholm Trail Route[25]



Other Greenway projects are being proposed, including the Horningsea and Swaffham Greenways. The Horningsea Greenway would start within 4km of Waterbeach and would be an alternative route to the east of Cambridge via Fen Ditton.

3.4.4. A10 Dualling

Several studies have considered dualling the A10 to the north of Cambridge to increase capacity and improve journey time reliability. Most recently the CPCA have commissioned a study on the A10, which is currently being undertaken in parallel to this study[26]. The seven options presented in the first round of public consultation for the A10 study are:

- Predominantly online full length dualling, bypassing the key pinch points west of Milton and at Stretham (western bypass) and Little Thetford;
- Predominantly online full length dualling, bypassing the key pinch points west of Milton and at Stretham (eastern bypass) and Little Thetford;
- Offline dualling of the southern section to Cambridge Research Park in addition to the junction improvements;
- Full length, offline dualling;
- Maximise the extent of online dualling, whilst bypassing the key pinch points at Stretham (western bypass) and Little Thetford;
- Online dualling of the southern section to Cambridge Research Park in addition to the junction improvements; and
- Junction improvements only.

[25] https://www.greatercambridge.org.uk/transport/transport-projects/chisholm-trail/

[26] CPCA (2020) A10 https://cambridgeshirepeterborough-ca.gov.uk/about-us/programmes/transport/a10/ Site accessed 14th July 2020

None of the options considered in this public transport study are dependent on any of the A10 dualling proposals, although there may be interfaces if both a public transport scheme and an A10 scheme come forward.

3.4.5. Rural Travel Hubs

Rural Travel Hubs (RTH) are proposed small, flexible interchanges located around South Cambridgeshire that would be connected to sustainable transport networks (public transport, walking and cycling), have cycle parking and a small amount of car parking. GCP and CPCA have agreed that RTHs are effective schemes that provide similar services to Park and Ride sites but on a smaller scale for surrounding villages.

3.4.6. Covid-19 Schemes

In response to the Covid-19 pandemic, GCP and CCC are currently implementing some experimental measures to support active travel and help meet transport demand while public transport capacity is reduced due to social distancing requirements[27]. The measures currently planned within or near the study area are shown in Table 3-2.

Table 3-2 - Experimental Covid-19 Measures Located in or near the Study Area

Location	Measure
Ely Road, Milton	Prohibition of southbound motor vehicle movements from A10 to Ely Road to deter motor traffic routing through Milton village and provide better conditions for cyclists. Landbeach Road would remain available for local trips into Milton from the north.
Milton High Street	20mph speed limit, widened footway between White Horse and Lion and Lamb
Milton Park and Ride	Additional cycle parking spaces at the five Cambridge Park and Ride sites and the Longstanton Park and Ride site. This will allow for overnight parking of cycles used for Park and Cycle trips while social distancing limits Park and Ride capacity.
Butt Lane between Milton and Histon	Modal filter on Butt Lane to the west of entrance to Household Waste Recycling Centre
Cowley Road, Cambridge	Remove car parking on east side to segregated cycleway from shared use path allowing more space for social distancing.
Milton Road	Temporary on-road cycle lanes to encourage cycling on road rather than on narrow shared use path, facilitating social distancing. South of Gilbert Road: Modal filter, allowing bus / cycle / emergency services access.

Source: Online map by Cambridgeshire County Council (as at time of compilation, early August 2020)

3.5. Waterbeach Station / Development Alternative Scenario

There is uncertainty over the delivery and timing of RLW Estates' proposals and the relocation of Waterbeach railway station. To reflect this, an additional scenario, known as the Alternative Do Minimum scenario, will be assessed which assumes these proposals and the station relocation would not take place.

This alternative scenario does not affect the assessments described in this report but will be considered during the subsequent SOBC stage of this study.

3.6. Summary

This chapter outlines the proposed developments within the study area that represent the 'without scheme' case (or Do Minimum scenario). This includes two major developments (New Town north of Waterbeach and NEC) and several transport schemes such as CAM, S106 improvements for the New Town north of

[27] Proposed experimental measures shown in map form at: https://www.google.com/maps/d/viewer?mid=1RJibWG1JzrKmsOnXITAyYSOE5GhEZaOl&utm_medium=email&utm_source=govdelivery&ll=52.23109402854997%2C0.1585592859008278&z=13

Waterbeach development, the proposed Greenways schemes and A10 dualling. A summary of the Do Minimum scenario is shown in Table 3-3.

Table 3-3 - Do Minimum Scenario

Intervention / assumption	In Do Minimum?
Waterbeach Greenway	Yes – preferred route approved by GCP
Approved Waterbeach development and its S106 commitments	Yes
A10 junction enhancement schemes	Yes – the Waterbeach Phase 1 development schemes (used as a proxy for final situation)
A10 dualling	No – but taking account of it as part of context
RLW development and Waterbeach station relocation	Yes, plus a sensitivity scenario with neither of these
NEC Area Action Plan	Yes, for its urban realm assumptions
Cambridge South station	Yes
Chisholm Trail	Yes
Bottisham / Swaffhams / Horningsea Greenways	Yes
Local Plan growth sites	Yes
Higher Growth Scenario	Yes – for numeric purposes. This scenario is being used to test all GCP schemes and CAM
Choices for Better Journeys	No specific assumption at this stage If required, use existing CSRM proxy test as a sensitivity test Revised CSRM Do Minimum scenario, with other GCP schemes in place, complete summer 2020
Bus network changes and policies	Liaison required with CPCA on future bus policy

4. Required Outputs and Outcomes

4.1. Introduction

This chapter sets out the scheme objectives and intended outcomes of the project, which have been agreed by GCP.

The scheme objectives set by GCP are as follows:

1. Provide additional sustainable transport capacity to provide for the transport demands of economic and housing growth;
2. More reliable journey times by public transport;
3. More journeys along the corridor being undertaken by public transport; and
4. More short journeys along the corridor being undertaken by walking and cycling (because people feel safer and have direct routes between origins and destinations).

For the purposes of assessing options for this study, these overarching objectives have been developed in more detail, into a set of outputs and a set of outcomes. These have been outlined in the following sections.

4.2. Transport Outputs

The agreed transport outputs were set out in the Appraisal Methodology Report (AMR) and represent the desired infrastructure capabilities. The transport outputs are:

- Sufficient **sustainable transport capacity** with appropriate frequencies to meet the additional demand for travel due to jobs and housing growth;
- High standards of **public transport speed, reliability and safety** between the New Town north of Waterbeach and NEC (and beyond); and
- High standards of **infrastructure for walking, cycling and other non-motorised modes** of travel between the New Town north of Waterbeach and NE Cambridge, including providing as direct routes as possible.

4.3. Transport Outcomes

The transport outcomes are the outcomes which any investment recommended by the study should seek to achieve. The outcomes agreed for this study, which reflect the 'study objectives' set in the brief, are:

- A **higher share of journeys** along the corridor being made **by public transport**;
- A **higher share of short journeys** being made by **walking and cycling**;
- A **smaller share of journeys** in the corridor being made **by private car**;
- **Fewer vehicles driving into Cambridge** (compared to 2011 levels); and
- Improved perceptions of **safety**.

4.4. Travel Markets

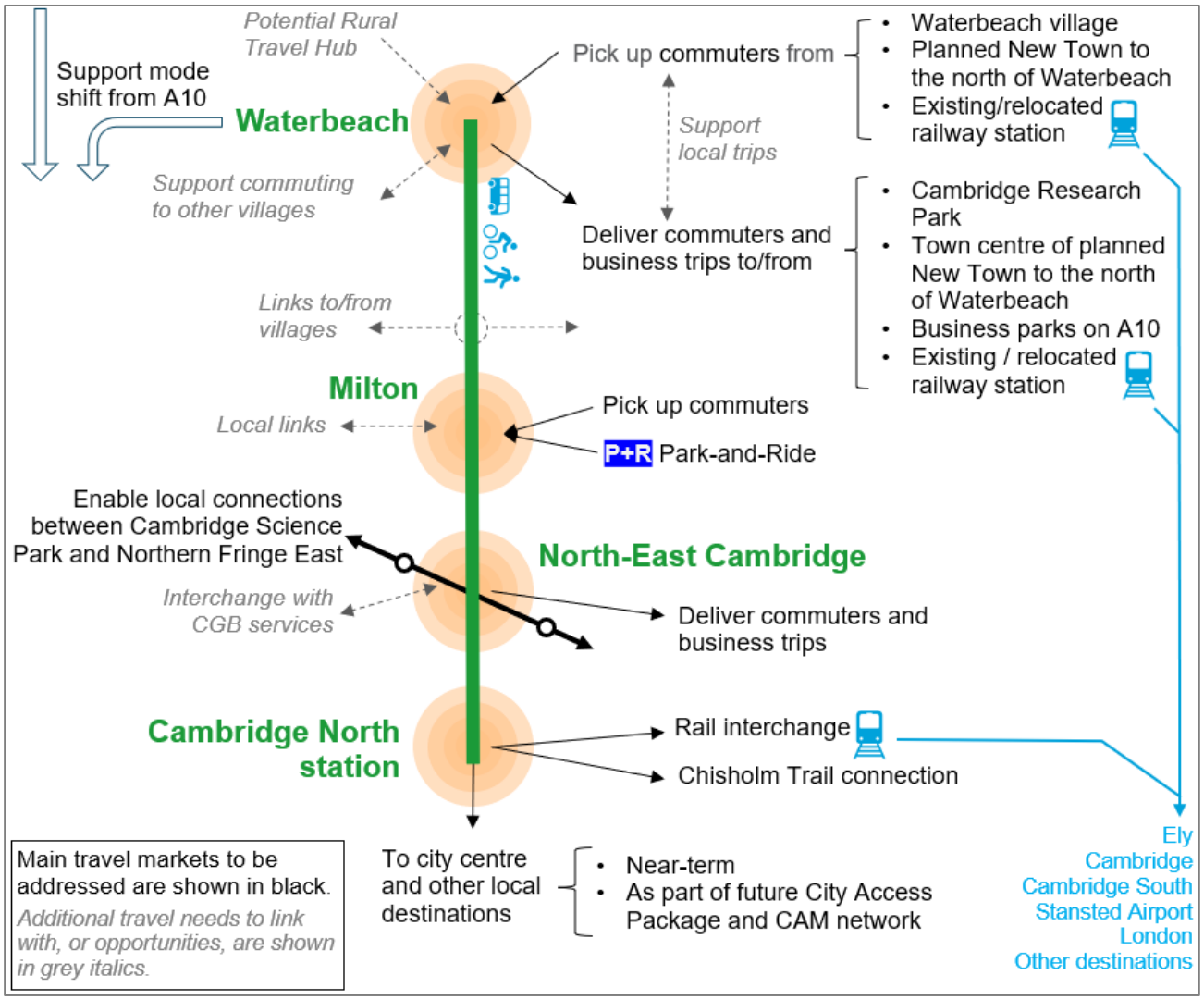
Several key travel markets have been identified. The main ones involve trips to or from the following key locations within the study area (listed from north to south):

- Waterbeach (including the proposed New Town north of Waterbeach);
- Milton village;
- The North East Cambridge area, including Cambridge Science Park; and
- Cambridge North station.

Figure 4-1 highlights the travel markets that will be serviced by new transport links proposed in this study and summarises onward travel links. It should be noted that:

- The central green line shows the overall improved connections required from the project. The black lines and text show the main types of trip that these connections aim to serve;
- Figure 4-1 does not necessarily imply a single, linear intervention. The requirements could potentially be met through a combination of sustainable travel corridors and does not imply a single public transport route covers all markets;
- Orange circles represent key areas to be connected and not individual 'stops' or entry/exit points; and
- Dotted lines and grey italic text show potential additional synergies to be considered.

Figure 4-1 - Study Area Travel Markets



As shown in Table 3-1, the markets served by new transport links vary in size. The proposed New Town north of Waterbeach (11,000 dwellings and 40,000 sqm of employment use) and NEC area (8,000 dwellings and approximately 330,000 sqm of employment use) represent the largest markets within the area.

Whilst the existing Waterbeach and Milton villages represent smaller markets, they account for approximately 4,000 dwellings and therefore proposed transport schemes should aim to service these villages where possible.

5. Stakeholder Engagement Strategy

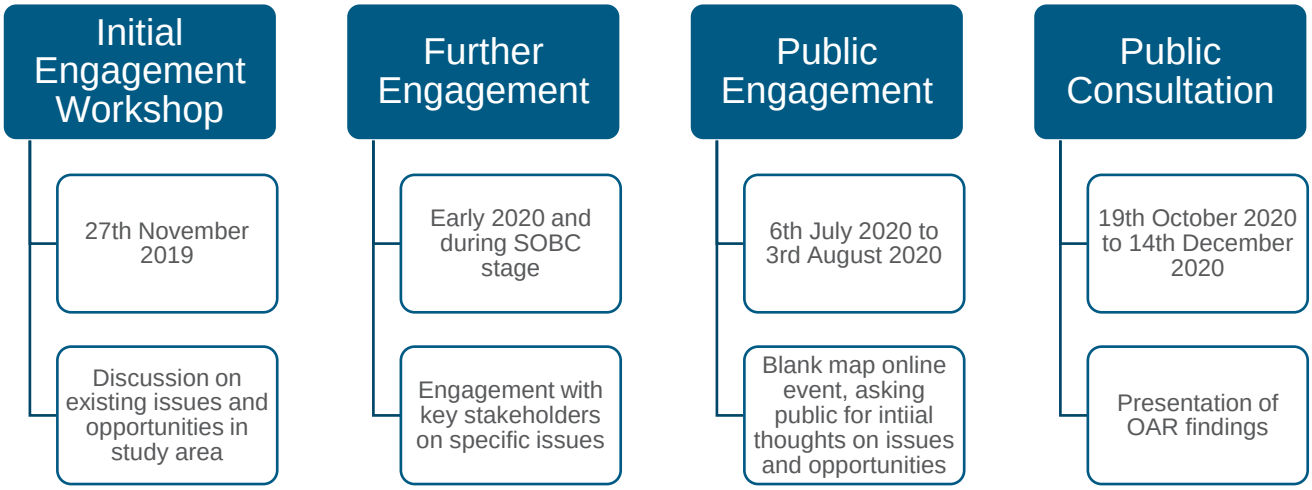
5.1. Introduction

This chapter sets out the stakeholder engagement strategy. It includes details of the first engagement workshop that took place on 27th November 2019 and further events that are due to take place over the course of the project. Stakeholders for the scheme are also identified.

5.2. Stages of Engagement

Figure 5-1 shows the completed and planned stages of engagement during the course of the study. GCP is preparing a full stakeholder engagement plan.

Figure 5-1 - Stakeholder Engagement Stages



Each engagement event will be tailored to those who are attending, and outcomes of those meetings will inform the SOBC assessments. Quick wins identified in the stakeholder engagement process to date have been noted and outlined in Chapter 6.

5.3. Summary of Stakeholder Engagement Workshop (27.11.19)

The first stakeholder engagement workshop was held on 27th November 2019 at Waterbeach Barracks. The purpose was to understand stakeholders' views on the existing issues, constraints and opportunities within the corridor. The stakeholders in attendance were:

- Milton Parish Council;
- Cambridge Area Bus Users;
- Greater Cambridge Shared Planning;
- South Cambridgeshire District Council;
- Ely Cycling Campaign;
- Waterbeach Parish Council;
- Cambridge Sport Lakes Trust;
- Camcycle;
- Milton and Waterbeach residents;
- Stagecoach;
- Waterbeach Cycling Campaign; and

- British Horse Society.

The key outputs from the stakeholder engagement event were:

Existing Challenges

- Congestion affecting not only car travel but also the reliability of buses;
- The limited frequency of local buses can be a barrier to travel;
- Some walking and cycling paths within the corridor have not been maintained well;
- The railway service between Waterbeach and Cambridge is considered to be under-exploited; and
- There are current issues around Waterbeach with informal parking.

Public Transport Opportunities

- There is currently no signage/real time passenger information at or around stops;
- There is a lack of bus priority within the corridor;
- There is a need for reliable and fast public transport through the corridor, requiring both an increase in overall service levels and segregation from traffic congestion;
- There are two distinct public transport needs: a 'core' transit service to/from Cambridge, on a rapid and segregated route, and a more localised service within the Waterbeach area to serve individual neighbourhoods;
- Public transport could be subsidised to encourage mode shift from private vehicles;
- Access to existing busway could be improved from Cambridge Science Park;
- Additional parking close to the busway could reduce car mode share within Cambridge City Centre; and
- Additional trains could alleviate congestion on inbound trains to Cambridge in the AM peak.

Opportunities for Walking and Cycling

- Segregated walking and cycling links are preferred if in close proximity to other infrastructure (to improve perceived levels of safety)
- Additional A10 crossing points to improve east-west links;
- Opportunities for improved walking and cycling routes between Horningsea and Waterbeach (outside the current study area);
- An overall need to improve walking and cycling access to/from Waterbeach in all directions; and
- Improve perceived safety levels between Cambridge North railway station and CGB.

5.4. Summary of Stakeholders, How Engaged and Their Role

Table 5-1 summarises the key stakeholders as identified by GCP and any areas where they have a particular role within this project.

Table 5-1 - Summary of Key Stakeholders

Stakeholder	Role within Project
A10 Ely to Cambridge project team	Potential synergies or conflicts between both studies. One project may be dependent on the other in some respects, depending upon options being taken forwards.
Bus operators	Existing and potential providers of services within study area Agreement to be sought regarding operations of potential scheme
Business organisations	Stakeholder
Cambridge Ahead	
CAM project team	The Waterbeach to North East Cambridge public transport corridor forms part of CAM network.
Cambridge North East Land Owner Forum	Stakeholder
Cambridge Northern Fringe East	Potential for transit route to traverse Cambridge Northern Fringe East land Agreement to be sought regarding operations of potential scheme through land
Cambridge Past Present and Future	Stakeholder
Cambridge Research Park	Potential service could originate/terminate in Cambridge Research Park Agreement to be sought regarding operations of potential scheme through land
Cambridge Science Park	Potential for transit route to traverse Cambridge Science Park land Agreement to be sought regarding operations of potential scheme through land
Cambridge University	Stakeholder
Cambridgeshire County Council (Local Highway Authority)	Statutory consultee with any proposed planning permission within the study area
Camsight and groups which represent people with limited mobility or a sensory impairment and wheelchair users	Stakeholder
Commuters	
Councillors (local)	Councillors to provide approval for scheme. Statutory consultee with any proposed planning permission within the study area
Councillors (wider)	
Cambridgeshire and Peterborough Combined Authority (Local Transport Authority)	Scheme will aim to satisfy key stakeholder policies Consultee with any proposed planning permission within the study area
Emergency services	Statutory consultee with any proposed planning permission within the study area
Environmental groups	Stakeholder
GCP Executive Board	Project to be approved by GCP Executive Board

GCP Officers for other GCP Schemes	Provision of wider GCP project information and tie in with parallel projects
Greater Cambridge Planning Service	Consultee with any proposed planning permission within the study area
Highways England	Statutory consultee with any proposed planning permission within the study area
GCP Joint Assembly	Consultee with any proposed planning permission within the study area
Landowners	Stakeholder Negotiations may be required for potential land take (subject to proposed routes)
Local businesses	Stakeholder
Local campaign groups	
Local developers	
Local residents	
Media	
MPs	
Network Rail	Statutory consultee with any proposed planning permission within the study area Potential interaction if any schemes involve or are close to the railway
Parish Councils	Statutory consultee with any proposed planning permission within the study area
Park and Ride	Stakeholder
Residents' Associations	
Schools	
Smart Cambridge	
Technical consultants	
Transport user groups	
Utility companies	
Youth groups	

6. Option Generation, Sifting and Assessment Process

6.1. Introduction

This chapter outlines the methodology employed and the findings of the option generation, sifting and assessment processes. This phase of the study was broken down into three stages:

1. The option generation stage identified possible options that had the potential to meet the objectives and deliver the outcomes of the study. Option generation was not constrained by the findings of previous studies (see section 6.2).
2. Identified options went through a sifting stage, where each was evaluated using a specific set of criteria to ensure that the transport objectives of the study could be met. Options that were unable to meet these high-level criteria were discarded at this stage (see section 6.3).
3. The final stage was to undertake a more detailed assessment of the options remaining, assessing their fit against each transport objective and outcome, and engineering and environmental constraints. This assessment fed in to a Multi Criteria Assessment Framework (MCAF) to record the evidence and score each option against the criteria. From this, sets of options were considered in combination to provide corridor options for full connectivity to and from each end of the study area (see section 6.4).

6.2. Option Generation

6.2.1. Methodology

The initial option generation stage was informed by, but not constrained to, the previous studies outlined in section 2.4, proposed developments outlined in section 3 and driven by existing policy outlined in section 2.3. All options with the potential to meet the transport objectives were considered.

The option generation process adopted a link and node system due to the number of options. This enabled a clearer picture and assessment of each specific connection within the area. A series of links could then be connected to form an end-to-end route, whilst retaining a view of the specific limitations for each link. Key nodes were also identified, relating to key connections, intersections of links, or interaction with existing infrastructure.

Initial options were generated by the wider project team (including Atkins consultants and GCP officers), all of whom were familiar with the study area and the existing issues within it. Different concepts for connections were considered, such as maximising the use of existing infrastructure, connecting all possible markets together via an indirect route, or providing the most direct end-to-end connectivity.

Options that crossed known constraints that would be too difficult to mitigate or avoid were not progressed, as they were not considered feasible. For example, no option completely crosses Milton Country Park or the environmental (woodland) constraints to the west of Landbeach. It should be noted that at this stage it is assumed to be possible to provide an offline route over the landfill site west of Milton, but this would be subject to further investigation.

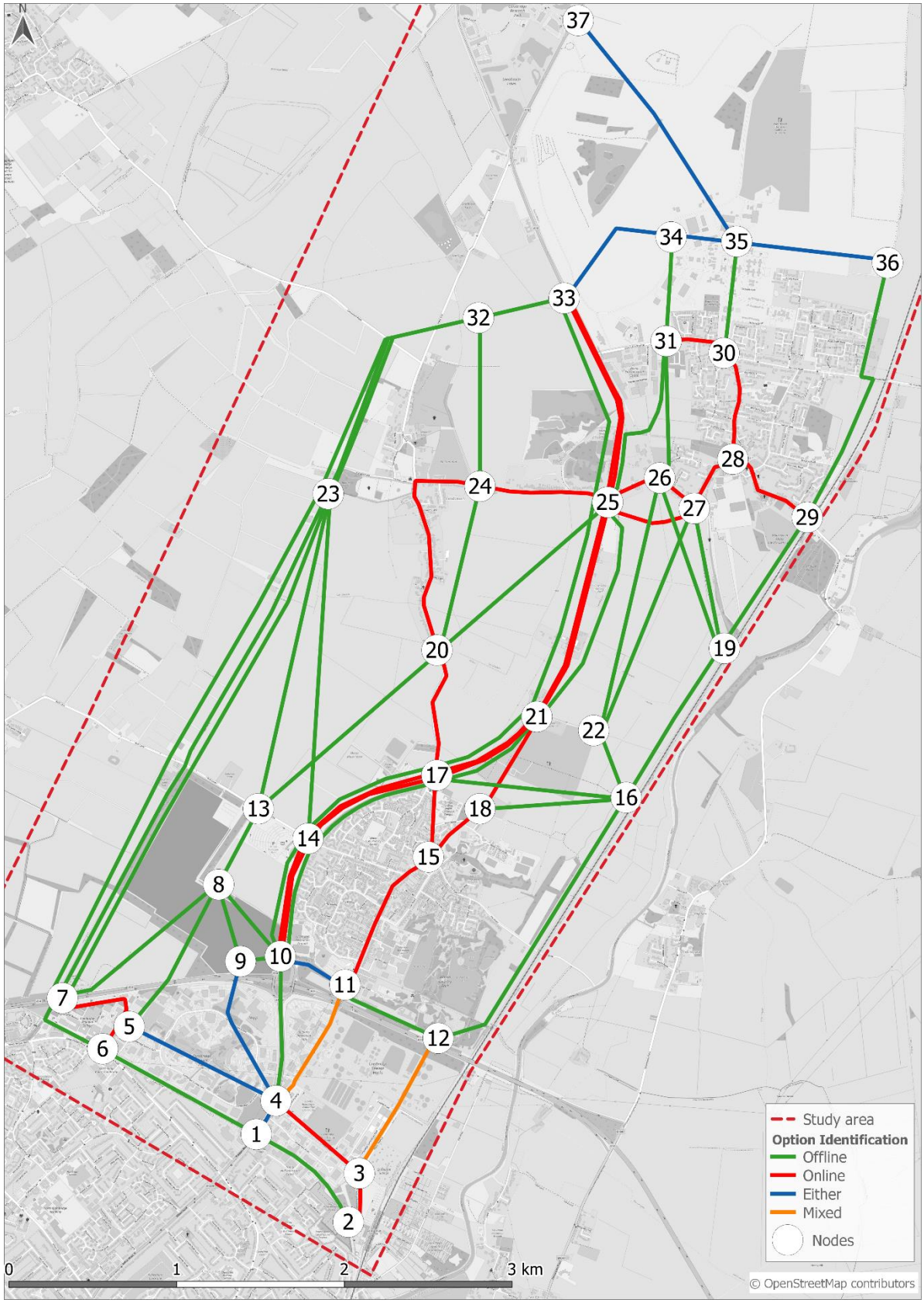
Throughout the option generation stage, quick wins were identified and have been discussed further in Chapter 7.

6.2.2. Options Generated

The approach above was used to generate a wide range of options, containing a variety of links, including offline, online and mixed (offline and online) options throughout the study area. Figure 6-1 shows the options generated by this process. During the 27th November stakeholder workshop, no further options were suggested beyond those that had already been identified.

At this stage it is considered that the links represent corridors or indicative alignments that would change as the project progresses and detailed assessment takes place. They do not represent any specific alignment or design.

Figure 6-1 - Options Generated[28]



[28] Nodes represent where links meet and do not necessarily represent any infrastructure or stop location.

6.3. Option Sifting

6.3.1. Methodology

An option sifting process reviewed and sifted the identified options that had been generated in the previous stage. Each option was assessed against three overarching criteria of Effectiveness, Feasibility and Acceptability. The assessment used a Red, Amber, Green (RAG) approach as follows:

- Green represented meeting each criterion individually;
- Amber represented a challenge to meeting the criterion that could be mitigated or overcome; and
- Red represented options that were unfeasible, unreliable, ineffective or unacceptable on a particular criterion.

Table 6-1 outlines the sifting assessment criteria and the key issues considered under each criterion that reflect the transport objectives and outcomes.

Table 6-1 - Sifting Assessment Criteria

Sifting Criteria	Elements Considered Within Each Criterion
Effectiveness	Additional sustainable transport capacity
	More reliable public transport journey times
	More public transport journeys in the corridor
	More short journeys by walking and cycling
Feasibility	Engineering constraints
	Environmental constraints
	Planning requirements
Acceptability	Stakeholder views
	Alignment with local and regional policies

GCP determined that that a reliable system was key and that if options could not improve reliability, then they should be discounted at this stage. If links were online (with traffic) and there was not an option to provide public transport priority, these were discounted as they could not guarantee reliability. Exceptions are very short sections of highway with low traffic volumes that connect two other key pieces of proposed infrastructure.

If an option received one red rating or three amber ratings, it would normally be discounted. However, this was not rigidly applied and certain options were retained where appropriate. For example, an online option using Milton Interchange was rated Red for feasibility due to engineering constraints. However it was retained at this stage as it was considered too early to remove options that used the existing main north-south transport infrastructure. It was also found that some options became redundant after other options were sifted out, so these were also removed at this stage.

Options that crossed environmental or heritage constraints, such as the Mere Way Roman Road and the Waterbeach Abbey site to the south of Waterbeach, were discounted as the potential negative impact would not be acceptable on planning and environmental grounds. Options on the eastern side of Waterbeach parallel to the railway were discounted due to the land constraints and the complexities of interaction with Clayhithe Road and its level crossing.

Following the sift, the Atkins project team reviewed each option and made a final recommendation based on the ratings for each criterion in Table 6-1. A workshop followed where the assessment was presented to GCP officers who provided feedback and approval on the process and outcomes.

6.3.2. Findings of Option Sifting

The full assessment of all links including the RAG assessment is provided in Appendix C. A plan of the results is shown in Appendix D.

6.3.2.1. Options Rejected

Table 6-2 presents the options that were rejected during the Option Sifting stage and the grounds for rejection.

Table 6-2 - Options Rejected During Option Sifting

Option ID	Option Description	Reason for Rejection
7-23b	Along Mere Way	Constrained by Mere Way Cycleway along existing alignment, with better alternatives either side
10-14b	Dependent on offline A10 dualling: old A10 gains public transport priority	Effectiveness: Online route cannot guarantee journey time reliability
10-14c	Bus priority on existing A10, with the assumption that there is either no dualling, or the dualling isn't offline	Effectiveness: Online route cannot guarantee journey time reliability
11-15	Cambridge Road/Milton High Street	Effectiveness: Online route cannot guarantee journey time reliability
14-17b	Link from Butt Lane to Landbeach Road: Dependent on offline A10 dualling: old A10 gains public transport priority	Effectiveness: Online route cannot guarantee journey time reliability
14-17c	Link from Butt Lane to Landbeach Road: Bus priority on existing A10, with the assumption that there is either no dualling, or the dualling isn't offline	Effectiveness: Online route cannot guarantee journey time reliability
15-17	Landbeach Road in Milton	Effectiveness: Online route cannot guarantee journey time reliability
15-18	Ely Road in Milton	Effectiveness: Online route cannot guarantee journey time reliability
16-17	Link from Greenway/railway to A10 at the Landbeach Road junction	Effectiveness: Not an effective connection as increasing journey time and connecting to ineffective adjoining link
16-18	Link from Ely Road at north end of Milton to Greenway/railway	Effectiveness: Not an effective connection as increasing journey time and connecting to ineffective adjoining link
17-20	Landbeach Road from A10 to just south of Landbeach village	Effectiveness: Online route cannot guarantee journey time reliability
17-21d	Link from Landbeach Road to Ely Road: aligned to A10 but offset to east	Feasibility: link adjacent to equine land, allotments and Footgolf land. Link also adjacent to A10/Ely Road junction
18-21	Along Ely Road between Milton and the A10	Effectiveness: Online route cannot guarantee journey time reliability
19-27	Alongside Greenway beside Car Dyke	Redundant due to alternative options
19-29	Alongside Greenway beside railway	Too many heritage and conservation constraints. Reliability also affected by interaction with Clayhithe Road

Option ID	Option Description	Reason for Rejection
20-24a	Route through Landbeach along Landbeach Road then Waterbeach Road	Effectiveness: Online route cannot guarantee journey time reliability
22-27	FootGolf course to Car Dyke Road/Cambridge Road junction	More effective alternatives exist
23-32b	Along Mere Way	More effective alternatives exist
24-25	Waterbeach Road to the A10	More effective alternatives exist
25-27	Car Dyke Road from A10 to Cambridge Road	More effective alternatives exist
25-33a	Link from Waterbeach Road/Car Dyke Road to WNT Access 2: aligned to A10 but offset to west	Feasibility/Acceptability: More effective alternatives exist
26-27	Cambridge Road from Glebe Road to Car Dyke Road	Effectiveness: Online route cannot guarantee journey time reliability
27-28	Cambridge Road to Chapel Street in Waterbeach	Effectiveness: Online route cannot guarantee journey time reliability
28-29	Station Road from existing Waterbeach station to Green Side	Effectiveness: Online route cannot guarantee journey time reliability
28-30	Green Side/High Street in Waterbeach	Effectiveness: Online route cannot guarantee journey time reliability
29-36	Alongside railway from existing station to new station including Bannold Drove	Adjoining links discounted

6.3.2.2. Options Retained

Links that were retained included the Green rated links, which are predominantly those links that have no or few constraints identified at this stage of the study. These links could provide the most effective service and be the most acceptable in terms of policy and stakeholders.

There are also several Amber rated links that are considered to be deliverable but may present potential issues, such as an online route on the A10 between Milton and Waterbeach, which currently is typically uncongested, but reliability cannot be guaranteed. Options such as the links within NEC are likely to be deliverable but are dependent on the NEC masterplan.

Figure 6-2 shows the links that were retained (in green) and those discounted (in grey).

Figure 6-2 - Options Retained During Options Sifting[29]

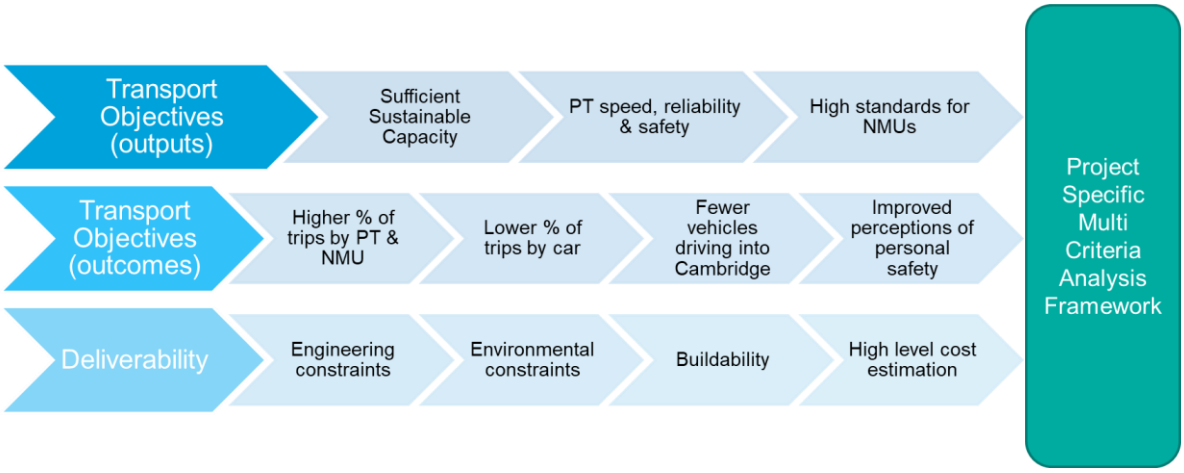
[29] Nodes represent where links are meet and do not represent any infrastructure or stop.

6.4. More Detailed Assessment

6.4.1. Methodology

The More Detailed Assessment (MDA) considered the options that were carried forwards from the previous stage (option sifting). A summary of the assessment criteria is provided in Figure 6-3.

Figure 6-3 - MDA Criteria



In Figure 6-3, “Higher % of trips by PT and NMU” are shown together for convenience but were treated as separate criteria. This means there were a total of twelve criteria.

Options were assessed using the criteria outlined in Figure 6-3 through desktop studies by specialists in each discipline who were as follows:

- Planning Lead: buildability;
- Environment Lead: environmental constraints;
- Highway Design Lead: engineering constraints, buildability and high-level cost estimation; and
- Transport Planning Lead: transport objectives (both outputs and outcomes).

As a summary of the assessments and to allow intuitive comparison of relative performance, each option was scored against the 12 criteria outlined in Figure 6-3 using a four-point scale (0 to 3). The scoring criteria were tailored to the specific assessment being undertaken and are detailed in Table 6-3. Scores from each criterion were combined to provide overall informative scores for:

- Transport planning (the eight criteria covering transport objectives);
- Deliverability (the four criteria in this area); and
- All criteria.

Scores were aggregated across the criteria for ease of assessment and followed by a sense-check.

Table 6-3 - MCAF Scoring Criteria

Assessment Criterion	Stage of Scoring (if applicable)	Scoring Guidelines
Sustainable transport capacity	Consider public transport capacity risks	Plus 3 = No pinch-points likely to reduce capacity, no splits in service required, no reliance on CGB Plus 2 = One or two of the issues listed above, but overall major capacity increases Plus 1 = Several issues, overall small capacity increases 0 = Too many issues, few or no benefits
	Then consider additional capacity for walking and cycling	Add 1 to public transport score if a new walking and cycling corridor is created Take 1 off public transport score if there is significant disbenefit to walking and cycling capacity Otherwise adopt public transport score
Public transport speed, reliability and safety	n/a	Plus 3 = Gets past all significant congestion. Creates no significant congestion of its own and offers significant safety benefits Plus 2 = Some issues e.g. limited on-street running where unavoidable Plus 1 = Quick but unreliable routing, OR reliable but slow routing 0 = No change Negatives: progressively making situation worse

Assessment Criterion	Stage of Scoring (if applicable)	Scoring Guidelines
High standards for walking and cycling	n/a	Plus 3 = Dedicated and segregated route, on the desire line, bypassing all main current problems, connecting to all the key locations Plus 2 = One significant issue from among those listed above Plus 1 = More than one significant issue, e.g. on desire lines but does not offer improvement
Higher share of journeys by Public Transport	Consider market catchment	Plus 3 = Services Waterbeach New Town, Waterbeach village, Milton village, North East Cambridge on both sides of Milton Road and Cambridge City Centre Plus 2 = Services Waterbeach New Town, Waterbeach village, North East Cambridge on both sides of Milton Road and Cambridge City Centre but not Milton Plus 1 = Services miss out one of Waterbeach New Town, Waterbeach village or one side of North East Cambridge 0 = Services miss out more than one of Waterbeach New Town, Waterbeach village or one side of North East Cambridge
	Then consider level of impact - i.e. how effectively it serves the markets it does serve	Raise or lower the initial score, according to how effectively it serves the markets it does serve (e.g. convenience of stop location)

Assessment Criterion	Stage of Scoring (if applicable)	Scoring Guidelines
Higher share of short journeys by walking or cycling	Consider market catchment	Plus 3 = Route connects Waterbeach New Town, Waterbeach village, Milton village, North East Cambridge on both sides of Milton Road and Cambridge City Centre Plus 2 = Route connects Waterbeach New Town, Waterbeach village, North East Cambridge on both sides of Milton Road and Cambridge City Centre but not Milton Plus 1 = Route misses out one of Waterbeach New Town, Waterbeach village or one side of North East Cambridge 0 = Route misses out more than one of Waterbeach New Town, Waterbeach village or one side of North East Cambridge
	Then consider level of impact - i.e. how effectively it serves the markets it does serve	Raise or lower the initial score, according to how effectively it serves the markets it does serve (e.g. convenience of stop location)
Lower share of journeys by private car	n/a	Plus 3 = Good result on higher mode shares criteria, plus good capture of external trips Plus 2 = Moderate result on higher mode shares criteria, plus good capture of external trips, or vice versa Plus 1 = Moderate result on higher mode shares criteria, plus moderate capture of external trips, or one good and one poor 0 = Poor result on higher mode shares plus poor capture of external trips
Fewer vehicles driving into Cambridge	n/a	Plus 3 = Direct connection to Cambridge North. Large number of people that are captured by having that connection Plus 2 = Less direct connection to Cambridge North, but still a large number of people that are captured by having that connection, OR vice versa Plus 1 = Circuitous connection to Cambridge North. Low numbers of people captured by having connection
Improved perceptions of safety	n/a	Plus 3 = Transit stops in busy, well-overlooked locations. Walking and cycling routes are well-overlooked with informal surveillance Plus 2 = Mostly as above Plus 1 = Mostly remote with little informal surveillance
Engineering constraints	n/a	Plus 3 = No major issues Plus 2 = Some key issues Plus 1 = Several key issues 0 = Impossible, not feasible

Assessment Criterion	Stage of Scoring (if applicable)	Scoring Guidelines
Environmental constraints	n/a	Plus 3 = No major issues Plus 2 = Some key issues Plus 1 = Several key issues 0 = Impossible, not feasible
Buildability	Governed by Planning constraints and then modified based on any specific issues relating to construction access	Plus 3 = No major issues Plus 2 = Some key issues Plus 1 = Several key issues 0 = Impossible, not feasible
High level cost estimation	n/a	Plus 3 = £0m to £5m Plus 2 = £5m to £10m Plus 1 = £10m to £15m 0 = £15m+

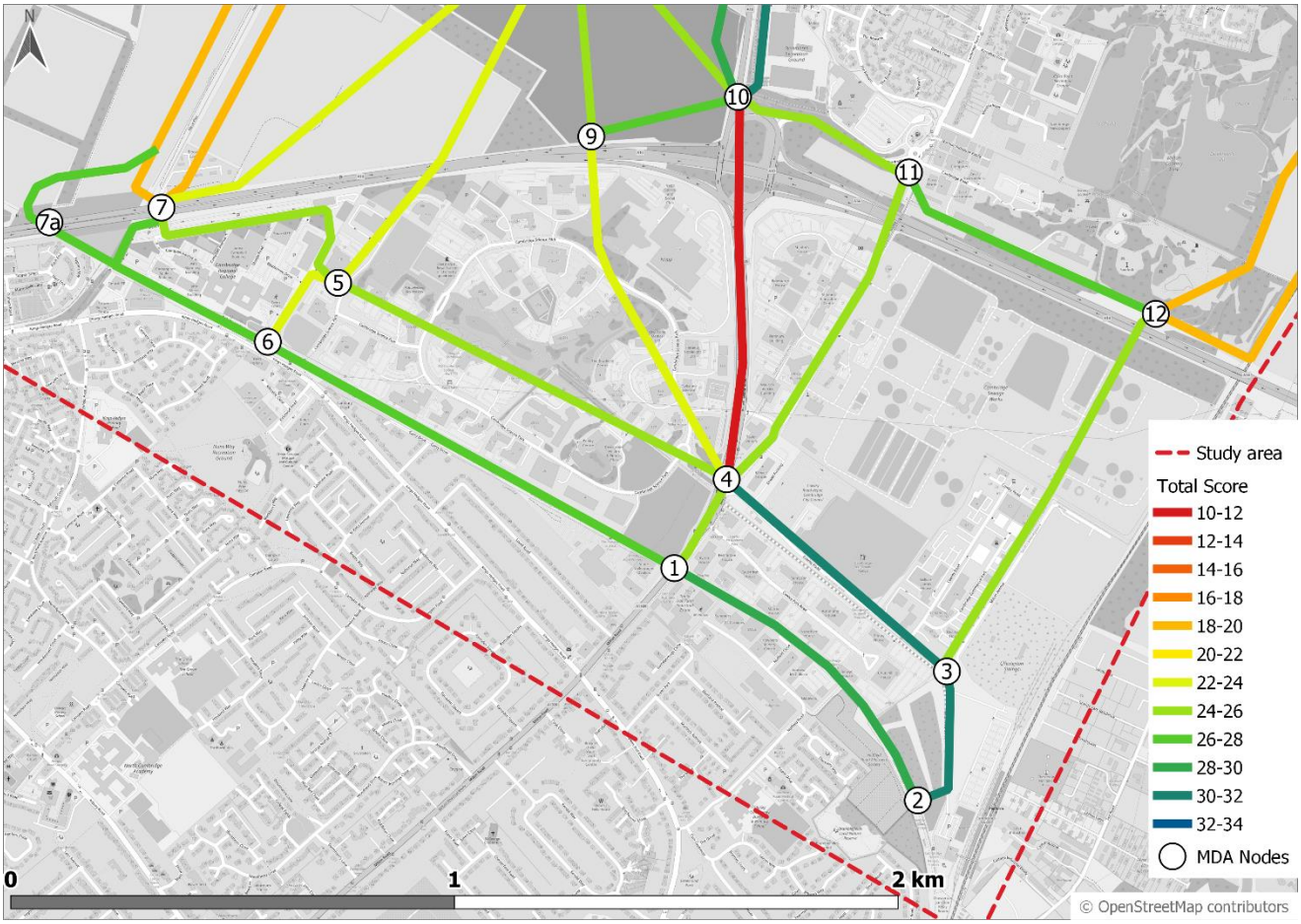
6.4.2. Results

The full findings of the MDA are provided in Appendix E. Plans of individual link scores for Transport Planning, Deliverability and the Total Score are provided in Appendix F. The sections below provide some high-level commentary on the general findings of the assessment.

6.4.2.1. Options South of the A14

Figure 6-4 shows the options to the south of the A14 that were carried through to the MDA stage.

Figure 6-4 - MDA Options and Scores - South of A14



Links are shown diagrammatically and do not necessarily represent specific alignments. Nodes are locations where links meet and do not necessarily represent specific infrastructure or stop locations. Scores represent a summary of the relative performance of each option in the assessment; they are not in themselves the assessment.

Options to the south of the A14 scored well where the corridor serves NEC on both sides of Milton Road, as these options would be most effective in improving sustainable mode share to these destinations.

Options to the west are unlikely to serve Milton village, but services are more likely to run through the whole of NEC, via the Cambridge Guided Busway (CGB), Cowley Road or new routes through NEC.

Options that cross the A14 at Milton Interchange and further east are not likely to provide a direct connection to Cambridge Science Park, although interchange either at Milton Road or Cambridge North Station to CGB services would be possible, but less desirable than a direct service.

All connections cross the A14 and this is seen as a deliverability risk. The options using the existing structures under the A14 (CGB route and Mere Way route) have a lower deliverability risk, whereas other options crossing the A14 will require new structures over or under the highway which would be more challenging.

Milton Interchange is a significant constraint. Option 4-10 has scored poorly due to several limitations, including being able to deliver significant priority for services and the engineering challenges to delivering any required structures in this area. Any interaction with Milton Interchange represents a risk to achieving a reliable public

transport service, as the junction is very congested at peak times and traffic in this area is expected to increase in the future. Any option that lands to the north of the A14 on the landfill site may require excavation, depending on the relative elevation.

6.4.2.2. Options Between the A14 and Waterbeach

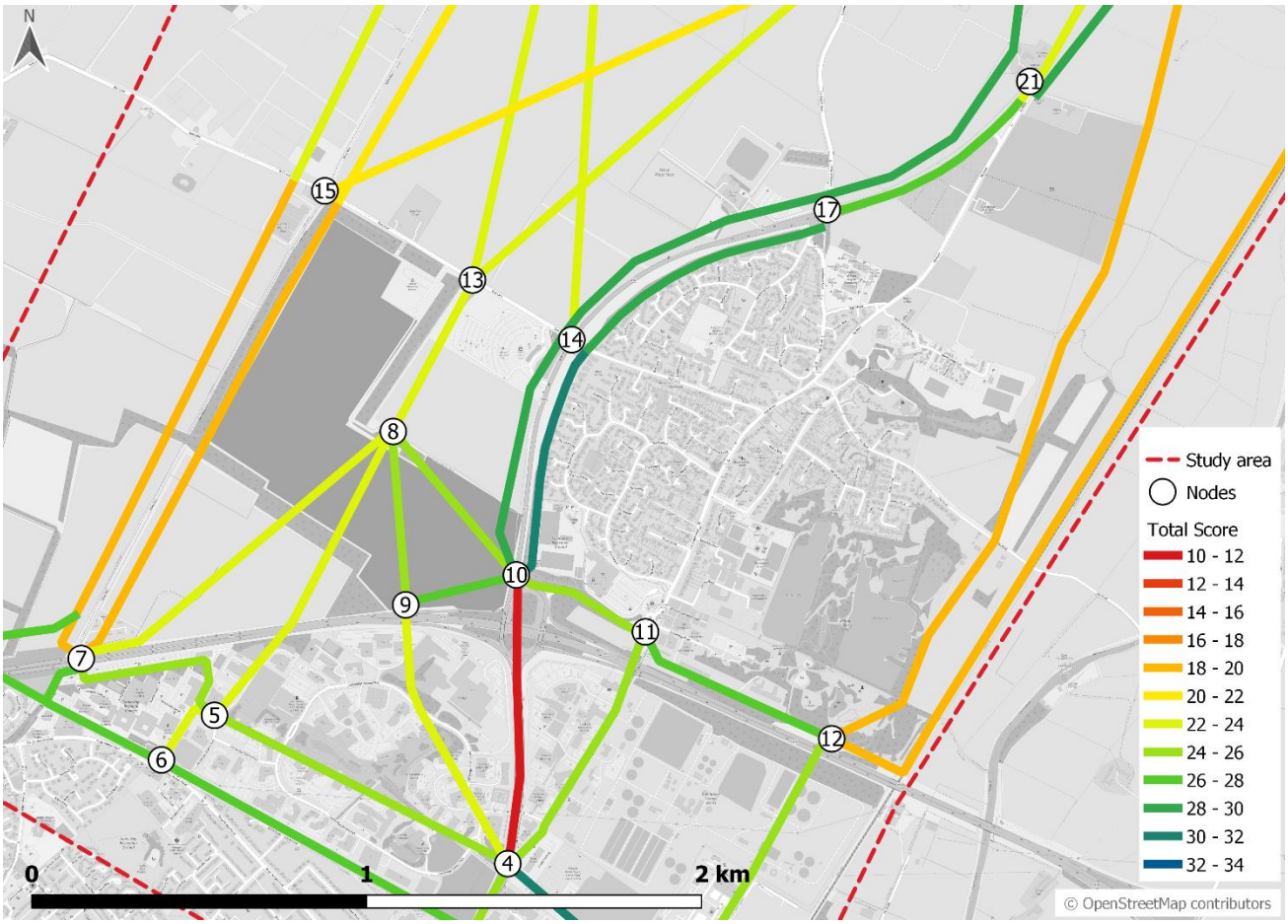
Figure 6-5 and Figure 6-6 shows the options between the A14 and Waterbeach that were carried through to the MDA stage.

The western options are unlikely to serve Milton and Waterbeach villages. However, these routes offer a direct route to the western side of NEC and the proposed New Town north of Waterbeach which are both key travel markets. The western routes (nodes 15, 7, 23 and 32) are also unlikely to be used by Park and Ride users at the existing site given the distance from the existing site and current lack of pedestrian connections along Butt Lane.

The central options (routes interacting with nodes 13, 14, 20 and 21), could serve some of Milton as they traverse the western perimeter of the village and would capture Park and Ride users. The central options could also serve Waterbeach village, should the route cross the current A10.

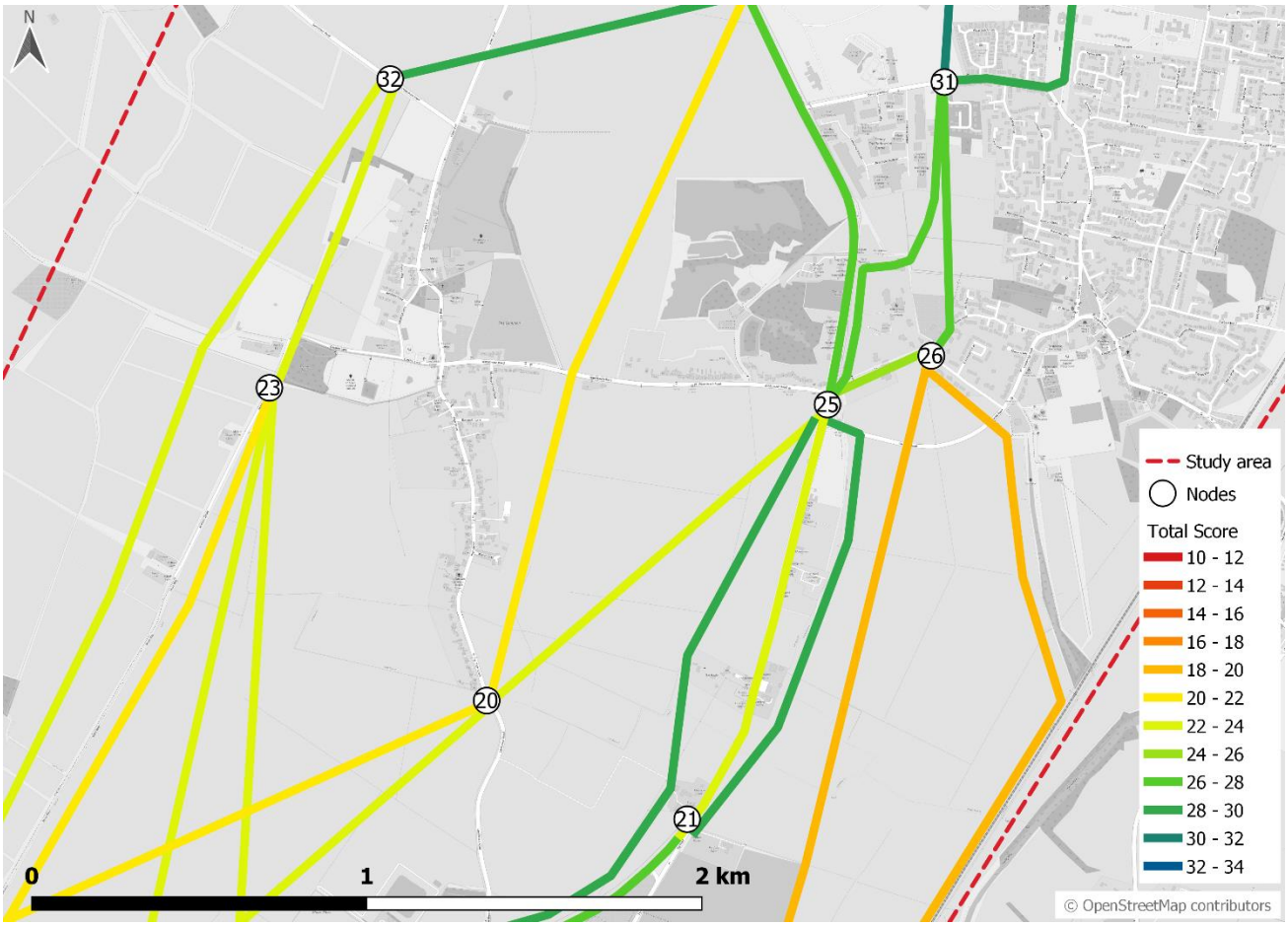
The eastern option (interacting with node 12 and 26) may serve a small portion of Milton, but would serve the existing Waterbeach village.

Figure 6-5 - MDA Options and Scores - A14 to Milton



Links are shown diagrammatically and do not necessarily represent specific alignments. Nodes are locations where links meet and do not necessarily represent specific infrastructure or stop locations. Scores represent a summary of the relative performance of each option in the assessment; they are not in themselves the assessment.

Figure 6-6 - MDA Options and Scores - Milton to Waterbeach



Links are shown diagrammatically and do not necessarily represent specific alignments. Nodes are locations where links meet and do not necessarily represent specific infrastructure or stop locations. Scores represent a summary of the relative performance of each option in the assessment; they are not in themselves the assessment.

Overall, all options will serve NEC which is the key travel market in the south of the study area. The central routes would serve Milton better than the eastern and western routes due to the proximity to the village, but Milton is a smaller travel market.

6.4.2.3. Options at Waterbeach

Figure 6-7 shows the options between the A14 and Waterbeach that were carried through to the MDA stage.

Figure 6-7 - MDA Options and Scores – Waterbeach

Links are shown diagrammatically and do not necessarily represent specific alignments. Nodes are locations where links meet and do not necessarily represent specific infrastructure or stop locations. Scores represent a summary of the relative performance of each option in the assessment; they are not in themselves the assessment.

Whilst offline routes between Car Dyke Road and Denny End Road are considered possible at this stage, further investigation is required to understand whether a transit route could fit between properties and allotments. This presents a deliverability risk, although there are transport planning benefits offered by capturing the existing Waterbeach market. The ultimate feasibility and benefits of these routes would require a more detailed assessment in the next phase of the study.

6.4.3. Summary of Key Differentiators Between Options

The following items have been found to be the key differential factors between options:

- The extent to which they can serve all areas of NEC;
- The extent to which they provide additional walking or cycling capacity (some corridors have committed walking and cycling schemes and it is assumed that these would not be duplicated by new infrastructure in the same corridor);
- Journey speed and reliability;
- The level of potential interactions with any A10 proposals;
- Whether the alignment involves the landfill site;
- The requirement for a new structure to cross the A14; and
- The extent to which they serve the secondary markets of the existing Waterbeach and Milton villages.

6.4.4. Identification of Better-Performing Options

Following the MDA, corridors were identified holistically, drawing together appropriate combinations of better-performing options and nodes in order to create coherent and mutually distinct corridors.

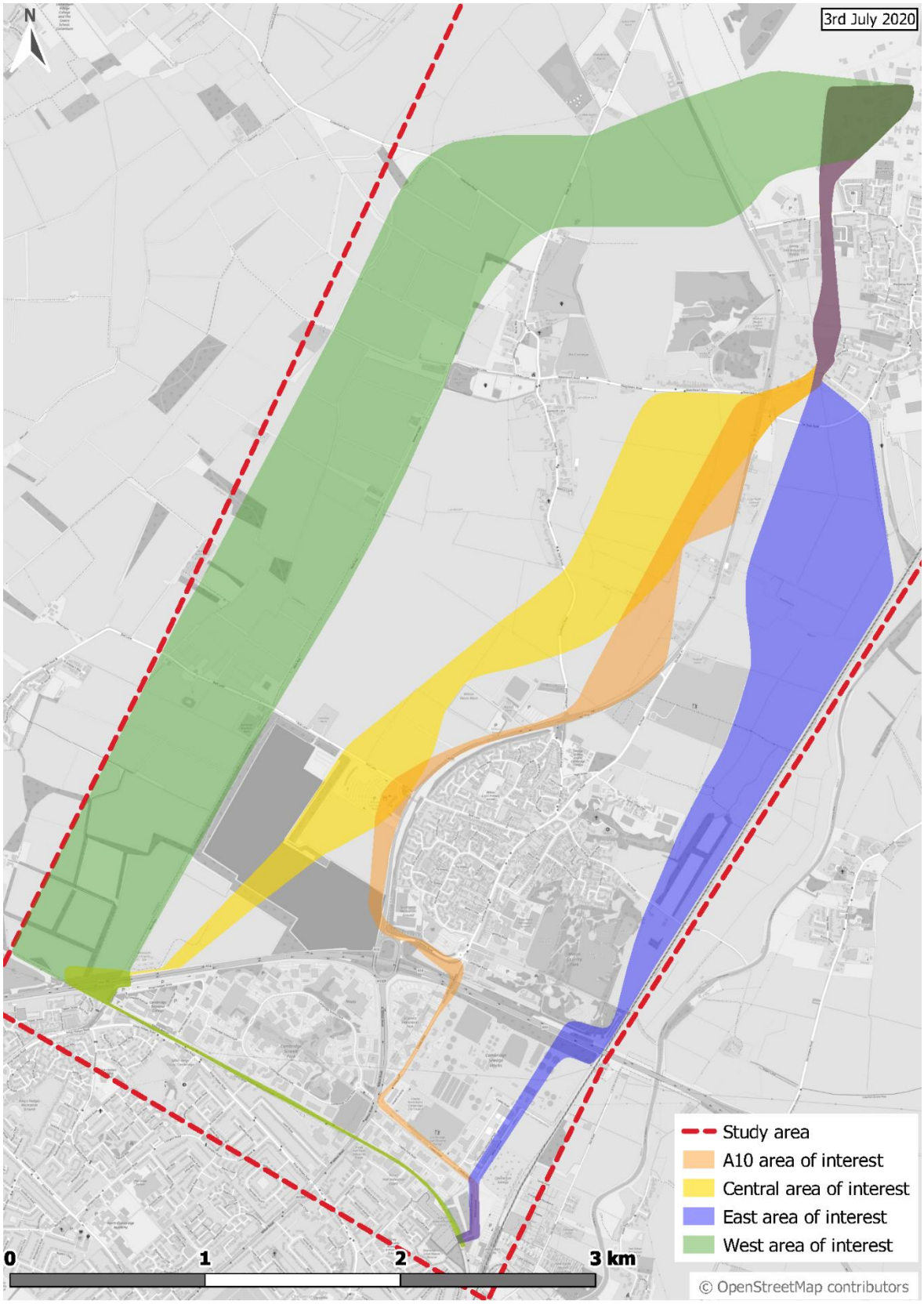
These better-performing options have been agreed with GCP as the ones to take forward to stakeholder and public engagement. They are outlined in Table 6-4 and shown in Figure 6-8. Other work will also take place to develop options for continuing the transitway from the centre of the New Town north of Waterbeach, including how to best serve the relocated Waterbeach Station and other areas. For this reason, the areas of interest shown in Figure 6-8 do not cover any areas beyond the centre of the New Town.

Table 6-4 - Corridor Options Taken Forward to Public Engagement

Option Name	Description	Key Option-Specific Issues
Western Option (Green)	The western option originates near Cambridge North Station and follows the CGB under the A14, then turns northeast and continues to the west of Mere Way. The route then bears east north of Landbeach and crosses the A10 at the proposed access roundabout to the New Town north of Waterbeach.	• Interaction with Mere Way Roman road • Interaction with A10 at the access roundabout
Central Option (Yellow)	**Short Term Route** The short-term option could be provided prior to the redevelopment of the NEC and would service the periphery of the CSP. This option originates near Cambridge North station and follows the CGB under the A14, where it then turns east and traverses the agricultural land between Landbeach and Milton. The route crosses the A10 southwest of Waterbeach at Cambridge Road, then bears north, crossing Denny End Road to the New Town north of Waterbeach. **Long Term Route** The long-term option could be provided following the redevelopment of the NEC, subject to agreement with the landowners. Instead of using the CGB, this route would use an offline route through the NEC, and would cross the A14 at a new crossing north of CSP. This would improve the route's ability to serve employees on site.	• Interaction with allotments at Cambridge Road, Waterbeach • Interaction with properties adjacent to allotments • Interaction with the landfill west of Milton • Interaction with A10 at staggered crossroads (A10, Car Dyke Road, Waterbeach Road), south west of Waterbeach
A10 Option (Orange)	The A10 option originates near Cambridge North station and travels along Cowley Road to Milton Road. From here, the route bears north and crosses the A14 at a new crossing near Jane Coston Bridge, then bears west to the south of Milton Tesco supermarket. The route crosses the northern arm of the Milton Interchange before bearing north to the west of the A10. The route crosses the A10 southwest of Waterbeach on Cambridge Road then bears north through to Denny End Road, and continues north to the New Town north of Waterbeach. There is potential for a more direct routing using a segregated alignment along Milton Road and through Milton Interchange. However, this is assumed to only be practicable if there were separate proposals for highway changes in this part of the A10 corridor that could enable such a routing. This possibility will be reviewed as the current A10 study progresses.	• Interaction with allotments at Cambridge Road, Waterbeach • Interaction with A10 at staggered crossroads (A10, Car Dyke Road, Waterbeach Road), south west of Waterbeach • Design of route where it crosses the A14 from the eastern side of NEC and A10 at Milton interchange

Option Name	Description	Key Option-Specific Issues
Eastern Option (Blue)	The eastern option originates near Cambridge North Station and bears north through the eastern side of NEC, crossing the A14 south of Milton Country Park. The route traverses the borders of the Country Park on the eastern side, before heading north to the west of the proposed sports lake development and east of the existing FootGolf area. The route reaches Waterbeach at Car Dyke Road, then continues through to Denny End Road, and continues north to the New Town north of Waterbeach.	• Interaction with NEC development • Interaction with the proposed Waterbeach Greenway, including the Greenway underpass of the A14 • Interaction with the sports lake complex • Interaction with residential properties and allotments on Cambridge Road in Waterbeach

Figure 6-8 - Plan of Corridor Options Taken Forward to Public Engagement



6.4.4.1. Summary of Better Performing Options in Relation to the Key Differentiators

Table 6-5 compares the identified corridors against the key differentiators outlined in section 6.4.3. Whilst the table compares the route corridors, this is simply to help show the key differences between them. It does not rank or assess the routes and therefore should not be considered as indicating any 'final preferred option'.

Table 6-5 - Corridors and Key Differentiators

Key Differentiators	West Route (Green)	Centre Route (Yellow)		A10 Route (Orange)	East Route (Blue)
		Short Term	Long Term		
Serves Waterbeach village	×	✓	✓	✓	✓
Serves Milton village	×	✓	✓	✓	✓
Serves NEC	✓	✓	✓	✓	✓
Additional walking and cycling capacity	×	✓	✓	✓	×
Interactions with A10 proposals	×	✓	✓	✓	×
Journey speed/ reliability	✓	✓	✓	×	✓
Relationship with potential Waterbeach Rural Travel Hub	✓	✓	✓	✓	✓
Traversing landfill	×	✓	✓	×	×
New A14 crossing	×	×	✓	✓	✓

In this table, ticks and crosses denote 'yes' and 'no' respectively. They are coloured red and green to show whether this is seen as a positive or a neutral/negative feature of each option.

7. Quick Wins and Complementary Schemes

This chapter explores potential quick wins and complementary schemes to improve walking, cycling, equestrian and public transport connectivity within the study area. These have been identified during the policy review, in the stakeholder workshop held on 27th November 2019 and in the course of assessing options during the sifting and more detailed assessment phases by the study team.

Each potential quick win or complementary scheme has been summarised in Table 7-1. Each of these will require further analysis to demonstrate the associated benefits and to confirm the ability to deliver 'quickly'.

Table 7-1 - Potential Quick wins and Complementary Schemes

Potential intervention	Committed, quick win or complementary?	How identified	Comments
Mere Way Cycleway implementation (s106)	Committed	Policy Review	The scheme enables a connection between Waterbeach and CSP via Mere Way and will be constructed after 150 dwellings are occupied in the New Town
Waterbeach Greenway implementation	Committed	Policy Review	The proposed Greenways scheme will be an effective link between Waterbeach and the eastern area of NEC and has an estimated delivery of 2024
A10 Cycle Route Upgrades (part of Urban and Civic development)	Committed	Policy Review	Additional walking and cycling links to and from the A10 could enhance this route
East-west walking and cycling links across Milton Road between the two sides of NEC	Complementary	Stakeholder workshop	Increased walking and cycling links between the east and west side of NEC decrease severance caused by Milton Road
Provision of walking and cycling links between Waterbeach and Horningsea	Complementary	Stakeholder workshop	Stakeholders suggested improved links between Waterbeach and Horningsea for local trips and onward journeys to the east side of Cambridge
Provision of walking and cycling links between Waterbeach and Cottenham	Complementary	Stakeholder workshop	Stakeholders suggested a link between Waterbeach and Cottenham to improve connectivity
Implementation of Cambridge South Station	Complementary	In this study	The implementation of Cambridge South Station will provide links for CBC staff and patients living within the Waterbeach area (including but not limited to the relocated Papworth staff) and NEC
Ensure existing cycle routes are maintained	Quick win	Stakeholder workshop	Stakeholders noted some existing cycle routes (e.g. along the River Cam) need maintenance. Improving the quality of these routes could increase walking and cycling mode share

Potential intervention	Committed, quick win or complementary?	How identified	Comments
Bus and rail timetable coordination	Quick win	Stakeholder workshop	Stakeholders suggested a coordinated timetable to encourage public transport travel for onward/longer journeys
Direct buses to/from Cambridge Biomedical Campus until Cambridge South Station is built	Quick-win	Internal workshop	As above, whilst Cambridge South Station is being built, bus connections should serve the travel markets and Cambridge Biomedical Campus in the interim period
Bus services between Waterbeach and Milton to NEC and Cambridge North railway station	Quick-win	Internal workshop	The provision of a shuttle bus service will enable sustainable commuting to NEC
Securing passive provision for the operation of services within NEC	Quick-win	Internal workshop	As the NEC masterplan is developed, it is recommended that GCP negotiate passive provision of operations within NEC to secure effective operations throughout the site
Travel Planning within the corridor	Complementary	Internal workshop	Travel Planning for all individuals is recommended, especially new residents and employees whose travel patterns are likely to change when they move
Additional walking and cycling links between CSP and the CGB	Complementary	Internal workshop	Increasing the permeability between the existing CSP site and the CGB would make walking and cycling journeys more direct and therefore more attractive
Review of cycle parking provision in employment areas within study area	Complementary	Internal workshop	Additional secure cycle parking that is easy to find makes cycle journeys more accessible and attractive
Review standard of bus stops within study area	Complementary	Internal workshop	All bus stops should be of a good standard (Real Time Passenger Information provision, sheltered seating area etc.) to make this mode more attractive
New bridge between Milton village and Park and Ride to accommodate cycle trips	Complementary	Internal workshop	A new bridge over the A10 between Milton and Milton Park and Ride would enable cycling over the A10. This bridge should be investigated regardless of the public transport route selected as it would enable east-west connections to/from Waterbeach Greenway, Milton, Milton Park and Ride, Histon and Impington, and the public transport route.

8. Conclusions and Recommendations

8.1. Corridors for Further Assessment

Based on a robust identification, sifting and assessment process, the better-performing options that are recommended to be progressed to SOBC stage are shown in Figure 6-8 and outlined in Table 8-1.

Table 8-1 - Summary of Corridors Taken Forward for Further Consideration

Option Name	Description
Western Option (Green)	The western option originates near Cambridge North Station and follows the CGB under the A14, turning northeast to the west of Mere Way, then bearing east north of Landbeach and crossing the A10 at the proposed access roundabout to the New Town north of Waterbeach.
Central Option (Yellow)	**Short Term Route** The short-term option could be provided prior to NEC's redevelopment and intensification to service the periphery of CSP. This option originates near Cambridge North station and follows the CGB under the A14, where it then turns east and traverses the agricultural land between Landbeach and Milton. The route crosses the A10 southwest of Waterbeach at Cambridge Road, then bears north, crossing Denny End Road and continuing to the New Town north of Waterbeach. **Long Term Route** The long-term option could be provided following the NEC's redevelopment and intensification and subject to agreement with the landowners. Instead of using the CGB, this route would use a redeveloped offline route through the NEC, and would cross the A14 at a new crossing north of CSP. This would improve the route's ability to serve employees on site.
A10 Option (Orange)	The A10 option originates near Cambridge North station and travels along Cowley Road to Milton Road. From here, the route bears north and crosses the A14 at a new crossing near Jane Coston Bridge, then bears west to the south of Milton Tesco supermarket. The route crosses the northern arm of the Milton Interchange before bearing north to the west of the A10. The route crosses the A10 southwest of Waterbeach on Cambridge Road then bears north through to Denny End Road, and continues north to the New Town. There is potential for a more direct routing using a segregated alignment along Milton Road and through Milton Interchange. However, this is assumed to only be practicable if there were separate proposals for highway changes in this part of the A10 corridor that could enable such a routing. This possibility will be reviewed as the current A10 study progresses.
Eastern Option (Blue)	The eastern option originates near Cambridge North Station and bears north through the eastern side of NEC, crossing the A14 south of Milton Country Park. The route traverses the borders of the Country Park on the eastern side, before heading north to the west of the proposed sports lake development and east of the existing FootGolf area. The route reaches Waterbeach at Car Dyke Road, then continues across Denny End Road to the New Town.

8.2. Quick Wins and Complementary Schemes

A list of quick wins and complementary schemes should be considered in conjunction with this project and have been included within Table 7-1. A number of quick wins are focused on improving walking and cycling links between the travel markets and existing public transport services that enable mode shift from private vehicles prior to any potential transit scheme being implemented.

Additional links between Waterbeach and adjacent villages including Landbeach, Cottenham and Horningsea improve connectivity between these areas, which in turn increase the catchment of any new public transport scheme that serves the New Town.

It is recommended that GCP considers the potential quick-wins in further detail.

8.3. Next Steps and Recommendations

GCP is recommended to:

- Take forward, for further assessment, the four corridor options identified in Table 8-1 and Figure 6-8, on an in-principle basis subject to the further work identified below;
- Carry out the further work identified below, to better understand certain key uncertainties and their implications for the relevant corridors:
  - More detailed assessment of what is feasible in and around the landfill site. This will particularly help to understand the feasibility of the central (yellow) and A10 (orange) corridor options and the potential design options within each;
  - Continued engagement with North East Cambridge, to understand the potential (in the near-term or the long-term) for a public transport corridor through the Science Park to maximise connectivity and attractiveness to users. This particularly affects the definition of the central (yellow) option, including whether both short-term and long-term options are required, and the potential design options available for each; and
  - Coordination with the work being undertaken in parallel on potential options for A10 highway enhancements, in order to understand both the potential interactions and any opportunities for synergy. This particularly affects the constraints and opportunities for the A10 (orange) option and the potential design options within it.
- In the light of the further work listed above, confirm or amend the four corridor options;
- Undertake further public and stakeholder engagement in July 2020 to gather views on the corridor options;
- Subject to the results of that engagement, develop a Strategic Outline Business Case (SOBC) for the scheme; and
- In parallel with the above, consider further the potential quick wins and complementary measures identified in Chapter 7.

Appendices

Appendix A. Summary of Policy Background

Relevant Policy	Key Developments/Schemes	Relevance to or potential impacts on corridor
South Cambridgeshire Local Plan – September 2018		
SS/4: Cambridge Northern Fringe East and Cambridge North Railway Station	• Development of Chesterton sidings around Cambridge North station • Redevelopment of employment centres	• Housing, employment and community amenities in southern part of study area • Demand generator for trips originating in Waterbeach New Town and from elsewhere on the corridor
SS/6: Waterbeach New Town	• Housing, employment and community amenities on previous barracks site north of Waterbeach • Will include relocated railway station, Park and Ride on the A10, a new segregated bus link to Cambridge, cycling and walking routes within the development and direct and segregated routes to north Cambridge, surrounding villages and the Cambridge Research Park, and highway improvements	• New development in northern part of study area • Trip generator for travel along the corridor
CC/8: Sustainable Drainage Systems	• Development proposals must incorporate appropriate sustainable surface water drainage systems appropriate to the nature of the site	• SuDS has been successfully incorporated into previous transport projects, such as Greener Grangetown in Cardiff and can form part of a network of green infrastructure
NH/6: Green Infrastructure	• Council will encourage proposals that reinforce, link, buffer and create new green infrastructure	• Transit corridors can form a useful part of green infrastructure (wildlife/biodiversity corridor)
NH/11: Protected village amenity	• Protected Village Amenity Areas are identified on the Policies Map where development will not be permitted within or adjacent to these areas if it would have an adverse impact on the character, amenity, tranquillity or function of the village.	• There are some protected village amenity areas in the study area

Relevant Policy	Key Developments/Schemes	Relevance to or potential impacts on corridor
NH/14: Heritage assets	Development proposals will be supported when: • They sustain and enhance the special character and distinctiveness of the district's historic environment including its villages and countryside and its building traditions and details; • They create new high-quality environments with a strong sense of place by responding to local heritage character including in innovatory ways.	• There are some heritage assets that fall under this policy in the study area
E/1 New employment provision near Cambridge - Cambridge Science Park	• Increasing densification of an employment area in the southern part of the study area • Proposals will need to be compliant with this, particularly in relation to design and transport	• Demand generator for trips along the corridor
E/9 Promotion of clusters	• Employment land allocation for cluster development, including the Cambridge Science Park	• Demand generator at the southern end of the study area
SC/1 Allocation for open spaces	• The following sites are allocated to meet local need for open space: Land north of former EDF site, Ely Road, Milton - 3.1ha	• This site falls within the study area
TI/1 Chesterton Rail Station and Interchange	• Land safeguarded for development at Chesterton Sidings, near Cambridge North Railway Station	• Located at the southern end of the study area • Demand generator
TI/2 Planning for sustainable travel	• Supports new cycling and walking routes that connect to the existing network to strengthen connections between villages, Cambridge and the wider countryside • Supports protection and improvement of existing cycling and walking routes • Supports secure, accessible and convenient cycle parking • Supports improvements to public and community transport	• Guidance for sustainable travel in the corridor

Relevant Policy	Key Developments/Schemes	Relevance to or potential impacts on corridor
Cambridge Local Plan – October 2018		
Policy 2: Spatial strategy for the location of employment development	• Proposals that help reinforce the existing high technology and research clusters of Cambridge will be supported	• The Cambridge Science Park is designated as one of these clusters • Demand generator for the corridor
Policy 5: Strategic transport infrastructure	• Promoting greater pedestrian and cycle priority though and to the city centre, potentially incorporating public realm and cycle parking improvements • Promoting sustainable transport and access for all to and from major employers, education and research clusters	• Guidance for strategic transport in the study area
Policy 7: The River Cam	• Enable and propose, where possible, opportunities for greater public access to the River Cam	• The River Cam is just outside the study area but connections identified in this study could also offer further linkages with the River Cam
Policy 15: CNFE and new railway station	• Ensure that appropriate access and linkages, including for pedestrians and cyclists, are planned for in a high quality and comprehensive manner	• Located at the southern end of the study area • Demand generator for travel along the corridor
Policy 80: Supporting sustainable access to development	Support public transport, walking and cycling to, from and within a development by: • giving priority to these modes where there is conflict with cars • conveniently linking the development with the surrounding walking, cycling and public transport networks • prioritising networks of public transport, pedestrian and cycle movement so these are the best and safest means of moving around Cambridge • safeguarding existing and proposed routes for walking, cycling, and public transport, including the Chisholm Trail, from development that would prejudice their continued use and/or development	• Guidance for sustainable travel in the study area

Relevant Policy	Key Developments/Schemes	Relevance to or potential impacts on corridor
Policy 82: Parking management	• Car-free and car-capped development is acceptable where there is good, easily walkable and cyclable access to a district centre, where there is high quality public transport accessibility and where the car-free status can be realistically enforced by planning obligations/on-street controls	• Parking (car and cycle) standards that apply in part of our study area are found in Appendix L of the Cambridge Local Plan
Cambridgeshire and Peterborough Interim Local Transport Plan – June 2017		
This Interim Local Transport Plan (LTP) was produced in 2017 after the formation of the Cambridgeshire and Peterborough Combined Authority. While a new LTP is being developed, the CPCA has adopted the existing LTP for Cambridgeshire and its accompanying Long-Term Transport Strategy. These are covered in the rows below.		
Cambridgeshire Local Transport Plan 2011-2031 – July 2015		
Objective 3: Managing and delivering the growth and development of sustainable communities	• Discourage use of cars where alternatives exist and encourage use of sustainable means of transport such as walking, cycling and public transport • Facilitate active travel with investments in footpaths and cycleways • Influence the design of new developments to promote road safety and encourage travel by foot and cycle	• Objectives for developing sustainable communities within the study area

Relevant Policy	Key Developments/Schemes	Relevance to or potential impacts on corridor
Cambridgeshire Local Transport Plan 2011-2031: Long Term Transport Strategy – July 2015		
Page 3-2	• Extend the busway network to serve major new developments and employment sites • Develop high quality public transport corridors along key routes with priority at key junctions, helping to reduce journey times • Implement new and improved passenger transport interchanges and hubs with parking, cycle parking, high quality waiting facilities, passenger information and facilities for local feeder services, and that are easily accessible by pedestrians and cyclists • Build the case for opening new railway stations and railway lines, and for improvements to existing stations • Support Network Rail / Department for Transport (DfT) plans for improved rail frequencies and faster journey times • Support new track infrastructure, electrification of existing railway lines and the provision of enhanced rolling stock • Improve sustainable access to railway stations e.g. cycle routes, bus routes and cycle parking facilities	• Public transport strategy within the study area

Relevant Policy	Key Developments/Schemes	Relevance to or potential impacts on corridor
Page 4-7	Schemes and programme for development of Waterbeach Barracks and associated transport infrastructure: • Waterbeach Station relocation, £25m • A busway link from Waterbeach Station and town centre to north Cambridge including a fully segregated crossing of the A14 Trunk Road, £32m • A10 corridor P&R site, north of Waterbeach, served by new busway link to Cambridge. Alignment to be determined, £8m • Additional capacity for general traffic between the northernmost access to the new town and the A14, £45M • A14/A10 Milton interchange improvements £40M • Delivery or funding of any measures required to mitigate the traffic impact of the new town on Horningsea, Fen Ditton, Milton and Landbeach, £TBD • A comprehensive network of high-quality pedestrian and cycle routes linking the town with key destinations in Cambridge and the surrounding villages, £12M	• These are specific aspirations to be considered in this study

Relevant Policy	Key Developments/Schemes	Relevance to or potential impacts on corridor
Cambridgeshire and Peterborough Draft Local Transport Plan – June 2019		
Local Transport Plan objective, pages 12-13	• Housing: Support new housing and development to accommodate a growing population and workforce, and address housing affordability issues • Employment: Connect all new and existing communities sustainably so all residents can easily access a good job within 30 minutes by public transport, spreading the region's prosperity • Business and tourism: Ensure all of our region's businesses and tourist attractions are connected sustainably to our main transport hubs, ports and airports • Resilience: Build a transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability • Safety: Embed a safe systems approach into all planning and transport operations to achieve Vision Zero – zero fatalities or serious injuries • Accessibility: Promote social inclusion through the provision of a sustainable transport network that is affordable and accessible • Health and wellbeing: Provide 'healthy streets' and high-quality public realm that puts people first and promotes active lifestyles • Air quality: Ensure transport initiatives improve air quality across the region to exceed good practice standards • Environment: Deliver a transport network that protects and enhances our natural, historic and built environments • Climate change: Reduce emissions to as close to zero as possible to minimise the impact of transport and travel on climate change	• The objectives for this study will support the objectives of the draft Local Transport Plan
Local Strategies – North towards Ely p.102	• Comprehensive and reliable public transport is key to building sustainable travel patterns and a successful thriving community in Waterbeach New Town • CPCA will support the GCP in the delivery of a new segregated public transport corridor, integrated with a new travel hub with parking, to provide a genuine alternative to the private car • This will form first phase of the CAM network, operated by high quality electric vehicles, prior to the opening of tunnels under the city centre.	• CPCA supports segregated public transport corridor, relocation of Waterbeach Railway Station and Waterbeach Greenway

Relevant Policy	Key Developments/Schemes	Relevance to or potential impacts on corridor
Transport Strategy for Cambridge and South Cambridgeshire – March 2014		
Policy TSCSC 7: Supporting sustainable growth	• New development will make provision for integrated and improved transport infrastructure to ensure that most people have the ability to travel by foot, bicycle or by passenger transport in line with specified modal split targets where relevant. • Access by walking, cycling and public transport will be maximised in all new developments, ensuring that planning contributions are sought for transport improvements where appropriate.	• Guidance for sustainable transport within the study area
Waterbeach Supplementary Planning Document – February 2019		
Relevant Principle/Issue	• A user hierarchy that prioritises sustainable modes of transport • Create walkable neighbourhoods • Create an environment for cycling • Create an environment for equestrians • Provide access to high quality public transport facilities • Promote residential access • Minimise impact on the surrounding highway network	• These principles will be applied to sections of the public transport corridor that lie within the Waterbeach SPD area • See also the transport strategy diagram reproduced in the main body of the OAR
North East Cambridge Area Action Plan (not yet published)		
This document is not yet available but will provide guidance for the standards of public transport within NEC at the southern end of the study area and provide a spatial framework that the public transport corridor will connect with. The accompanying Transport Evidence Base is also due to be published shortly.		

This table was correct at the time of compilation. Key subsequent updates are provided in the main text of the report.

Appendix B. Summary of Previous Studies as Evidence Base

Year	Title and author	Evidence base	Key findings
2009	**Bus Strategy – Bus Route Option Study (Capita Symonds)**	• Denny St Francis Eco-town Transport Strategy • Land ownership • Site reconnaissance surveys, Ordnance Survey data, aerial photographs	• Commissioned by RLW to assess the options for a busway between the new town of Waterbeach and Cambridge. • The study area was divided into east-west tranches comprising different parts of Waterbeach and the area between Waterbeach and the A14 • The preferred option was through the farm fields east of Denny End Industrial Estate, to the west of the Sport Lakes complex, across the A10 at the junction with Ely Road, and across the fields and restored landfill to the existing A14 underpass at Mere Way
2012	**A10 Transport Corridor Constraints Study (LDA)**	• GIS data, Tree Preservation Orders • Heritage study • Ecology study	• Assessed constraints in the corridor between Waterbeach and Cambridge • Built upon the 2009 Capita Symonds study, and also considered the realignment of the A10 • Assessed an area 100m either side of the A10 and included the A14 underpass at Mere Way
2014	**Waterbeach Busway Options Study (WSP / Clewlow)**	• Land ownership records, including council owned lands and property	• Further assessed the preferred busway option from the 2009 Capita Symonds study • A larger study area was assessed than the 2009 study • The preferred option from the 2009 study remained the highest scoring of the options assessed • Slight changes were made to the alignment of the preferred option so that where possible the route passed through council land
2016	**A10(N) Corridor Constraints Study (Mott MacDonald)**	• Planning records • Mapping of the following constraints: - Green belt - Agricultural land - Heritage/archaeological - Environmental and ecological designations - Townscape and landscape impact - Amenity considerations - Flooding and drainage - Physical considerations (eg. contamination, land stability)	• Commissioned by Cambridgeshire County Council, South Cambridgeshire District Council and Cambridge City Council • Assessed the existing environmental, physical and planning constraints within an adjacent to the Waterbeach to Cambridge corridor • Assessed three corridors: west (covering Mere Way and the Roman Road), central (A10 corridor) and east (along the railway line and through Waterbeach) • Constraints in the west and central corridor could be overcome through route alignment and detailed design incorporating mitigation measures, however the east corridor would require further investigation as there are more widespread constraints

2018	**Ely to Cambridge Transport Study: Preliminary Strategic Outline Business Case (January 2018) (Mott MacDonald)**	Evidence Base Report accompanies the Strategic Case, which includes evidence on: • Populations commuting into Cambridge • House price and sales trends in Cambridge • Indices of multiple deprivation • Rail passenger growth • Existing peak period bus journey time delays • Peal traffic flows • Traffic delays during school term times • Recent and forecast population growth • Forecast traffic flow and junction delay changes resulting from development • Forecast distribution of trips on A10 by origin, with and without development • Forecast changes in traffic levels on routes parallel to A10, with development • Forecast journey time changes on A10, with development • Forecast changes in car mode share, with development • Forecast traffic, mode share and journey time impacts of the modelled improvement packages	The Strategic Case set out the issues and opportunities in the study area that demonstrated a need for intervention. These included: • Cambridge's role as the engine of the Cambridgeshire economy • Escalating demand for housing and the city's growing labour catchment • High and growing levels of rail demand, but with performance issues on key corridors • Journey time delays for buses, particularly in the AM peak • Relatively low, and declining, patronage at the Milton park-and-ride site • Relatively high levels of cycle commuting, corresponding to locations where high-quality infrastructure is provided, but the lack of cycle routes serving north-south journeys was a key weakness of the study corridor • Very significant highway congestion, which can extend almost the full length of the A10 from Ely to Cambridge in the AM peak and vice versa in the PM peak. • Key development areas included Cambridge Northern Fringe East, Cambridge Science Park, and north of Waterbeach. • Traffic levels were anticipated to grow, thus exacerbating the existing issues. Travel demand on the A10 and surrounding corridors would increase. A do-minimum scenario (2031, with developments, but without mitigation) was modelled. It found that: • There would be further traffic growth on the A10 but the main impact would be an increase in traffic on nearby routes. This was because the effective capacity of the A10 had already been reached, even without the developments, and the new trips from the development sites would be at the expense of other existing traffic which would be displaced to other routes. (This also means some sections of the A10, north of Waterbeach, would see reduced traffic levels, as the longer-distance traffic would be displaced but the development traffic would not be primarily using those particular sections.) • Journey times would increase on key routes • Car mode share would fall within the study area, due to the concentration of developments in locations close to Cambridge with good public transport and walking and cycling access. However, there would still be net generation of traffic. The study modelled the impact of five improvement packages for the corridor:

Year	Title and author	Evidence base	Key findings
		• Multi-criteria appraisal of the modelled improvement packages Other parts of the SOBC include: • Cost estimates for the modelled improvement packages • Economic appraisal of the modelled improvement packages	5. **Mode-shift (DS1):** Minimal highway network improvements, relocated Waterbeach station, segregated public transport links between the new town at Waterbeach and Cambridge, comprehensive pedestrian and cycle network, parking restraints and travel planning measures at major development sites 6. **Junction+ (DS2):** Same as DS1, plus improvements to provide additional capacity at A10 junctions between Ely and Cambridge 7. **North-dual (DS3):** Same as DS1 and 2, plus dualling the A10 north of Waterbeach to Ely 8. **South-dual (DS4):** Same as DS1 and 2, plus dualling the A10 between Waterbeach and the A14 Milton interchange 9. **Full dual (DS5):** DS1 and 2, plus dualling the A10 between Ely and the A14 Milton interchange It found that while the mode-shift options without highway improvements provided additional travel capacity and had significant benefits, they did not substantially address the congestion and traffic displacement issues identified. Options with highway improvements were more effective in addressing these issues. The best value for money was found with DS2. However, none of the packages achieved the objectives to maintain traffic at or below 2011 levels. All five packages delivered a car mode share reduction, compared to the do-minimum, with the mode-shift package (DS1) delivering the greatest reduction, and the full-dual package (DS5) the least. The study recommended a three-stage strategy of: • Policy, planning and regulation interventions, based around a demand-management approach and development trip budgets • Delivery of multi-modal ‘quick wins’ comprising both non-car-based service / infrastructure enhancements and active parking restraint, plus a sequence of prioritised on and off-line localised carriageway improvements to create capacity for additional trips and manage potential re-assignment of trips onto less suitable routes. This strand would include (among other things) early progression of the segregated transport corridor from Waterbeach to Cambridge’s Northern Fringe. • Wider highways interventions involving increased carriageway capacity. This might be in the corridor itself, or on an alternative corridor, or potentially through improvements to both.

2018	**Ely to Cambridge Transport Study: Strand 2 New Town North of Waterbeach Transport Report (1 February 2018) (Mott MacDonald)**	• Existing transport network in and around the new town location • Existing highway congestion, in terms of percentage journey time increases compared to free-flow • The proposed quantum of development Do-minimum (with development, no mitigation) traffic forecasts: • Forecast development trip generation • Forecast trips to/from the new town by mode and destination • Distribution of development traffic • Changes in traffic flow and junction delays • Relative contribution of new town and CFNE/CSP development traffic to the overall level of development traffic, by link • Journey times on the A10, comparing free-flow, without development and with development Do-something (with development and South-Dual package) traffic forecasts: • Distribution of development traffic • Changes in traffic flow and junction delays • Journey times on the A10	This report focused on the transport needs, trip generation and impacts of the proposed new town, in the context of other major developments and the overall SOBC. The do-minimum traffic modelling found that the new town represented the majority of development flow contributions on the A10 and connecting routes to the north. Development flows from CNFE and CSP represented the majority contribution on the A14 and M11 and mostly within Cambridge. Milton interchange was the connecting point between these, as it combined the impacts from each. The overall conclusion for the proposed new town was that significant mitigation measures would be required to enable the development to function effectively without causing undue impact on surrounding transport networks. The study went on to look at the impact of the South-Dual (DS4) package on development travel behaviour and surrounding network performance. Compared to the do-minimum, it forecast: • A slight increase in person trips during peak periods – due to trips being re-timed into peak hours due to the additional network capacity • A reduction in car mode share • An increase in external car trips, due to this increase in person trips. However, due to the decreased car mode share this increase in car trips was less than it otherwise would have been. The study considered that this underlined the importance of the interventions including a strong suite of non-car measures • An improvement in A10 journey times, mitigating the majority of the increase in journey times seen in the do-minimum. Overall, the results suggested the package tested would help to mitigate the main local impacts of the new town development. The greatest benefits to the development were seen in the upgrading of the A10 and Milton Interchange, which would help to reduce pressure on parallel routes and on the A10 itself. The conclusions were as follows: Given its proximity to the economically strong centre of Cambridge, the proposed new town north of Waterbeach provides opportunity for many new trips to be made in the area by non-car modes. However, with already congested A10 being the only means of accessing the development by highway, it is nonetheless predicted that 10,000 new homes plus ancillary development in this location will generate substantial flow and performance impacts on this key route. The study therefore shows that the non-car mode improvement options considered for the study area are essential for the sustainable delivery of this development and that they should be implemented from the outset of development construction and completed before

Year	Title and author	Evidence base	Key findings
			more than 1,500 homes are built. It is proposed that these measures should be funded by the new developments which necessitate and benefit from them. However, the study also shows that these measures will not be sufficient in themselves to mitigate the full development's impact on the A10 and on parallel routes and that potentially significant highway intervention will also be required. This, as a minimum, should comprise improvements to existing junctions along the routes, including at Milton interchange, but in the longer term is likely to also involve dualling at least the southern section of the A10, while locking in traffic flow reductions on parallel routes. The funding for these measures will be drawn from multiple sources according to the range of beneficiaries, including new developments and wider public funding streams. Lastly, it is noted that these findings should be reviewed in the event that other schemes come forward that are not within the study area but which could affect it, such as a new highway link between the A47 and the M11. Testing shows that such schemes could potentially reduce the highway intervention requirement within the study area.

Appendix C. Option Sifting Table

New town North of Waterbeach to North of Cambridge public trans
Option long-list and sifting results

Atkins ref: 519292 Atkins file location: P:\GBCBA\HandT\CQ\Projects\5192922 Waterbeach-Cambridge

See Options Map tab for location of links and results of sifting workshop

South of A14
A14 to north of Milton
Milton to south of Waterbeach
Through Waterbeach (or equivalent level)
Through new development

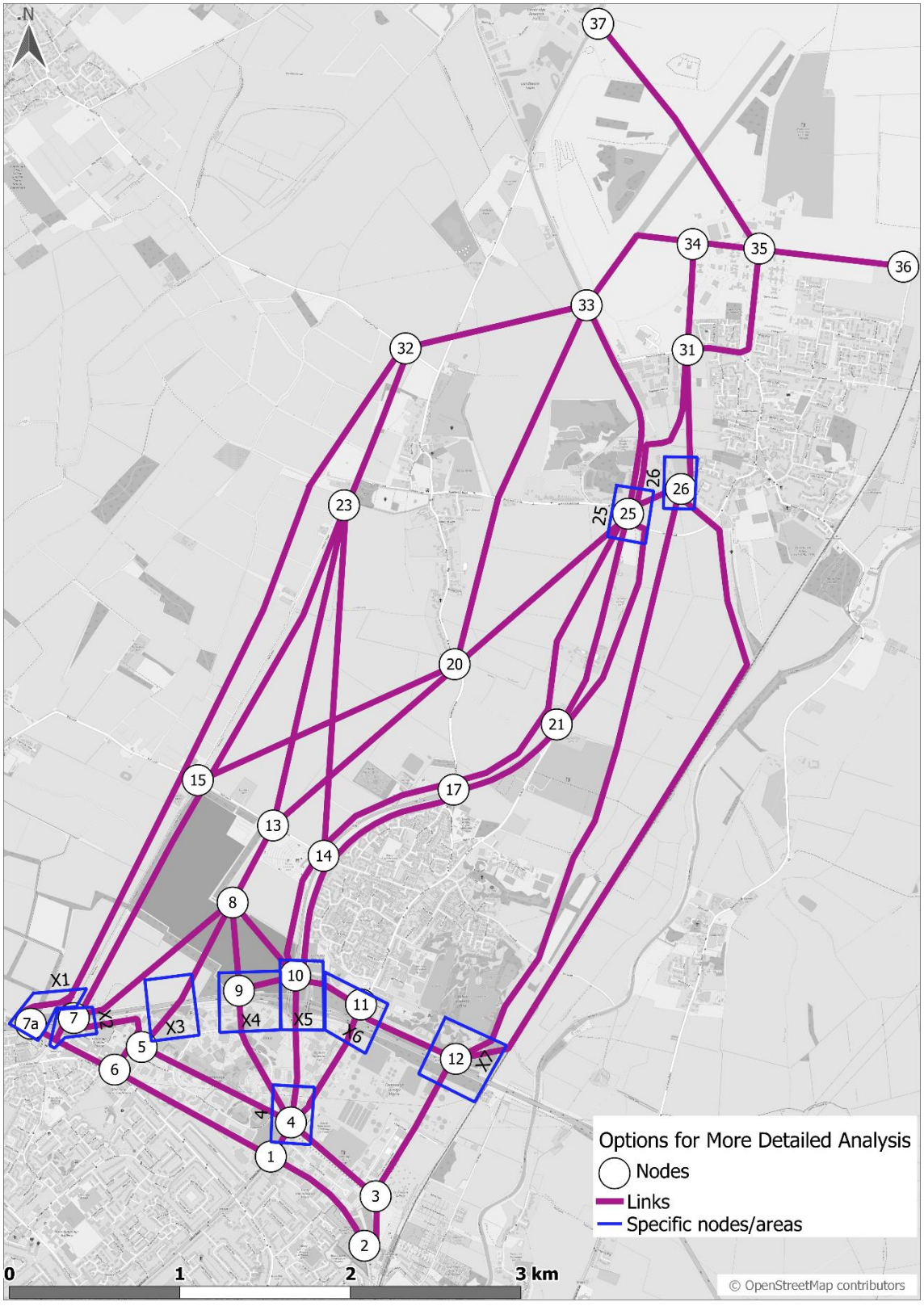
Option details						Sifting criteria					
ID (see map)	**Offline / Online**	**Description**	**Integration of NMU**	**Benefits**	**Potential issues/constraints**	**Effectiveness - capacity - reliability - number of journeys - NMU journeys**	**Feasibility - engineering constraints - environmental constraints - planning requirements**	**Acceptability - stakeholder view - policy alignment**	**Initial sift outcome**	**Final decision (if different)**	**Overall Grade All green - Green Mix of green & amber - Amber Any red - Red**
1-2	Offline	CGB from Cambridge North station to Milton Road	CGB bridleway	Existing infrastructure Allows a connection to Milton Road bus priority schemes to city centre	CGB capacity?				N/A	In	
1-4	Either	Milton Road from CGB to transport hub in centre of NEC	Space constrained on Milton Road, routes exist as SUP or buslane	Serves routes to city centre Serves centre of NEC including proposed transport hub Ties in with Milton Road bus scheme	Online solutions would be affected by congestion of Milton Road, but there is road space for continuing the Milton Road bus lanes in this section				In		
1-6	Offline	CGB from Milton Road to existing A14 underpass	CGB bridleway	Existing infrastructure Allows a connection to Milton Road bus priority schemes to city centre	CGB capacity?				N/A	In	
2-3	Online	Along Cowley Road and Milton Avenue	Existing Milton Avenue cycleway	Cowley Road potentially main street in CFNE (awaiting AAP for confirmation of proposed urban design): would connect into this town centre	Cowley Road potentially mains street in CFNE: an online route through this area might suffer reliability issues			Would require a strong argument for duplicating CGB infrastructure	In		
2-6	Offline	CBG from near Cambridge North Station to east end of CSP	Existing CGB bridleway	Existing infrastructure	Is an east-west alignment through NEC, however does not pass through centre of CSP or CFNE				In		
3-4	Online	Along Cowley Road to Milton Road	Existing Milton Avenue cycleway	Cowley Road potentially main street in CFNE (awaiting AAP for confirmation of proposed urban design): would connect into this town centre	Cowley Road potentially main street in CFNE: an online route through this area might suffer reliability issues Any options parallel but not using the CGB would have to make a strong argument for new infrastructure			Would require a strong argument for duplicating CGB infrastructure	In		
3-12	Mixed	Online along Milton Avenue then offline alongside Waterbeach Greenway alignment	Proposed Greenway route	Could tie in with Greenway A14 underpass Greenway alignment beside the railway has been found to be feasible, could be extended to transitway as well Serves NEC and is able to connect to Cambridge North	Alignment with railway potentially concentrates public transport corridors in too small an area Aggregates yard not being relocated as part of NEC development at this stage – could pose an issue with transport trucks along Milton Avenue This section of Greenway is designated “Phase 2” – not sure of timeline on that (may not know until February)		Coordinate with Greenway	Requires cooperation with CNFE and their emerging masterplan	In		
4-5	Either	Link through CSP: alignment unknown at this stage and will depend on emerging masterplan for regeneration of CSP. Could be on the loop road, on a segregated transitway, or on a realignment of the CGB, or a combination of the above	If online: use existing SUP around CSP If offline: incorporate new NMU route into design	Puts transitway in the heart of the CSP, one of the major destinations and demand drivers	CSP attitude towards a transitway through their land is unknown and potentially unfavourable. Would require new infrastructure as opposed to using existing CGB just to the south	Milton Road crossing would have to be a dedicated bus crossing		Requires cooperation with CSP and their emerging masterplan	In		
4-9	Either	Link from Milton Road to ex landfill site using a new crossing of the A14, through the CSP. Alignment in CSP yet to be determined and will depend on emerging masterplan for regeneration of the site. Could be on the loop road, a segregated transitway, or a combination.	If online: use existing SUP around science park If offline: incorporate new NMU route into design	Links directly to CSP	Ex landfill land potentially a constraint, depending on contamination, gas pipes, etc New crossing required, with associated costs and complexity Depends on emerging masterplan for CSP	Milton Road crossing would have to be a dedicated bus crossing	Landfill Big bridge	Requires cooperation with CSP and their emerging masterplan	In		
4-10	Offline	Flyover Milton Interchange and use central reservation along Milton Road	Space constrained on Milton Road, but parallel route exists via JC bridge	Direct, passes between CSP and CNFE An on-road, in-corridor option needs to be considered at this stage	Would only be possible as an offline option as there is no capacity for any further online routes through MI. This may rule out this option based purely on feasibility. Does not link east-west in NEC, but can connect to schemes that do.		Agree that feasibility is an issue, however keep in for now	HE	Out	In	
4-11	Mixed	Link from Milton Road to Cambridge Road roundabout in Milton using a new crossing of the A14, potentially on the same alignment as the Jane Coston bridge Depends on proposals for CFNE	Chance to upgrade JC bridge at the same time to increase capacity on this route	Land between Cambridge Road and A14 is an A14 works compound, so potentially available as landing pad for new bridge Potential to increase capacity of JC bridge by making new bridge with C&W This route runs alongside Waterbeach Greenway Phase 1	Cambridge Road roundabout probably at or nearing capacity. Options from this point are constrained by Milton roads, MCP, the A10 and the A14 New crossing required, with associated costs and complexity Depends on proposals in CFNE				In		
5-6	Online	Link from CGB to east access of CSP along Kings Hedges Drive	Space on western verge for segregated path	Route accesses CSP	May suffer from congestion from traffic accessing CRC and CSP				In		
5-7	Online	Link from east access of CSP to existing A14 underpass using Kings Hedges Drive	Space on southern verge for segregated path	Route accesses CSP Potential to be offline if parking configuration is changed for CRC	May conflict with parking for CRC, and uses an access to CSP that is congested				In		
5-8	Offline	Link from CSP to south of MPR via new A14 crossing (NC1)	Would include maintenance track	Direct access to CSP	Ex landfill land potentially a constraint, depending on contamination, gas pipes, etc New crossing required, with associated costs and complexity CSP attitude towards a transitway through their land is unknown				In		
6-7	Offline	Using CGB and Mere Way bridleway to access exiting A14 underpass	Existing CGB bridleway, would need to upgrade Mere Way bridleway	Uses existing CGB	Would need to pave Mere Way bridleway				In		
7-8	Offline	Route from existing A14 underpass across field and ex landfill site to south of MPR	Would include maintenance track	Uses existing underpass	Potentially less direct as the route is doubling back on itself Possible constraints from landfill site		Landfill		In		
7-23a	Offline	Parallel to Mere Way (Roman road, s106 cycleway) but offset to west	S106 Mere Way cycleway	Cycleway along Mere Way as part of the s106 agreement would provide NMU component Very straight route along a known corridor Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton market Potential site of archaeological significance (however paving of Mere Way for the cycleway indicates this may not be an issue) Farm access/severance would need to be considered	Any Mere Way option misses Milton, but Milton is not necessarily one of the markets - 'nice to have'			In		
7-23b	Offline	Along Mere Way	S106 Mere Way cycleway	Very straight route along a known corridor	Would potentially be constrained by hedgerows Mere Way s106 cycleway would need to be relocated Farm access/severance would need to be considered	Any Mere Way option misses Milton, but Milton is not necessarily one of the markets - 'nice to have'			Out		

7-23c	Offline	Parallel to Mere Way (Roman road, proposed s106 cycleway) but offset to the east	S106 Mere Way cycleway	Cycleway along Mere Way as part of the s106 agreement would provide NMU component Very straight route along a known corridor Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton market Potential site of archaeological significance (however paving of Mere Way for the cycleway indicates this may not be an issue) Farm access/severance would need to be considered	Any Mere Way option misses Milton, but Milton is not necessarily one of the markets - 'nice to have'			In		
8-9	Offline	Link through ex landfill from south of MPR to north of new A14 crossing	Would include maintenance track	Provides a direct link from MPR that avoids MI	Ex landfill land potentially a constraint, depending on contamination, gas pipes, etc		Landfill		In		
8-10	Offline	Link through ex landfill from south of MPR to MI	Would include maintenance track	Link to MI that avoids A10	Any MI option would need to be completely offline, with corresponding cost and complexity involved Ex landfill land potentially a constraint, depending on contamination, gas pipes, etc		Landfill		In		
8-13	Offline	Link from Butt Lane down west side of MPR and relocated police station	Would include maintenance track	Avoids A10 and is closer to Milton and MPR than Mere Way	All options to the south would need to cross the ex landfill site, which may be a constraint		Landfill		In		
9-10	Offline	Link from A10/MI to point north of new A14 crossing	Would include maintenance track	Would allow travel along the A10 and associate directness without need to negotiate MI	Still is close enough to MI that it would need to be completely offline. New slip lane from A14 to A10 would need to be considered		Landfill		In		
10-11	Either	Link from MI to Cambridge Road roundabout, Milton	Possibly space constrained, A14 interchange poses a barrier	Land potentially available for offline option Accesses Milton and associated market	This section of Cambridge Road may be congested, so best option would be offline, with corresponding cost and complexity.		Landfill Maize Maze access relocated	If offline	In		
10-14a	Offline	Link from MI to Butt Lane: aligned to A10 but offset to west	Would include maintenance track	Direct, close to Milton, accesses MPR	Landfill site a possible constraint, would need to interface with plans for new police station and would require reconfiguring of MPR		Landfill		In		
10-14b	Online	Dependent on offline A10 dualling: old A10 gains bus priority	Possibly space constrained, there is room on west side of A10	Direct, close to Milton, accesses MPR	Dependent on a) A10 dualling and b) new A10 alignment is different to existing A10				Out		
10-14c	Online	Bus priority on existing A10, with the assumption that there is either no dualling, or the dualling isn't offline	Possibly space constrained, there is room on west side of A10	Direct, close to Milton, accesses MPR	Capacity limits on existing A10, CPCA potentially concerned about increased capacity from dualling being given entirely to bus priority.				Out		
10-14d	Offline	Link from MI to Butt Lane: aligned to A10 but offset to east	Possibly space constrained, there is room on west side of A10 instead of using east side	Direct, close to Milton, accesses MPR Corridor between housing and A10 is fairly wide, generally 35-45m, except one pinch point of 24m with culvert under A10 on northeast side of Sycamores Rec	Potential constraint with "village amenity" area in green space to east of A10 Could face opposition from residents who would back on to the transitway, however they do currently back on to the A10 so adequate noise/lighting mitigation may be in place		Buildability Services	Depending on rec ownership	In		
11-12	Offline	Connection from Cambridge Road roundabout, Milton to railway line along south side of MCP	Possibly space constrained but parallel routes exist through MCP	Generally ~18m wide, allows route to avoid central Milton but still accessing Milton market	Some constraints with industrial park on north side of A14 and east side of Jane Coston bridge. A14 embankment may add to complexity				In		
11-15	Online	Cambridge Road/Milton High Street	Space constrained. Below standard cycle lanes currently in place, minor upgrades being made through s106 agreement.	Accesses heart of Milton and associated market	Would suffer from reliability issues due to congestion.				Out		
12-16	Offline	Link alongside Greenway and railway	Greenway	Could tie in with Greenway A14 underpass Greenway alignment beside the railway has been found to be feasible, could be extended to transitway as well Could capture markets in Milton and Horningsea with appropriate cycle/local transport links (800m from Milton & Baits Bite Lock, 1.7km from Horningsea) This point of Greenway north is Phase 1 of scheme	Alignment with railway potentially concentrates public transport corridors in too small an area If alignment follows current Greenway alignment it will pass through a corner of MCP, alignment may need to be modified depending on how acceptable this is Having railway on one side and transit way on another will affect Greenway experience, will need to be sensitively incorporated so people don't feel wedged between the two transport corridors. Crossing points (eg. Fen Road) will require thought Any proposal alongside Greenway/railway would need to confirm status of the development by the Sport Lakes Trust. Planning application S/0795/18/RM was withdrawn in 2018 but it appears they still plan to go ahead with this development. They have said they will incorporate the greenway into their plans, would have to work out if this extends to a transitway		Greenway team is open to the idea of incorporating a transitway with their plans	MCP	In		
13-20	Offline	MPR to Landbeach Road south of Landbeach	Would include maintenance track	Offline route that accesses MPR	Would require better cycling and local public transport links to serve Milton				In		
13-23	Offline	South of Landbeach conservation area to MPR through the fields	Would include maintenance track	Offline route that serves MPR and potentially Landbeach	May conflict with Landbeach conservation area just north of the link				In		
14-17a	Offline	Link from Butt Lane to Landbeach Road: aligned to A10 but offset to west	Would include maintenance track, possibly space constrained around Maize Maze and Rectory Farm	Avoids A10 impact and congestion	Possibly constraint with Maize Maze and Rectory Farm		Maize Maze access relocated		In		
14-17b	Online	Link from Butt Lane to Landbeach Road: Dependent on offline A10 dualling: old A10 gains bus priority	Possibly space constrained, there is room on west side of A10	Direct, serves Milton and MPR	Dependent on a) A10 dualling and b) new A10 alignment is different to existing A10				Out		
14-17c	Online	Link from Butt Lane to Landbeach Road: Bus priority on existing A10, with the assumption that there is either no dualling, or the dualling isn't offline	Possibly space constrained, there is room on west side of A10	Direct, serves Milton and MPR	Capacity limits on existing A10, CPCA potentially concerned about increased capacity from dualling being given entirely to bus priority.				Out		
14-17d	Offline	Link from Butt Lane to Landbeach Road: aligned to A10 but offset to east	Possibly space constrained, there is room on west side of A10 instead of using east side	Direct, serves Milton and MPR (via A10) footbridge	Potential constraint with "village amenity" area in green space to east of A10 Could face opposition from residents who would back on to the transitway, however they do currently back on to the A10 so adequate noise/lighting mitigation may be in place		Utility		In		
14-23	Offline	P&R to Landbeach through the fields	Would include maintenance track	Serves Milton, MPR, while avoiding A10	Fairly large diversion compared to staying east of Landbeach				In		
15-17	Online	Landbeach Road in Milton	Space constrained, some existing infrastructure	Serves central Milton	Congestion, no space for segregated transitway				Out		
15-18	Online	Ely Road in Milton	Space constrained, some existing infrastructure	Serves central Milton	Congestion, no space for segregated transitway				Out		
16-17	Offline	Link from Greenway/railway to A10 at the Landbeach Road junction	Would include maintenance track	Avoids the A10 for the section north of this point, but serves Milton south of this point.	Potentially quite a diversion if the route then heads west again as it approaches Waterbeach Links from this point south may be affected by A10 congestion Depends on status of the Lake	Not an effective connection			Out		
16-18	Offline	Link from Ely Road at north end of Milton to Greenway/railway	Would include maintenance track	Avoids A10 north of this point but serves Milton south of this point	Potentially quite a diversion if the route then heads west again as it approaches Waterbeach Links from this point south may be affected by Milton congestion	Not an effective connection			Out		
16-19	Offline	Alongside Greenway/railway	Greenway	Greenway alignment beside the railway has been found to be feasible, could be extended to transitway as well	Alignment with railway potentially concentrates public transport corridors in too small an area		Greenway team is open to the idea of incorporating a transitway with their plans		In		
16-22	Offline	Link from railway to northeast corner of FootGolf Centre	Would include maintenance track	Leaves railway alignment to head directly towards Waterbeach village					In		

17-20	Online	Landbeach Road from A10 to just south of Landbeach village	Room on either side of Landbeach Road to include NMU infrastructure	Offline option parallel to Landbeach Road a possibility?	Is an online option that passes through a junction that is already congested.	Not an effective connection			Out		
17-21a	Offline	Link from Landbeach Road to Ely Road: aligned to A10 but offset to west	Would include maintenance track	Avoids A10 congestion	Potential dualling of A10 may be a constraint to this route				In		
17-21b	Online	Link from Landbeach Road to Ely Road: Dependent on offline A10 dualling: old A10 gains bus priority	Possibly space constrained, there is room on west side of A10	Uses existing infrastructure	Dependent on a) A10 dualling and b) new A10 alignment is different to existing A10				In		
17-21c	Online	Link from Landbeach Road to Ely Road: Bus priority on existing A10, with the assumption that there is either no dualling, or the dualling isn't offline	Possibly space constrained, there is room on west side of A10	Uses existing infrastructure	Capacity limits on existing A10, CPCA potentially concerned about increased capacity from dualling being given entirely to bus priority.				In		
17-21d	Offline	Link from Landbeach Road to Ely Road: aligned to A10 but offset to east	Possibly space constrained due to allotments, there is room on west side of A10 instead of using east side	Avoids A10 congestion	Allotments to the north of Milton and A10/Ely Road junction are constraints		Equine land Allotments A10/Ely Road junction FootGolf land		Out		
18-21	Online	Along Ely Road between Milton and the A10	Space constrained, limited existing infrastructure	Serves Milton	May suffer from congestion in and out of Milton If road widening required allotments to the west may be a constraint				Out		
19-26	Offline	Diverges from Greenay alongside railway but doesn't stay alongside Car Dyke	Greenway	Serves Waterbeach Avoids Car Dyke scheduled monument and online routes through Waterbeach			Greenway team is open to the idea of incorporating a transitway with their plans		In		
19-27	Offline	Alongside Greenway beside Car Dyke	Greenway	Link towards centre of exiting Waterbeach village Heads towards a separate alignment to the railway, duplicating services Greenway alignment beside Car Dyke has been found to be feasible, could include transitway as well	Car Dyke is a heritage area, so the route alongside it would need to be sensitive to this		Sensitive to Car Dyke scheduled monument land		Out		
19-29	Offline	Alongside Greenway beside railway	Greenway	Greenway alignment beside Car Dyke has been found to be feasible, could be extended to transitway as well	May be constrained toward northern end with housing beside railway Continuing along railway is potentially a duplication of services in close proximity, however if the existing Waterbeach station is located it does mean the new transitway will serve the old location. This location is perhaps worth revisiting anyway as it isn't in the centre of Waterbeach village Station Road area around Waterbeach Station is constrained, perhaps more room available with station relocation Passes through Car Dyke conservation area and Waterbeach Abbey conservation area, would have to be sensitively managed	Level crossing queues on Station Road	Crossing car Dyke Waterbeach Abbey heritage area		Out		
20-24a	Online	Route through Landbeach along Landbeach Road then Waterbeach Road	Space constrained and passes through a conservation area	Serves Landbeach village	Passes through Landbeach conservation area Constrained by space through Landbeach village Route is online – may experience congestion				Out		
20-24b	Offline	Through the fields from south of Landbeach to Waterbeach Road	Would include maintenance track	Serves Landbeach village (stops would be ~500m from village centre)	-				In		
20-25	Offline	Through the fields from Landbeach Road south of Landbeach to A10 at the Car Dyke Road/Waterbeach Road junction	Would include maintenance track	Serves southern end of Landbeach village Avoids A10 Serves southern end of Waterbeach village and can tie in with routes that serve Waterbeach	Junction with A10 would be a constraint, grade separated crossing might be necessary				In		
21-25a	Offline	Link from Ely Road to Waterbeach Road/Car Dyke Road: aligned to A10 but offset to west	Would include maintenance track, some constraints from farm buildings	Avoids A10 congestion	Potential dualling of A10 may be a constraint to this route Some farm building and a caravan park on west side of the A10 along this section Historic milestone potentially a constraint		If buildings are avoided		In		
21-25b	Online	Link from Ely Road to Waterbeach Road/Car Dyke Road: Dependent on offline A10 dualling: old A10 gains bus priority	Possibly space constrained, there is room on west side of A10	Uses existing infrastructure	Dependent on a) A10 dualling and b) new A10 alignment is different to existing A10				In		
21-25c	Online	Link from Ely Road to Waterbeach Road/Car Dyke Road: Bus priority on existing A10, with the assumption that there is either no dualling, or the dualling isn't offline	Possibly space constrained, there is room on west side of A10	Uses existing infrastructure	Capacity limits on existing A10, CPCA potentially concerned about increased capacity from dualling being given entirely to bus priority.				In		
21-25d	Online	Link from Ely Road to Waterbeach Road/Car Dyke Road: aligned to A10 but offset to east	Possibly space constrained, fewer buildings on west side of A10	Avoids A10 congestion	Would have to route around back of businesses to the east of the A10 to join up with Car Dyke Road at the north				In		
22-26	Offline	FootGolf course to Cambridge Road, Waterbeach	Would include maintenance track	Serves central Waterbeach village Avoids Waterbeach conservation area	-				In		
22-27	Offline	FootGolf course to Car Dyke Road/Cambridge Road junction	Would include maintenance track	Serves central Waterbeach village	Option to the north of the link are online only				Out		
23-32a	Offline	Parallel to Mere Way (Roman road, s106 cycleway) but offset to west	S106 Mere Way cycleway	Cycleway along Mere Way as part of the s106 agreement would provide NMU component Very straight route along a known corridor Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton market Potential site of archaeological significance (however paving of Mere Way for the cycleway indicates this may not be an issue) Farm access/severance would need to be considered				In		
23-32b	Offline	Along Mere Way	S106 Mere Way cycleway	Very straight route along a known corridor	Would potentially be constrained by hedgerows Mere Way s106 cycleway would need to be relocated Farm access/severance would need to be considered				In		
23-32c	Offline	Along Mere Way but offset to east	s106 Mere Way cycleway	Cycleway along Mere Way as part of the s106 agreement would provide NMU component Very straight route along a known corridor Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton market Potential site of archaeological significance (however paving of Mere Way for the cycleway indicates this may not be an issue) Farm access/severance would need to be considered				In		
24-25	Online	Waterbeach Road to the A10	Fewer buildings on south side of road	Serves Landbeach and housing along Waterbeach Road	Online so affected by congestion Would need grade separated crossing of A10	Not an effective connection			Out		
24-32	Offline	Through the fields from Waterbeach Road to new link to WNT access roundabout	Would include maintenance track	Serves Landbeach	-				In		
25-26	Online	Cambridge Road from the A10 to Glebe Road	Space constrained, quiet street due to modal filter at A10 end	Serves Waterbeach Low traffic road due to modal filter at Cambridge Road/A10 junction	Potentially constrained with drains on either side of the road and a conservation area for pollard willows to north side		Space constrained		In		
25-27	Online	Car Dyke Road from A10 to Cambridge Road	Would need to be separate to carriageway as speed limit is high	Serves Waterbeach	Potential congestion from being online				Out		
25-31	Offline	Along the A10 from Cambridge Roadthen through the fields past Milton Business Park	Limited space alongside the A10, but it is parallel to the Greenway	More direct route into WNT that avoids continuing along A10 to the north of this point	Space constrained alongside A10.				In		

25-33a	Offline	Link from Waterbeach Road/Car Dyke Road to WNT Access 2: aligned to A10 but offset to west	Would include maintenance track, some constraints	Avoids A10 congestion	Potential dualling of A10 may be a constraint to this route This section has a lot of physical restraints: buildings and lakes to the west of A10 Historic milestone potentially a constraint				Out		
25-33b	Online	Link from Waterbeach Road/Car Dyke Road to WNT Access 2: Dependent on offline A10 dualling: old A10 gains bus priority	Possibly space constrained, buildings on both side of A10	Uses existing infrastructure	Dependent on a) A10 dualling and b) new A10 alignment is different to existing A10				In		
25-33c	Online	Link from Waterbeach Road/Car Dyke Road to WNT Access 2: Bus priority on existing A10, with the assumption that there is either no dualling, or the dualling isn't offline	Possibly space constrained, buildings on both side of A10	Uses existing infrastructure	Capacity limits on existing A10, CPCA potentially concerned about increased capacity from dualling being given entirely to bus priority.				In		
26-27	Online	Cambridge Road from Glebe Road to Car Dyke Road	Greenway	Serves Waterbeach	Potentially space constrained due to residences on either side Conservation areas on the north side of Cambridge Road on either side of Coronation Close	Not an effective connection			Out		
26-31	Offline	Link through the fields from Cambridge Road to Denny End Road	Would include maintenance track	Serves Waterbeach Offline route through the town that avoids the Waterbeach conservation area and any village congestion Serves employment centre on corner of Denny End Road and A10 Aligns with latest proposals for Waterbeach Greenway – potentially meaning land ownership/access issues can be arranged at the same time	Section 31 claim on a parcel of land on this route – not sure if this is an issue Access from Glebe Road would be through allotments				In		
27-28	Online	Cambridge Road to Chapel Street in Waterbeach	Space and conservation area constraints	Serves Waterbeach	Potential congestion from travelling through centre of Waterbeach village Potential space constraints Passes through Waterbeach conservation area				Out		
28-29	Online	Station Road from existing Waterbeach station to Green Side	Space and conservation area constraints	Serves Waterbeach, including site of existing station	Potential congestion from travelling through centre of Waterbeach village Potential space constraints Passes through Waterbeach conservation area	Level crossing congestion	Space constraints		Out		
28-30	Online	Green Side/High Street in Waterbeach	Space and conservation area constraints	Serves Waterbeach	Potential congestion from travelling through centre of Waterbeach village Potential space constraints Passes through Waterbeach conservation area				Out		
29-36	Offline	Alongside railway from existing station to new station including Bannold Drove	Greenway	Serves Waterbeach	Potential duplication of public transport services in close proximity Possible space constraints at southern end of link Bannold Drove potentially not suitable for transitway (currently designated as NMU route)				Out		
30-31	Online	Denny End Road from barracks access to proposed new WNT access	Space and conservation area constraints	Serves Waterbeach	Potential congestion from travelling through centre of Waterbeach village Potential space constraints			Depends on developers plans for entry to WNTW	In		
30-35	Offline	Link on proposed transitway from WNT to Waterbeach village	Would tie in with developers plans	Serves Waterbeach and town centre of WNT Currently proposed as transitway in WNT masterplan/SPD	Current constraints with buildings but will move over time as the WNT is built				In		
31-34	Offline	New link from new access off Denny End Road to proposed E-W transitway in WNT	Would tie in with developers plan (including new A10 bridge)	Serves Waterbeach and town centre of WNT	Not a route that appears on current masterplan/SPD so would require collaboration with developers to implement. Would be on a similar alignment to the s106 cycleway from the A10 bridge, so would need to coordinate to ensure no conflict		U&C haven't started designing land in this section yet, so opportunity to coordinate with them		In		
32-33	Offline	Link to WNT access roundabout 2	Would include maintenance track	Serves WNT through new access point	Doesn't serve Waterbeach village A10 junction may need to be grade separated				In		
33-34	Either	E-W transitway in WNT, appears in masterplans and SPD	Would tie in with developers plan	Serves WNT	Doesn't serve Waterbeach village A10 junction may need to be grade separated Would need to be offline to be effective, current proposals do not specify what form the transitway would take				In		
34-35	Either	E-W transitway in WNT, appears in masterplans and SPD	Would tie in with developers plan	Serves WNT	Doesn't serve Waterbeach village A10 junction may need to be grade separated Would need to be offline to be effective, current proposals do not specify what form the transitway would take				In		
35-36	Either	E-W transitway in WNT to relocated station, appears in masterplans and SPD	Would tie in with developers plan	Serves WNT and relocated station	Doesn't serve Waterbeach village A10 junction may need to be grade separated Would need to be offline to be effective, current proposals do not specify what form the transitway would take Serving relocated station may be redundant			Any route from the station may be challenged on the basis of duplicating services	In		
35-37	Either	SE-NW transitway in WNT between town centre and CRP/WNT Access roundabout 1	Would tie in with developers plan	Serves WNT town centre, secondary town centre by the lake and CRP/potential rural travel hub by the A10 Also serves large sections of WNT, including Key Phase 1	Does not currently appear as a designated transitway in masterplan/SPD, so would need collaboration with developers to implement Would need to be offline to be effective			U&C have designed this stage, would need to coordinate to see where transitway fits into their plans	In		

Appendix D. Map of Options Taken to More Detailed Appraisal



Appendix E. More Detailed Appraisal Table

Round to millions

Links for more detailed assessment

Option details

ID	Description	Integration of Non-Motorised Users (NMU)	Benefits	Potential issues/constraints
1-2	Cambridgeshire Guided Busway (CGB) from Cambridge North station to Milton Road	CGB bridleway	Existing infrastructure Allows a connection to Milton Road PT priority schemes to city centre	CGB capacity?
1-4	Milton Road from CGB to transport hub in centre of North East Cambridge (NEC)	Space constrained on Milton Road, routes exist as shared-use path (SUP) or shared bus priority lanes	Serves routes to city centre Serves centre of NEC including proposed transport hub Ties in with Milton Road bus scheme	Online solutions would be affected by congestion of Milton Road, but there is road space for continuing the Milton Road PT priority lanes in this section
1-6	CGB from Milton Road to existing A14 underpass	CGB bridleway	Existing infrastructure Allows a connection to Milton Road PT priority schemes to city centre	CGB capacity?
2-3	Along Cowley Road and Milton Avenue	Existing Milton Avenue cycleway	Cowley Road potentially main street in Cambridge Northern Fringe East (CNFE) (awaiting Area Action Plan for confirmation of proposed urban design): would connect into this town centre	Cowley Road potentially main street in CFNE: an online route through this area might suffer reliability issues
3-4	Along Cowley Road to Milton Road	Existing Milton Avenue cycleway	Cowley Road potentially main street in CNFE (awaiting AAP for confirmation of proposed urban design): would connect into this town centre	Cowley Road potentially main street in CFNE: an online route through this area might suffer reliability issues Any options parallel but not using the CGB would have to make a strong argument for new infrastructure
3-12	Online along Milton Avenue then offline alongside Waterbeach Greenway alignment	Proposed Greenway route	Could tie in with Greenway A14 underpass Greenway team is receptive to idea of incorporating transitway in their scheme Serves NEC and is able to connect to Cambridge North	Depends on coordination with CNFE and their emerging masterplan Aggregates yard not being relocated as part of NEC development at this stage – could pose an issue with transport trucks along Milton Avenue This section of Greenway is designated "Phase 2" – not sure of timeline on that (may not know until February)
4-5	Link through Cambridge Science Park (CSP): alignment unknown at this stage and will depend on emerging masterplan for regeneration of CSP. Could be on the loop road, on a segregated transitway, or on a realignment of the CGB, or a combination of the above	If online: use existing SUP around CSP If offline: incorporate new NMU route into design	Puts transitway in the heart of the CSP, one of the major destinations and demand drivers	CSP view towards a transitway through their land is unknown. Would require new infrastructure as opposed to using existing CGB just to the south
4-9	Link from Milton Road to ex landfill site using a new crossing of the A14, through the CSP. Alignment in CSP yet to be determined and will depend on emerging masterplan for regeneration of the site. Could be on the loop road, a segregated transitway, or a combination.	If online: use existing SUP around science park If offline: incorporate new NMU route into design	Links directly to CSP	Milton Landfill Site potentially a constraint: pipelines, 9m elevation above surrounding fields, leachate etc. Site is due to be completely restored by 2026 New crossing required, with associated costs and complexity Depends on emerging masterplan for CSP
4-10	Flyover Milton Interchange and continue along Milton Road (alongside or in central reservation)	Space constrained on Milton Road, but parallel route exists via Jane Coston bridge	Direct, passes between CSP and CNFE An on-road, in-corridor option needs to be considered at this stage	Would only be possible as an offline option as there is no capacity for any further online routes through Milton Interchange. This may rule out this option based purely on feasibility. Does not link east-west in NEC, but can connect to schemes that do.
4-11	Link from Milton Road to somewhere near Cambridge Road roundabout in Milton using a new crossing of the A14, potentially on the same alignment as the Jane Coston bridge Depends on proposals for CNFE	Chance to upgrade Jane Coston bridge at the same time to increase capacity on this route	Land between Cambridge Road and A14 is an A14 works compound, so potentially available as landing pad for new bridge Potential to increase capacity of Jane Coston bridge by making new bridge for cycling and walking This route runs alongside Waterbeach Greenway Phase 1	Cambridge Road roundabout itself is probably at or nearing capacity. Options from this point would need to consider Milton Country Park (MCP), the A10 and the A14 New crossing required, with associated costs and complexity Depends on proposals in CNFE
5-6	Link from CGB to east access of CSP along Kings Hedges Drive	Space on western verge for segregated path	Route accesses CSP	May suffer from congestion from traffic accessing Cambridge Regional College (CRC) and CSP
5-7	Link from east access of CSP to existing A14 underpass using Kings Hedges Drive	Space on southern verge for segregated path	Route accesses CSP Potential to be offline if parking configuration is changed for CRC	May conflict with parking for CRC, and uses an access to CSP that is congested
5-8	Link from CSP to south of Milton Park & Ride (MPR) via new A14 crossing	Segregated NMU route	Direct access to CSP	Milton Landfill Site potentially a constraint: pipelines, 9m elevation above surrounding fields, leachate etc. Site is due to be completely restored by 2026 New crossing required, with associated costs and complexity CSP view towards a transitway through their land is unknown
6-7	Using CGB and new cut-thru alongside Mere Way bridleway to access exiting A14 underpass	Existing CGB bridleway, s106 Mere Way cycleway	Uses existing CGB	Impact on CRC parking
6-7a	Using existing CGB A14 underpass, then new link along north side A14 to node 7	Existing CGB bridleway	Uses existing CGB and A14 underpass	Would need to cross CGB bridleway Farm access/severance (however route would be in very corner of field so potentially not an issue)
7-8	Route from existing A14 underpass across field and ex landfill site to south of MPR	Segregated NMU route	Uses existing underpass	Potentially less direct as the route is doubling back on itself Milton Landfill Site potentially a constraint: pipelines, 9m elevation above surrounding fields, leachate etc. Site is due to be completely restored by 2026
7-15a	Parallel to Mere Way (Roman road, s106 cycleway) but offset to west, from A14 to Butt Lane	S106 Mere Way cycleway	Very straight route Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton market Potential site of archaeological significance (however paving of Mere Way for the cycleway indicates this may not be an issue) Farm access/severance would need to be considered
7-15b	Parallel to Mere Way (Roman road, s106 cycleway) but offset to the east, from A14 to Butt Lane	S106 Mere Way cycleway	Very straight route Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton market Potential site of archaeological significance (however paving of Mere Way for the cycleway indicates this may not be an issue) Farm access/severance would need to be considered
8-9	Link through ex landfill from south of MPR to north of new A14 crossing	Segregated NMU route	Provides a direct link from MPR that avoids Milton Interchange	Milton Landfill Site potentially a constraint: pipelines, 9m elevation above surrounding fields, leachate etc. Site is due to be completely restored by 2026
8-10	Link through ex landfill from south of MPR to Milton Interchange	Segregated NMU route	Link to Milton Interchange that avoids A10	Any Milton Interchange option would need to be completely offline, with corresponding cost and complexity involved Milton Landfill Site potentially a constraint: pipelines, 9m elevation above surrounding fields, leachate etc. Site is due to be completely restored by 2026
8-13	Link from Butt Lane down west side of MPR and relocated police station	Segregated NMU route	Avoids A10 and is closer to Milton and MPR than Mere Way	Milton Landfill Site potentially a constraint: pipelines, 9m elevation above surrounding fields, leachate etc. Site is due to be completely restored by 2026
9-10	Link from A10/MI to point north of new A14 crossing	Segregated NMU route	Would allow travel along the A10 and associate directness without need to negotiate Milton Interchange	Still is close enough to Milton Interchange that it would need to be completely offline. New slip lane from A14 to A10 currently under construction, would need to be considered Milton Landfill Site potentially a constraint: pipelines, 9m elevation above surrounding fields, leachate etc. Site is due to be completely restored by 2026

Assessment criterion 1: Sustainable transport capacity (qualitative) / **Assessment criterion 2: PT speed, reliability & safety (qualitative)**

ID	PT Capacity Risks	NMU Additional Capacity	Score	Congestion Relief	Concerns or Pinch Points	Safety Improvement	Score
1-2	+2 as reliant on current CGB. No other issues	0 - no improvement to capacity expected.	2	Fully segregated	CGB capacity limitation?	No improvement over existing	2
1-4	+1 could be delivered by some form of widening in this location, but still likely to be subject to delays on Milton Road and the junctions at either end of the link.	0 - no improvement to capacity expected.	1	Limited ability to improve on current congestion area	Milton Road capacity issues and proximity to junctions	No improvement over existing	0
1-6	+2 as reliant on current CGB. No other issues	0 - no improvement to capacity expected.	2	Fully segregated	CGB capacity limitation?	No improvement over existing	2
2-3	+2 as running on a wide and uncongested road, but feeds in to a pinchpoint of jcts on Milton Rd. Potentially space to widen.	0 - no improvement to capacity expected.	2	Online, but not a congestion problem	None	No improvement over existing	2
3-4	+2 as running on a wide and uncongested road, but feeds in to a pinchpoint of jcts on Milton Rd. Potentially space to widen.	0 - no improvement to capacity expected.	2	Online, but not a congestion problem	None	No improvement over existing	2
3-12	+3 as can be designed to work with the Masterplan as a dedicated route	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through the CNFE area so not far from population	3
4-5	+3 if offline and worked into masterplan with dedicated crossing of Milton Road	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through the CSP area so not far from population	3
4-9	+3 if offline and worked into masterplan with dedicated crossing of Milton Road	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through the CSP area so not far from population	3
4-10	+1 little space to widen, so only opportunity for PT capacity is to remove from car. Still pinchpoints at either end	0 - no improvement to capacity expected.	1	Inherent congestion area and limited scope to avoid	Capacity on this section of highway. Blocking back from Milton Interchange	None	0
4-11	+3 if offline and worked into masterplan with dedicated crossing of Milton Road	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through the CNFE area so not far from population	3
5-6	0 limited space for any improvements and many entrances nearby means that this would likely b busy/congested	0 - no improvement to capacity expected.	0	Inherent congestion area and limited scope to avoid	Capacity on this section of highway. Many adjacent accesses	None	1
5-7	+1 can be widened, but would require changes to adjacent car parks. Still pinchpoints at either end	0 - no improvement to capacity expected.	1	Subject to some congestion/interaction with the car park	Car Park and its accesses, as well as building accesses from the road.	Widening required, so could have safety improvements	2
5-8	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through the CSP area so not far from population	3
6-7	+2 as reliant on current CGB and requiring new connection to the bridge	1 - would provide new or improved connection under the bridge	3	Dedicated route	Width of existing structure to provide sufficient width for PT and NMU routes	New route to be built to latest standards	2
6-7a	+2 as reliant on current CGB	0 - no improvement to capacity expected.	2	Dedicated route	None	No improvement over existing	2
7-8	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2
7-15a	+3 as offline new route with no pinchpoints	0 - assumed use of Mere Way route with no new infrastructure	3	Dedicated route	None	Limited improvement as through rural area	2
7-15b	+3 as offline new route with no pinchpoints	0 - assumed use of Mere Way route with no new infrastructure	3	Dedicated route	None	Limited improvement as through rural area	2
8-9	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2
8-10	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2
8-13	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10 and current PnR Site	2
9-10	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2

Assessment criterion 3: High standards for NMUs (qualitative)

ID	Provision improvements	Issues Alleviated	Key Location Connections	Score
1-2	Walking and cycling route separate to busway, but shared-use	Standards remain the same	NEC, Cambridge North Station (CNS), on to central Cambridge	3
1-4	Segregation and protection would be an improvement over current route (mix of shared-use and on-road)	Rationalising cycle infrastructure so it's not a confusing mix of shared-use and on-road. Safer and more direct crossings.	NEC and on to central Cambridge	3
1-6	Walking and cycling route separate to busway, but shared-use	Standards remain the same	CSP, King's Hedges, CRC, Milton Road, on to central Cambridge	3
2-3	Walking and cycling route separate to busway, but shared-use	Standards remain the same	CNS, CNFE, Cambridge Business Park	3
3-4	Widen existing shared-use path and upgrade to be separate for ped+cycles. Integrate with streetscape.	Isolation from main road in CNFE, lack of integration with main street	CNS, hotel/office complex at station, Cambridge Business Park, CNFE, CSP	3
3-12	Improvement provided by Greenway itself	Connection between CNFE and Milton Country Park/Waterbeach	CNFE, CNS, MCP, NEC, Milton	3
4-5	Assuming offline route, separate ped+cycle routes alongside transitway, with priority over side roads	Increase capacity, improved journey quality, improved safety at junctions	CSP, CRC, CNFE	3
4-9	Assuming offline route, separate ped+cycle routes alongside transitway, with priority over side roads	Increase capacity, improved journey quality, improved safety at junctions	CSP, CNFE	3
4-10	Assuming offline route, separate ped+cycle routes alongside transitway.	Improved journey quality no safe cycling route north of Cowley Road on Milton Road.	NEC, Milton	3
4-11	Increased ped+cycle capacity on this route	Capacity constraints on Jane Coston bridge, pinch point at Milton access, improve transition to Cowley Road, widen and separate ped+cycle route on Cowley Road	NEC, Milton	3
5-6	Assuming offline route, separate ped+cycle routes alongside transitway, with priority over side roads	Increase capacity, improved journey quality, improved safety at junctions	CSP, CRC	3
5-7	Assuming offline route, separate ped+cycle routes alongside transitway, with priority over side roads	Increase capacity, improved journey quality, improved safety at junctions	CSP, CRC	3
5-8	Widen and separate ped+cycle routes alongside transitway, with priority over side roads within CSP. Grade separated crossing of A14 to Dutch standards. 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	Increase capacity, improved journey quality, improved safety at junctions	CSP, CRC	3
6-7	Provision on CGB remains the same but is at a high level. From CGB to underpass will be provided under the s106 agreement	Provision remains the same	CSP, CRC	3
6-7a	Provision on CGB remains the same but is at a high level. Ped+cycle route would be on s106 cycleway route.	Provision remains the same	CSP, CRC	3
7-8	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	CSP, CRC, can go on to serve rest of NEC and CNS	3
7-15a	s106 Mere Way cycleway	Inaccessible cycling and walking route currently exists	CRC, CSP	3
7-15b	s106 Mere Way cycleway	Inaccessible cycling and walking route currently exists	CRC, CSP	3
8-9	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	CSP, can go on to serve rest of NEC	3
8-10	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	NEC, can go on to serve CSP/CNS	3
8-13	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Can connect with links serving CSP/NEC	3
9-10	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Can connect with links serving CSP/NEC	3

Assessment criterion 4: Higher share of journeys by public transport / **Assessment criterion 5: Higher share of short journeys by non-motorised modes**

ID	Market Catchment (C4)	Level of Impact (C4)	Score	Market Catchment (C5)	Level of Impact (C5)	Score
1-2	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). Service will be on Busway and will therefore be reliable and fast. Service will rely on CGB.	3	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). NMU link already present on Busway so mode share unlikely to change. Links to Cambridge North already present so mode share unlikely to change.	3
1-4	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). Link to Node 4 provides effective links to both CSP and CNFE. Any online option will be subject to congestion during peak periods and therefore slow and unreliable.	3	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). Some capacity issues on Milton Road for additional NMU links.	3
1-6	Potential to service all markets apart from CNFE.	Link could service southern area of CSP and is approximately 700m south of northern businesses. Service unlikely to continue onto CNFE. Service will be on busway and will therefore be reliable and fast. Service will rely on CGB.	2	Potential to service all markets apart from CNFE.	Link could service southern area of CSP and is approximately 700m south of northern businesses. Link unlikely to continue onto CNFE. NMU link already present on Busway so mode share unlikely to change. Links to Cambridge North already present so mode share unlikely to change.	2
2-3	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). Offline route will be a fast and reliable service that could increase PT Capacity. Route will run in parallel to CGB.	3	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). NMU link already present adjacent to highway so mode share unlikely to change. Links to Cambridge North already present so mode share unlikely to change.	3
3-4	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). Offline route will be a fast and reliable service that could increase PT Capacity. Route will run in parallel to CGB.	3	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). NMU link already present adjacent to highway so mode share unlikely to change. Links to Cambridge North already present so mode share unlikely to change.	3
3-12	Potential to service all markets apart from CSP.	Link will not service CSP and will service the eastern side of CNFE approximately 700m east of western businesses. Offline route will be a fast and reliable service that could increase PT Capacity. Route will run parallel to railway line.	2	Potential to service all markets apart from CSP.	Link will not service CSP and will service the eastern side of CNFE approximately 700m east of western businesses. Link provides capacity for additional NMU infrastructure that is not currently provided. NMU links will provided as part of Greenways project.	2
4-5	Potential to service all markets apart from CNFE.	Link unlikely to serve CNFE. Link will stop within centre of CSP. Offline route will be a fast and reliable service that could increase PT Capacity.	2	Potential to service all markets apart from CNFE.	Link unlikely to servce CNFE. Link will serve centre of CSP. Link will increase capacity of NMU infrastructure.	2
4-9	Potential to service all markets apart from CNFE.	Link unlikely to serve CNFE. Link could stop within centre of CSP. Offline route will be a fast and reliable service that could increase PT Capacity.	2	Potential to service all markets apart from CNFE.	Link unlikely to servce CNFE. Link will serve centre of CSP. Link will increase capacity of NMU infrastructure.	2
4-10	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). Link to Node 4 provides effective links to both CSP and CNFE. Any online option will be subject to congestion during peak periods and therefore slow and unreliable.	2	Potential to service all markets within Study Area including Milton.	Potential to service markets well (dependant on onward route alignment). Some capacity issues on Milton Road for additional NMU links.	2
4-11	Potential to service all markets apart from CSP.	Link unlikely to serve CSP. Link could stop within centre of CNFE. Offline route will be a fast and reliable service that could increase PT Capacity. Online route may be subject to some congestion.	2	Potential to service all markets apart from CSP.	Link unlikely to servce CSP. Link will serve centre of CNFE. Link will increase capacity of NMU infrastructure.	2
5-6	Potential to service all markets apart from CNFE.	Link unlikely to serve CNFE. Adjacent links could utilise busway or service the centre of CSP. Offline route will be a fast and reliable service that could increase PT Capacity.	2	Potential to service all markets apart from CNFE.	Existing infrastructure already exists therefore unlikely to increase mode share of NMU	2
5-7	Potential to service all markets apart from CNFE.	Link unlikely to serve CNFE. Adjacent links could utilise busway or service the centre of CSP. Offline route will be a fast and reliable service that could increase PT Capacity.	2	Potential to service all markets apart from CNFE.	Link unlikely to servce CNFE. Link will serve centre of CSP. Link will increase capacity of NMU infrastructure.	2
5-8	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link crosses A14 on western side of CSP. Link too far to effectively serve Milton. Link would provide a fast, reliable offline PT option.	2	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	2
6-7	Potential to service all markets apart from CNFE.	Link could service southern area of CSP and is approximately 1km south west of north eastern businesses. Service unlikely to continue onto CNFE. Service will be on busway and will therefore be reliable and fast. Service will rely on CGB.	2	Potential to service all markets apart from CNFE.	Link could service southern area of CSP and is approximately 1km south west of north eastern businesses. Link unlikely to continue onto CNFE. New infrastructure could improve NMU mode share and provide links to CRC.	2
6-7a	Potential to service all markets apart from CNFE.	Link could service southern area of CSP and is approximately 1km south west of north eastern businesses. Service unlikely to continue onto CNFE. Service will be on busway and will therefore be reliable and fast. Service will rely on CGB.	2	Potential to service all markets apart from CNFE.	Link could service southern area of CSP and is approximately 1km south west of north eastern businesses. Link unlikely to continue onto CNFE. New infrastructure could improve NMU mode share and provide links to CRC.	2
7-8	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link crosses A14 on western side of CSP. Link too far to effectively serve Milton. Link would provide a fast, reliable offline PT option.	2	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	2
7-15a	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link crosses A14 on far western side of CSP (College) so may be too far for eastern businesses. Link too far to effectively serve Milton. Link would provide a fast, reliable offline PT option.	1	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'. Link crosses A14 on far western side of CSP (College) so may be too far for eastern businesses.	1
7-15b	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link crosses A14 on far western side of CSP (College) so may be too far for eastern businesses. Link too far to effectively serve Milton. Link would provide a fast, reliable offline PT option.	1	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'. Link crosses A14 on far western side of CSP (College) so may be too far for eastern businesses.	1
8-9	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link too far to effectively serve Milton. Link would provide a fast, reliable offline PT option. Adjacent link effectively serve markets it serves	2	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'. Adjacent link serves CSP well.	2
8-10	Potential to service all markets within Study Area including Milton (depending on adjacent links) Pedestrians will need to cross A10 to utilise stop.	Link would provide offline route that is fast and reliable. Link is west of A10 so may not be attractive to Milton Users.	3	Potential to service all markets within Study Area including Milton (depending on adjacent links) Pedestrians will need to cross A10 to utilise new NMU infrastructure.	Route would improve NMU mode share with new infrastructure. Link unlikely to attract vast numbers of new trips due of Milton users due to proximity of village. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	2
8-13	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link would provide offline route that is fast and reliable. Link could provide additional routes for Milton Park and Ride.	2	CSP, WNT and Waterbeach Village serviced. CNFE and Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	1
9-10	CSP, WNT, Waterbeach Village and Milton serviced. CNFE not serviced.	Link provides route between CSP and Milton. Link would provide offline route that is fast and reliable. Link could provide links to Milton (dependant on adjacent links).	3	CSP, WNT, Waterbeach Village and Milton serviced. CNFE not serviced.	Link provides route between CSP and Milton. Link would provide additional NMU infrastructure. Link could provide links to Milton (dependant on adjacent links).	3

Assessment criterion 6: Higher share of short journeys by non-motorised modes / **Assessment criterion 7: Fewer vehicles driving into Cambridge** / **Assessment criterion 8: Improved perceptions of safety**

ID	Lower Car Mode Share in Study Corridor	Score	Trips Terminating in Cambridge	Score	Overall Safety Improvement	Score
1-2	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route already exists so mode share unlikely to change significantly.	3	Direct connection, potential to capture many markets	3	Informal surveillance from being a busy section of a walking, cycling and bus route. Some overlooking from employment centres either side.	3
1-4	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service if offline. NMU mode share could increase due to additional links on Milton Road.	3	Could facilitate connection	2	Well-lit, busy road with informal surveillance from road.	3
1-6	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route already exists so mode share unlikely to change significantly.	2	Direct connection, potential to capture many markets	3	Informal surveillance from being a busy walking, cycling and bus route. Some overlooking from employment centres either side.	3
2-3	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route already exists so mode share unlikely to change significantly.	3	Direct connection, potential to capture many markets	3	Informal surveillance from being a busy walking, cycling and bus route. Will have more overlooking with development of CNFE.	3
3-4	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route already exists so mode share unlikely to change significantly.	3	Direct connection, potential to capture many markets	3	Informal surveillance from being on proposed main street through CNFE and being a busy cycling and walking route.	3
3-12	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route already exists so mode share unlikely to change significantly.	2	Direct connection, potential to capture many markets, but may miss CSP	2	Informal surveillance from being on main street through CNFE and being a busy cycling and walking route (once CNFE is occupied and Greenway is constructed)	3
4-5	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU network already exists so mode share unlikely to change significantly although may	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Overlooking from CRC and CSP during peak hours, less so after hours	2
4-9	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route already exists so mode share unlikely to change significantly although may increase due to directness of route.	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Overlooking from CRC and CSP during peak hours, less so after hours	2
4-10	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service if offline. NMU mode share could increase due to additional links on Milton Road.	2	Direct connection, potential to capture many markets	3	Overlooking from CRC and CSP during peak hours, less so after hours	2
4-11	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU network already exists so mode share unlikely to change significantly although may increase due to directness of route.	2	Direct connection, potential to capture many markets	3	Overlooking from proposed shop frontages in CNFE. Informal surveillance from being a busy cycling and waking route.	3
5-6	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU network already exists so mode share unlikely to change significantly although may increase due to directness of route.	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Overlooking from CRC and CSP during peak hours, less so after hours	2
5-7	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. Additonal NMU infrastructure could increase mode share.	3	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Overlooking from CRC and CSP during peak hours, less so after hours	2
5-8	Link should reduce car mode share as all markets but CNFE and Milton can be served. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Overlooking from CRC and CSP during peak hours, less so after hours. North of the A14 the route is remote, so would need lighting. Informal surveillance from people walking, cycling and in transit vehicles.	1
6-7	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route already exists so mode share unlikely to change significantly.	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Informal surveillance from being a busy walking, cycling and bus route. Some overlooking from employment centres either side.	3
6-7a	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route already exists so mode share unlikely to change significantly.	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Informal surveillance from being a busy walking, cycling and bus route. Some overlooking from employment centres either side.	3
7-8	Link should reduce car mode share as all markets but CNFE and Milton can be served. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	2	Direct connection, potential to capture many markets. Could connect Milton via PnR Site	3	Remote, so lighting would be necessary on ped+cycle route. Informal surveillance from people walking, cycling and in transit vehicles.	1
7-15a	Link should reduce car mode share as all markets but CNFE and Milton can be served. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	1	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
7-15b	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	1	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
8-9	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	2	Direct connection, potential to capture many markets. Could connect Milton via PnR Site	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
8-10	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. NMU route could increase slightly although hindered by position in relation to A10.	2	Direct connection, potential to capture many markets. Could connect Milton via PnR Site	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cycling and in transit vehicles	1
8-13	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP/A10.	2	Direct connection, potential to capture many markets. Could connect Milton via PnR Site	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cylcing and in transit vehicles	1
9-10	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets. Could connect Milton via A10 routes	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cycling and in transit vehicles	1

Assessment criterion 9: Engineering constraints

ID	Engineering Risks and Constraints	Score
1-2	Only significant risk is modifications at Milton Rd / CGB junction if required for additional transit movements or volumes. Movements currently not accommodated include north-to-east i.e. 4 -> 1 -> 2. Also need to establish the CGB capacity limit and whether any right turn pockets would be of value in accommodating additional volumes.	2
1-4	Existing bus lane northbound only. This could be reallocated to free up southbound space, otherwise focus on coordination of southbound signals between Cowley Road and CGB. Routing via nodes 1 -> 4 -> 11 would require northbound PT to make RT onto Cowley Rd. Access at bus gate (north access to Cowley Rd) may have benefits by giving access to Science Park. TRO and signals work required.	3
1-6	Similar to 1-2. RT west to south is an existing movement without RT pocket; would need to consider value of adding one.	2
2-3	Mixed-traffic link which is the main station access. Reliability will depend on the scale and nature of this other traffic.	3
3-4	As per 2-3 above.	3
3-12	Scope to form part of an eastern corridor with greenway. Such an eastern corridor could potentially offer higher speeds than alternatives which run through the heart of Northern Fringe East. Complicated bridge to build. However more construction space available here than at X3 or X4. Potential for excellent NMU network density in concert with Jane Coston bridge. Would need liaison with greenway proposals.	2
4-5	CGB preferred from engineering point of view but will need to be balanced against the value of running through CSP rather than alongside it. Need to consider current and potential quality of pedestrian links between existing CGB stops and CSP	2
4-9	Further comments to be provided. A14 bridge here would be long due to slip roads. At the landfill end of the link constraints are around geotechnics (more about long-term settlement than about pavement design)	2
4-10	Grade-separation would be expensive and vertically awkward. Potential alternative at-grade option using centre of A10 and of Milton Rd, with side-widening, plus 2-stage signals at roundabout arms and new transit bridge across A14 in centre of roundabout - would reduce structural and operational costs	1
4-11	Main issue is getting transitway from the Jane Coston Bridge to the north side of Cambridge Rd. Consider realigning Cambridge Rd to new alignment including transitway grade-separation to be built first. Potential to elevate transitway through this area. (See also comments on 10-11 below)	2
5-6	A new access onto the CGB east of CRC, near current stub end of access road and CGB stops, would resolve the interaction with general traffic at existing CRC access. Similar in principle to existing CGB Orchard Park T-junction.	3
5-7	As per 5-6 above, new access onto the CGB would resolve this	3
5-8	Bridge over the A14 may have a significant impact on the CSP. All options via node 8 will have similar issues on alignment and geotechnics (including effect on ride quality - more to do with long-term settlement than pavement design). Ground settlement issues would need to be mitigated via the pavement structure.	1
6-7	Use of node 7a instead of 7 is preferable from engineering point of view. Need to consider best ultimate location of transit stops in this area given the potential for multiple transit routes to meet (with potential interchange opportunities) and any opportunities to improve access to CRC through additional or relocated stops.	3
6-7a	Would involve transit crossing the existing CGB bridleway at what in effect would be a new T-junction. Similar situations exist elsewere on CGB. Bridleway impacts and connectivity between all NMU corridors would need to be worked through.	3
7-8	All options via node 8 will have similar issues on alignment and geotechnics (more to do with long-term settlement than pavement design). Ground settlement issues would need to be mitigated via the pavement structure.	1
7-15a	Would need to resolve interaction of transitway and existing / upgraded Mere Way.	2
7-15b	As per 7-15a	2
8-9	All options via node 8 will have similar issues on alignment and geotechnics. Ground settlement issues would need to be mitigated via the pavement structure. This link would have gradient issues and may be better to go around edge of landfill instead	1
8-10	All options via node 8 will have similar issues on alignment and geotechnics. Ground settlement issues would need to be mitigated via the pavement structure. This link would have gradient issues and may be better to go around edge of landfill instead	1
8-13	All options via node 8 will have similar issues on alignment and geotechnics. Ground settlement issues would need to be mitigated via the pavement structure.	1
9-10	Need to review final A14 slip alignment. Constraints here have been a factor in the current A14 work - potential to benefit from the understanding they have already achieved in this area. Combination of landfill and A14 is a significant constraint for this study.	1

Assessment criterion 10: Environmental constraints

ID	Environmental Risks and Constraints	Likely scope of environmental investigations and assessments	Any Comments	Score
1-2	Eversden & Wimpole Woods Special Area of Conservation (SAC) (14km SW) - qualifying feature - barbastelle bats. Histon Road Site of Special Scientific Interest (SSSI) (2.4 km SW) - contact Local Planning Authority (LPA) for all planning applications. However, Histon Road SSSI separated from all proposed routes by urban development and infrastructure so unlikely to be affected by proposed works. Bramblefields Local Nature Reserve (LNR) - adjacent to the route to the S. Coldham's Common LNR (920 m S). Barnwell LNR (2 km SW) and Barnwell II LNR (1.6 km SW) lie adjacent Coldham's Common. Three priority habitats - coastal floodplain grazing marsh (three parcels, closest parcel 60 m SE), lowland fens (one parcel -	Habitat Regulation Assessment (HRA) screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, great crested newt (GCN), bats, bird, reptile, otter and invertebrate.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
1-4	Eversden & Wimpole Woods SAC (14km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.4 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (one parcel 430 m NW). Seven waterbodies - closest waterbody 240 m W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
1-6	Eversden & Wimpole Woods SAC (14km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.6 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland (one parcel - 500 m N). Six waterbodies - closest waterbody - 80 m N.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
2-3	Eversden & Wimpole Woods SAC (14km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.4 km SW) - (see proposed route 1-4, row 12). Bramblefields LNR - 85 m E. One priority habitat - deciduous woodland (three parcels - closest parcel - 300 m NW). One pond - 90 m E. River Cam - 115 m SW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 Habitat, GCN, bats, bird, reptile and otter.	Main considerations are the potential impacts to Eversden & Wimpole Woods SAC, Bramblefields LNR, priority habitats and waterbodies.	1
3-4	Eversden & Wimpole Woods SAC (14km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.5 km SW) - (see 1-4, row 12). Bramblefields LNR - 354 m SE of the route. One priority habitat - deciduous woodland (four parcels - closest parcel - 300 m NW). One pond - 360 m SE.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 Habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are the potential impacts to Eversden & Wimpole Woods SAC, Bramblefields LNR, priority habitats and waterbodies.	1
3-12	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (3 km SW) - (see proposed route 1-4, row 12). Two priority habitats - coastal floodplain grazing marsh (two parcels, closest parcel 250 m E) and deciduous woodland (four parcels - closest parcel within route option). Three waterbodies - closest waterbody 240 m SE. River Cam - 490 m east.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile, otter and invertebrate.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
4-5	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.7 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland (two parcels - closest parcel - 315 m N). Eight waterbodies -	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, great crested newt (GCN), bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
4-9	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland (four parcels - closest parcel - 100 m E). Seven waterbodies - closest waterbody within proposed route.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 Habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
4-10	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.5 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland (four parcels - closest parcel - 130 m W). Seven waterbodies - closest waterbody adjacent to the proposed route to the west.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 Habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
4-11	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.5 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland (four parcels - closest parcel adjacent to the route to the E). Seven waterbodies - closest waterbody 400 m to the SW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
5-6	Eversden & Wimpole Woods SAC (14 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.5 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland (one parcel 450 m NW). Two waterbodies - closest waterbody adjacent to the route to the W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
5-7	Eversden & Wimpole Woods SAC (14 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.4 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (two parcels - closest parcel 360 m NW). Two waterbodies - closest waterbody 170 m S.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
5-8	Eversden & Wimpole Woods SAC (15 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.7 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (five parcels - route passes through two parcels). Two waterbodies - closest waterbody 170 m S.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
6-7	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.3 km SW) - (see proposed route 1-4, row 12). No priority habitats. Three waterbodies - closest adjacent to the route.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC and waterbodies.	1
6-7a	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.2 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (one parcel 370 m NW). Three waterbodies - closest adjacent to the route.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, great crested newt (GCN), bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
7-8	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.4 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (five parcels - route passes through one parcel). Three waterbodies - closest waterbody 330 m SE.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 Habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
7-15a	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.5 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (two parcels - closest parcel lies adjacent tthe route). Four waterbodies - closest waterbody 50 m N.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 Habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
7-15b	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.5 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (two parcels - closest parcel lies adjacent tthe route). Four waterbodies - closest waterbody 50 m N.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 Habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
8-9	Eversden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.8 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (five parcels - route passes through one of the parcels). One waterbody 415 m SW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
8-10	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (five parcels - route passes through one of the parcels and adjacent to two others). One waterbody 415 m SW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
8-13	Eversden & Wimpole Woods SAC (15 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.1 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (three parcels - route passes through one of the parcels). Two waterbodies - closest waterbody 60 m NW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
9-10	Eversden & Wimpole Woods SAC (15 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.5 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (seven parcels - closest parcel adjacent to the route to N). Eight waterbodies - closest waterbody 100 m S.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1

Assessment criterion 11: Buildability – Note: this takes into account the construction access and timescales, the engineering constraints (as far as they affect buildability), and the planning/consents issues. The 'planning score' covers the planning/consents issues; these issues and the corresponding score are one input to the overall buildability score.
Assessment criterion 12: High level cost estimation
Summary subtotal and total scores for convenience only (see note at bottom of table)

ID	Planning Risks and Constraints	Consents Required	Additional comments	Score	Timescale for Delivery (months of construction)	Score	Cost Estimate (£ millions)	Score	TP critiera Total Score	Deliverability criteria total score	All criteria total score
1-2	General comment applicable to all or most links (omitted from other links for brevity) Planning policies identifed from South Cambridgeshire Adopted Policies September 2018 NPPF 2018 -Green Belt Policy Proposals affecting the Green Belt When considering planning applications, local planning authorities give substantial weight to any harm to the Green Belt. 'Very special circumstances' will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations. Certain forms of development are not inappropriate in the Green Belt provided they	(Comment is common to all links and nodes) At this early stage in the project, we have identified the consents route as a likely combination of some or all of the following elements: Transport and Works Act Order (TWAO); Applicaton for Planning permission; Permitted development rights. Transport and Works Act 1992 Order A TWAO is the route usually used for new transitway/tramway (or rail) schemes, which if approved, can authorise powers for the scheme construction, maintenance and operation, land acquisition, rights over third party assets, powers to close or alter roads and for making bylaws. One of the benefits of a TWAO is that it can also grant compulsory purchase powers or temporary powers over land required to construct, operate or for maintenance of the scheme. In making a TWAO, the scheme's promoters would need to demonstrate a compelling case in the public interest for taking away a person's land or rights in land, and that all the land in question is required for the scheme. A TWAO does not in itself grant planning permission for the scheme, but the scheme promoter can submit a request with the TWAO that the SoS grants deemed planning permission for any development described in the Order. The SoS would only grant planning permission if the Order was made (approved), in which case planning permission could be granted at the same time as the TWAO was determined. Usually any such decision notice would have conditions attached to it requiring further details or designs to be submitted to the local planning authority (LPA) for their approval. A TWAO is also likely to be accompanied by an EIA. Application for planning permission Where works are proposed within boundaries of the existing Highway, some works such as bus stop enhancements, public realm, carriageway revisions or changes to line markings can be undertaken via an application for planning permission or through the potential use of permitted development rights - see below. Planning permission may be required for development proposals which are not classed as permitted development. Powers authorised via a planning application will confer permission to construct and use buildings and other assets or for the change of use of land. A planning application will not generally authorise powers for road or tramway schemes, nor will it confer powers for the compulsory acquisition of land. It is likely therefore that planning applications would be used for some works associated with the scheme only - such as urban realm or alterations within existing highways boundaries - but not for the scheme in it's entirety. Permitted Development Schedule 2 of the Town & Country Planning (General Permitted Development) (England) Order 2015 (as amended) (the GPDO) grants right to undertake certain works as 'permitted development' without the need to obtain formal planning permission from the LPA. Those provision, which may be relevant to the implementation of certain specified elements of the project include those under Schedule 2 of the GPDO: •Part 8 Transport Related Development; •Part 9 Development Relating to Roads; and •Part 18 Miscellaneous Development. However, certain restrictions apply to the use of permitted development under Parts 8 and 9 from Article 3(10) of the GPDO, which removes permitted development rights for development that is Environmental Impact Assessment (EIA) development under the Town and Country Planning EIA Regulations 2017 (as amended).		2	6	2	£0	3	22	8	30
1-4	Allocation Policy E/1 - Adjacent Cambridge Science Park Area of Major Change - Adjacent Proposal Site M1 - Adjacent Waste Consultation Area - Adjacent Mineral Safe Guarding Area - Adjacent Residential Area - Near Highways - Major Disruption/ Capacity			2	6	1	£2	3	18	8	26
1-6	Education (CRC) - Near Employment - Near Residential - Near			3	6	3	£0	3	19	9	28
2-3	Future office development near station Area of Major Change - within			3	6	3	£2	3	22	10	32
3-4	Future office development near station Area of Major Change - within Highways - disruption/ capacity			3	6	3	£4	3	22	10	32
3-12	Area of Major Change - within Waste Consultation Area - Within Mineral Safe Guarding Area - Adjacent Waste Water Treatment Works Safeguarding Area - Within		Working with any emerging Masterplan for the Area of Major Change to implement a new route. Transit-oriented development (TOD) opportunities?	2	12	2	£12	1	20	6	26
4-5	Allocation Policy E/1 - Within Cambridge Science Park potential loss of employment land		Promote intensification? Needs engagement with CSP on level of support for a route through their estate	3	12	2	£7	2	19	7	26
4-9	Allocation Policy E/1 - Within Cambridge Science Park potential loss of employment land		Promote intensification? Needs engagement with CSP on level of support for a route through their estate	2	12	2	£16	0	19	5	24
4-10	Allocation Policy E/1 - Within Cambridge Science Park potential loss of employment land Highways - disruption/ capacity Impact of new flyover on the landscape/ views Green Belt - Within		Cross boundary LPAs	1	12	1	£16	0	15	3	18
4-11	Area of Major Change - adjacent Waste Consultation Area - Within Mineral Safe Guarding Area - Adjacent Waste Water Treatment Works Safeguarding Area - Within Green Belt - Green Gap sites encroachement? Milton Country Park		Working with any emerging Masterplan for the Area of Major Change to implement a new route. ToD opportunities? Cross boundary LPAs	2	12	1	£17	0	21	4	25
5-6	Education (CRC) - Within, loss of education land and car parking? Employment - Near Residential - Near			2	6	2	£1	3	14	9	23
5-7	Education (CRC) - Within, loss of education land and car parking? Employment - Near Residential - Near			1	6	1	£1	3	18	8	26
5-8	Education (CRC) - Within, loss of education land, car parking, sports pitch? Employment - Within, loss of employment land? Residential - Near Waste Site - Within, loss of allocated waste land/ site? Working with any waste masterplan for the site and remediation			2	12	2	£14	1	18	5	23
6-7	Allocation Policy SS/1 - Adjacent Local Green Space Policy NH/5 - Within Green Belt - Within Roman Road (Archaeology) - Adjacent PRoW - Adjacent Mere Way Residential Area (travelers camp) - Adjacent plus road is main access to camp Education Use (CRC) - Adjacent			1	6	1	£1	3	19	8	27
6-7a	Allocation Policy SS/1 - Adjacent Local Green Space Policy NH/5 - Within Green Belt - Within Roman Road (Archaeology) - Adjacent PRoW - Adjacent Mere Way Residential Area (travelers camp) - Adjacent plus road is main access to camp Education Use (CRC) - Adjacent			3	6	3	£0	3	18	10	28
7-8	Local Green Space Policy NH/5 - Within Green Belt - Within Roman Road (Archaeology) - Adjacent PRoW - Adjacent Mere Way Residential Area (travelers camp) - Adjacent plus road is main access to camp Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Within, would ahev to work within any waste masterplan for the site Existing Waste Site - Within Education Use (CRC) - Near			2	12	2	£6	2	18	6	24
7-15a	Local Green Space Policy NH/5 - Within Green Belt - Within Roman Road (Archaeology) - Adjacent/ runs alongside Residential Area (travelers camp) - Adjacent plus road is main access to camp Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Adjacent, would have to work within any waste masterplan for the site Existing Waste Site - Within Education Use (CRC) - Near			2	18	2	£10	1	14	6	20
7-15b	Local Green Space Policy NH/5 - Within Green Belt - Within Roman Road (Archaeology) - Adjacent/ runs alongside Residential Area (travelers camp) - Adjacent plus road is main access to camp PRoW - Adjacent Mere Way Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Adjacent, would have to work within any waste masterplan for the site Existing Waste Site - Within Education Use (CRC) - Near			1	18	1	£10	1	14	5	19
8-9	Allocation Policy E/1 - Adjacent Cambridge Science Park, provides direct route to Green Belt - Within Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Adjacent, would have to work within any waste masterplan for the site Existing Waste Site - Within			2	6	2	£4	3	18	7	25
8-10	Allocation Policy E/1 - Near Cambridge Science Park Green Belt - Within Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Adjacent, would have to work within any waste masterplan for the site Existing Waste Site - Within Highways - Major Disruption at Milton Junction/ Capacity			2	12	2	£6	2	19	6	25
8-13	Green Belt - Within Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Adjacent, would have to work within any waste masterplan for the site Existing Waste Site - Within Milton P&R - Adjacent, opportunity to tie in Agricultural land - loss of			2	12	2	£6	2	17	6	23
9-10	Allocation Policy E/1 - Near Cambridge Science Park Green Belt - Within Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Adjacent, would have to work within any waste masterplan for the site Existing Waste Site - Within Highways - Major Disruption at Milton Junction/ Capacity			2	12	2	£6	2	21	6	27

ID	Description	Integration of Non-Motorised Users (NMU)	Benefits	Potential issues/constraints
10-11	Link from Milton Interchange to Cambridge Road roundabout, Milton	Possibly space constrained, A14 interchange poses a barrier	Land potentially available for offline option on site of existing A14 construction compound field Serves Milton market	This section of Cambridge Road may be congested, so best option would be offline, with corresponding cost and complexity.
10-14a	Link from Milton Interchange to Butt Lane: aligned to A10 but offset to west	Segregated NMU route	Direct, close to Milton, accesses MPR	Milton Landfill Site potentially a constraint: pipelines, 9m elevation above surrounding fields, leachate etc. Site is due to be completely restored by 2026 Would need to interface with plans for new police station and may require reconfiguring of MPR access
10-14c	Link from Milton Interchange to Butt Lane: aligned to A10 but offset to east	Possibly space constrained, there is room on west side of A10 instead of using east side	Direct, close to Milton, accesses MPR Corridor between housing and A10 is fairly wide, generally 35-45m, except one pinch point of 24m with culvert under A10 on north-west side of Sycamores Rec	Potential constraint with "village amenity" area in green space to east of A10 Could face opposition from residents who would back on to the transitway, however they do currently back on to the A10 so adequate noise/lighting mitigation may be in place Acceptability may depend on rec ownership
11-12	Connection from near Cambridge Road roundabout, Milton to railway line along south side of MCP	Possibly space constrained but parallel routes exist through MCP	Generally ~18m wide, allows route to avoid central Milton but still accessing Milton market	Some constraints with industrial park on north side of A14 and east side of Jane Coston bridge. A14 embankment may add to complexity
12-26a	Link following alignment of Greenway but going on west side of Sport Lakes development	Greenway	Could tie in with Greenway A14 underpass Greenway team are receptive to idea of incorporating transitway into their scheme Could capture markets in Milton and Horningsea with appropriate cycle/local transport links (800m from Milton & Baits Bite Lock, 1.7km from Horningsea) This point of Greenway north is Phase 1 of scheme Sport Lakes site plan shows a P&R on their development, the transitway could serve this	Would pass through a section of MCP, would need to be sensitive to environment Would need to be carefully incorporated with Greenway, e.g. if a crossing is required Cooperation with Sport Lakes Trust: they have said they will incorporate the greenway into their plans, would have to work out if this extends to a transitway
12-26b	Link alongside Greenway and railway, on east side of Sport Lakes development	Greenway	Could tie in with Greenway A14 underpass Greenway team are receptive to idea of incorporating transitway into their scheme Greenway alignment beside the railway has been found to be feasible, could be extended to transitway as well Could capture markets in Milton and Horningsea with appropriate cycle/local transport links (800m from Milton & Baits Bite Lock, 1.7km from Horningsea) This point of Greenway north is Phase 1 of scheme	If alignment follows current Greenway alignment it will pass through a corner of MCP, alignment may need to be modified depending on how acceptable this is Having railway on one side and transit way on another will affect Greenway experience, will need to be sensitively incorporated so people don't feel wedged between the two transport corridors. Could relocate Greenway west of both transitway and railway Cooperation with Sport Lakes Trust: they have said they will incorporate the greenway into their plans, would have to work out if this extends to a transitway
13-20	Milton Park-and-Ride to Landbeach Road south of Landbeach	Segregated NMU route	Offline route that accesses MPR	Would require better cycling and local public transport links to serve Milton
13-23	South of Landbeach conservation area to MPR through the fields	Segregated NMU route	Offline route that serves MPR and potentially Landbeach	May conflict with Landbeach conservation area just north of the link
14-17a	A10: Link from Butt Lane to Landbeach Road: aligned to A10 but offset to west	Segregated NMU route, possibly space constrained around Maize Maze and Rectory Farm	Avoids A10 impact and congestion	Possibly constraint with Maize Maze and Rectory Farm Maize Maze access would need to be relocated to Landbeach Road
14-17c	A10: Link from Butt Lane to Landbeach Road: aligned to A10 but offset to east	Possibly space constrained, there is room on west side of A10 instead of using east side	Direct, serves Milton and MPR (via A10 footbridge)	Potential constraint with "village amenity" area in green space to east of A10, utilities and Butt Lane ped+cycle bridge Could face opposition from residents who would back on to the transitway, however they do currently back on to the A10 so adequate noise/lighting mitigation may be in place
14-23	MPR to Landbeach through the fields	Segregated NMU route	Serves Milton, MPR, while avoiding A10	Additional length/journey time compared to staying east of Landbeach
15-20	Link from Roman Road to Landbeach Road south of Landbeach, across the fields	Segregated NMU route	Avoids landfill if that turns out to be a constraint	Isolated, and would not capture Milton market Is less direct than options going over landfill site
15-23a	Parallel to Mere Way but offset to west from Butt Lane to Bourne Wood	S106 Mere Way cycleway	Very straight route along a known corridor Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton market Potential site of archaeological significance (however paving of Mere Way for cycleway indicates this may not be an issue) Farm access/severance would need to be considered
15-23b	Parallel to Mere Way but offset to east from Butt Lane to Bourne Wood	S106 Mere Way cycleway	Very straight route along a known corridor Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton market Potential site of archaeological significance (however paving of Mere Way for cycleway indicates this may not be an issue) Farm access/severance would need to be considered
17-21a	Link from Landbeach Road to Ely Road: aligned to A10 but offset to west	Segregated NMU route	Avoids A10 congestion	Potential dualling of A10 may be a constraint to this route
17-21b	Link from Landbeach Road to Ely Road: PT priority on A10	Possibly space constrained, there is room on west side of A10	Main transport corridor in study area	Space constraints for adding PT priority lanes
20-25	Through the fields from Landbeach Road south of Landbeach to A10 at the Car Dyke Road/Waterbeach Road junction	Segregated NMU route	Serves southern end of Landbeach village Avoids A10 Serves southern end of Waterbeach village and can tie in with routes that serve Waterbeach	Junction with A10 would be a constraint, grade separated crossing might be necessary
20-33	Through the fields from south of Landbeach to Waterbeach New Town (WNT) access roundabout 2	Segregated NMU route	Serves Landbeach village (stops would be ~500m from village centre)	Does not serve Waterbeach village

ID	PT Capacity Risks	NMU Additional Capacity	Score	Congestion Relief	Concerns or Pinch Points	Safety Improvement	Score	Provision improvements	Issues Alleviated	Key Location Connections	Score
10-11	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	Current cycling and walking route is limited: cycling on road, walking on pavement on one side of road.	Can connect with links serving CSP/NEC	3
10-14a	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10 and current PnR Site	3	Grade separated crossing of A14 to Dutch standards. North of the A14, 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle.	No current ped+cycle route alongside A10	Milton Road, NEC	3
10-14c	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10 and current PnR Site	3	Grade separated crossing of A14 to Dutch standards. North of the A14, 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle.	No current ped+cycle route alongside A10	Milton Road, NEC	3
11-12	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10 and current PnR Site	3	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	Current cycling and walking route is circuitous and through MCP	Can connect with links serving CSP/NEC	3
12-26a	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Waterbeach Greenway	No current cycling and walking route here: this option enables cycling and walking	NEC, CNS, Milton, potentially Horningsea depending on links	3
12-26b	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Waterbeach Greenway	No current cycling and walking route here: this option enables cycling and walking	NEC, CNS, Milton, potentially Horningsea depending on links	3
13-20	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Milton P&R, can connect with links serving CSP/NEC	3
13-23	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Milton P&R, can connect with links serving CSP/NEC	3
14-17a	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10	3	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current ped+cycle route alongside A10	Milton Road, NEC, Milton P&R	3
14-17c	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10	3	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current ped+cycle route alongside A10	Milton Road, NEC, Milton P&R	3
14-23	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Milton P&R, can connect with links serving CSP/NEC	3
15-20	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Can connect with links serving CSP/NEC	3
15-23a	+3 as offline new route with no pinchpoints	0 - assumed use of Mere Way route with no new infrastructure	3	Dedicated route	None	Limited improvement as through rural area	2	s106 Mere Way cycleway	Inaccessible cycling and walking route currently exists	Can connect with links serving CSP/NEC	3
15-23b	+3 as offline new route with no pinchpoints	0 - assumed use of Mere Way route with no new infrastructure	3	Dedicated route	None	Limited improvement as through rural area	2	s106 Mere Way cycleway	Inaccessible cycling and walking route currently exists	Can connect with links serving CSP/NEC	3
17-21a	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10	3	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current ped+cycle route alongside A10	Milton Road, NEC, Milton P&R	3
17-21b	+2 as would have some interaction with general traffic due to online running	1 - assumed PT priority would also build in NMU provision	2	Inherent congestion area which online priority is only likely to partially resolve	Inherent congestion on A10	New route to be built to latest standards and would run close to A10	1	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current ped+cycle route alongside A10	Milton Road, NEC, Milton P&R	3
20-25	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Can connect with links serving CSP/NEC	3
20-33	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Can connect with links serving CSP/NEC	3

ID	Market Catchment	Level of Impact	Score	Market Catchment	Level of Impact	Score	Lower Car Mode Share in Study Corridor	Score	Trips Terminating in Cambridge	Score	Overall Safety Improvement	Score
10-11	Potential to service all markets within Study Area including Milton. Dependency on adjacent links.	Link provides route between A10 junction and Milton village. Link would provide offline route that is fast and reliable. Link could service all markets dependent on adjacent routes.	3	Potential to service all markets within Study Area including Milton. Dependency on adjacent links.	Link would provide additional NMU infrastructure between Milton and A10 junction. Link could service all markets dependent on adjacent routes.	3	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets, but may miss CSP	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
10-14a	Potential to service all markets within Study Area including Milton.	Link would provide offline route that is fast and reliable. Link is west of A10 so may not be attractive to Milton Users. Link next to A10 so could attract trips during operation.	3	Potential to service all markets within Study Area including Milton. Pedestrians will need to cross A10 to utilise new NMU infrastructure.	Route would improve NMU mode share with new infrastructure. Link unlikely to attract vast numbers of new trips due of Milton users due to proximity of village. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. NMU route could increase slightly although hindered by position in relation to A10.	3	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway	2
10-14c	Potential to service all markets within Study Area including Milton.	Link would provide offline route that is fast and reliable. Link next to A10 so could attract trips during operation.	3	Potential to service all markets within Study Area including Milton.	Route would improve NMU mode share with new infrastructure. Link adjacent to Milton village. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway. Depending on layout, may have some overlooking from houses in Milton	2
11-12	Potential to service all markets within Study Area including Milton. Dependency on adjacent links.	Link would provide offline route that is fast and reliable. Link could service all markets dependent on adjacent routes.	3	Potential to service all markets within Study Area including Milton. Dependency on adjacent links.	Link would provide additional NMU infrastructure between Jane Costen Bridge and Greenways. Link could service all markets dependent on adjacent routes. Route would improve NMU mode share with new infrastructure.	3	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets, but may miss CSP	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
12-26a	CNFE, WNT and Waterbeach Village serviced. Potential for Milton to be services depending on stop south of the village. CSP not serviced.	Link directly links CNFE and Waterbeach Village. Link could also connect with routes abutting the south of Milton. Link would provide offline route that is fast and reliable.	1	CNFE, WNT and Waterbeach Village serviced. Potential for Milton to be services depending on stop south of the village. CSP not serviced.	Route would improve NMU mode share with new infrastructure. Link unlikely to attract vast numbers of new trips due of Milton users due to proximity of village. Link likely to be used by cyclists more often than pedestrians due to distance between Waterbach and Cambridge.	1	Some markets are being serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share.	1	Direct connection, potential to capture many markets, but may miss CSP	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles. Accessible to Milton and Waterbeach.	2
12-26b	CNFE, WNT and Waterbeach Village serviced. Potential for Milton to be services depending on stop south of the village. CSP not serviced.	Link directly links CNFE and Waterbeach Village. Link could also connect with routes abutting the south of Milton. Link would provide offline route that is fast and reliable.	1	CNFE, WNT and Waterbeach Village serviced. Potential for Milton to be services depending on stop south of the village. CSP not serviced.	Route would improve NMU mode share with new infrastructure. Link unlikely to attract vast numbers of new trips due of Milton users due to proximity of village. Link likely to be used by cyclists more often than pedestrians due to distance between Waterbach and Cambridge.	1	Some markets are being serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share.	1	Direct connection, potential to capture many markets, but may miss CSP	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles. Accessible to Milton and Waterbeach	2
13-20	CSP, WNT and Waterbeach Village serviced. CNFE unlikely to be serviced with route alignement but could if routes interact with A10. Milton not serviced.	Link would provide offline route that is fast and reliable. Link could provide additional routes for Milton Park and Ride.	2	CSP, WNT and Waterbeach Village serviced. CNFE unlikely to be serviced with route alignement but could if routes interact with A10. Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP/A10.	2	Direct connection, potential to capture many markets. Could connect Milton via PnR Site	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
13-23	CSP, WNT and Waterbeach Village serviced. CNFE unlikely to be serviced with route alignement but could if routes interact with A10. Milton not serviced.	Link would provide offline route that is fast and reliable. Link could provide additional routes for Milton Park and Ride.	2	CSP, WNT and Waterbeach Village serviced. CNFE unlikely to be serviced with route alignement but could if routes interact with A10. Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP/A10.	2	Direct connection, potential to capture many markets. Could connect Milton via PnR Site	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
14-17a	Potential to service all markets within Study Area including Milton.	Link would provide offline route that is fast and reliable. Link is west of A10 so may not be attractive to Milton Users. Link next to A10 so could attract trips during operation.	3	Potential to service all markets within Study Area including Milton. Pedestrians will need to cross A10 to utilise new NMU infrastructure.	Route would improve NMU mode share with new infrastructure. Link unlikely to attract vast numbers of new trips due of Milton users due to proximity of village. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. NMU route could increase slightly although hindered by position in relation to A10.	3	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway	2
14-17c	Potential to service all markets within Study Area including Milton.	Link would provide offline route that is fast and reliable. Link next to A10 so could attract trips during operation.	3	Potential to service all markets within Study Area including Milton.	Route would improve NMU mode share with new infrastructure. Link adjacent to Milton village. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway. Depending on layout, may have some overlooking from houses in Milton	2
14-23	CSP, WNT, Waterbeach Village and Milton serviced. CNFE unlikely to be serviced with route alignement but could if routes interact with A10.	Link would provide offline route that is fast and reliable. Link could provide additional routes for Milton Park and Ride.	2	CSP, WNT, Waterbeach Village and Milton serviced. CNFE unlikely to be serviced with route alignement but could if routes interact with A10.	Link to provide new high quality NMU route although likely to be used more by cyclists. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	2	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to A10.	2	Direct connection, potential to capture many markets	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
15-20	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link would provide offline route that is fast and reliable.	2	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP	1	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
15-23a	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link would provide offline route that is fast and reliable.	2	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
15-23b	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link would provide offline route that is fast and reliable.	2	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
17-21a	Potential to service all markets within Study Area including Milton.	Link would provide offline route that is fast and reliable. Link is west of A10 so may not be attractive to Milton Users. Link next to A10 so could attract trips during operation.	3	Potential to service all markets within Study Area including Milton. Pedestrians will need to cross A10 to utilise new NMU infrastructure.	Route would improve NMU mode share with new infrastructure. Link unlikely to attract vast numbers of new trips due of Milton users due to proximity of village. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. NMU route could increase slightly although hindered by position in relation to A10.	3	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway	2
17-21b	Potential to service all markets within Study Area including Milton.	Link would provide offline route that is fast and reliable. Link next to A10 so could attract trips during operation.	3	Potential to service all markets within Study Area including Milton.	Route would improve NMU mode share with new infrastructure. Link adjacent to Milton village. Potential to link with Milton Park and Ride which could be utilised as a 'Park and Cycle' or 'Park and Walk'.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway.	2
20-25	CSP, WNT and Waterbeach Village serviced. CNFE unlikely to be serviced with route alignement but could if routes interact with A10. Milton not serviced.	Link would provide offline route that is fast and reliable.	2	CSP, WNT and Waterbeach Village serviced. CNFE unlikely to be serviced with route alignement but could if routes interact with A10. Milton not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP/A10.	2	Direct connection, potential to capture many markets. Could connect Milton via PnR Site	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1
20-33	CSP and WNV serviced. Milton and Waterbeach New Village not serviced. CNFE unlikely to be serviced with route alignment	Link would provide offline route that is fast and reliable.	1	CSP and WNV serviced. Milton and Waterbeach New Village not serviced. CNFE unlikely to be serviced with route alignment	Link to provide new high quality NMU route although likely to be used more by cyclists.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP/A10.	1	Direct connection, potential to capture many markets. Could connect Milton via PnR Site	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1

ID	Engineering Risks and Constraints	Score	Environmental Risks and Constraints	Likely scope of environmental investigations and assessments	Any Comments	Score
10-11	As with 4-11, main issue is getting transitway from the Jane Coston Bridge to the north side of Cambridge Rd. Consider realigning Cambridge Rd to new alignment including transitway grade-separation to be built first. From 10 northwards, a route on east side of the A10 would provide good access to corridor from Milton and would avoid the landfill.	2	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.7 km SW) - (see proposed route 1-4, row 12). Stow-cum-Quy Fen SSSI (3.3 km NW) - separated from all proposed routes by River Cam and agricultural land so unlikely to be affected by proposed works. Two priority habitats - coastal and floodplain grazing marsh - (one parcel 500 m W) and deciduous woodland - (five parcels - closest parcels adjacent to the route to the N and S). Eight waterbodies - closest waterbody 110 m SW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile, otter and invertebrate.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
10-14a	Existing transport corridor. Key considerations are (i) potential synergy/overlap with any A10 online or offline dualling or junction proposals, and (ii) options for the east-to-west arrangement of each element of the corridor. On (ii), links with Milton village will need to be accommodated which implies east of A10. Consider having NMU route on east (village) side of A10 and transit route on west side.	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (2.7 km SW) - (see proposed route 1-4, row 12). One priority habitat - deciduous woodland - (eight parcels - closest parcels adjacent to the route to the E and W). Five waterbodies - closest waterbody 50 m W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
10-14c	As per 10-14a above, plus see comments on 10-11 above.	2	As 10-14a	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
11-12	Consider use of reinforced earth	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (3.2 km NW) - (see proposed route 10-11, row 33). Two priority habitats - coastal and floodplain grazing marsh - (two parcels - closest parcel 300 m W) and deciduous woodland - (five parcels - closest parcels adjacent to the route to the N and S). Three waterbodies - closest waterbody 200 m N.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile, otter and invertebrate.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
12-26a	For section alongside railway, consider having greenway on west, transit in centre, railway on east. Implies relocating greenway if constructed in short-term directly alongside railway. Potential construction complications due to working adjacent to railway. Consider the interaction with the existing level crossings (Fen Rd and agricultural). Potential grade-separation of transit corridor and road traffic could also facilitiate level crossing removal.	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (2.4 km W) (see proposed route 10-11, row 33). Two priority habitats - coastal and floodplain grazing marsh - (three parcels - closest parcel 110 m W) and deciduous woodland - (eight parcels - route passes through one parcel). Seven waterbodies - closest waterbody 20 m W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile, otter and invertebrate.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
12-26b	As per 12-26a above, but runs alongside railway for greater proportion of link	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (2.2 km W) (see proposed route 10-11, row 33). Two priority habitats - coastal and floodplain grazing marsh - (nine parcels - passes through one parcel and) and deciduous woodland - (eight parcels - route passes through one parcel and three parcels immediately adjacent to the W). Six waterbodies - closest waterbody 160 m W. Route runs adjacent to Car Dyke Roman Canal. Runs parallel to River Cam - closest point - 70 m E of route.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile, otter and invertebrate.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
13-20	No specific engineering comments on this link, but is affected by the issues relating to the landfill and node 8.	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (two parcels - closest parcel immediately to the S). Two waterbodies - closest waterbody immediately to the S.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
13-23	No specific engineering comments on this link, but is affected by the issues relating to the landfill and node 8.	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Worts Meadow LNR - immediately adjacent to north end of route. One priority habitat - deciduous woodland - (three parcels - closest parcels immediately to the N and S). Three waterbodies - closest waterbody immediately to the S.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, Wort's Meadow LNR, priority habitats and waterbodies.	1
14-17a	Similar issues to 10-14a and 10-14c above.	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (3.2 km W) - (see proposed route 10-11, row 33). One priority habitat - deciduous woodland - (five parcels - closest parcels immediately adjacent to the E and W). Three waterbodies - closest waterbody 100 m SW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: PPhase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
14-17c	Similar issues to 10-14a and 10-14c above.	2	See 14-17a above.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
14-23	Limited engineering issues but would need a rationale for crossing from one corridor to another.	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Worts Meadow LNR - immediately adjacent to north end of route. One priority habitat - deciduous woodland - (three parcels - closest parcels immediately to the N and S). Two waterbodies - closest waterbody 80 m SW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, Worts Meadow LNR, priority habitats and waterbodies.	1
15-20	Limited engineering issues but would need a rationale for crossing from one corridor to another.	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (one parcel immediately south). Four waterbodies - closest waterbody 80 m NW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
15-23a	Likely to be workable. As per 7-15a, would need to resolve interaction of transitway and existing / upgraded Mere Way	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Worts Meadow LNR - immediately adjacent to north end of route. One priority habitat - deciduous woodland - (three parcels - closest parcels immediately to the N and S). Two waterbodies - closest waterbody 30 m W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, Worts Meadow LNR, priority habitats and waterbodies.	1
15-23b	Likely to be workable. As per 7-15b, would need to resolve interaction of transitway and existing / upgraded Mere Way	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Worts Meadow LNR - immediately adjacent to north end of route. One priority habitat - deciduous woodland - (three parcels - closest parcels immediately to the N and S). Two waterbodies - closest waterbody 30 m W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, Worts Meadow LNR, priority habitats and waterbodies.	1
17-21a	Similar issues to 10-14a and 10-14b above. An offline A10 dualling could allow the existing A10 carriageway to be converted to a transit corridor	3	Eversden & Wimpole Woods SAC (15.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (2.8 km W) - (see proposed route 10-11, row 33). One priority habitat - deciduous woodland - (three parcels - closest parcel 215 m SW). Two waterbodies - closest waterbody 230 m NE.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
17-21b	As per 17-21a above	3	See 17-21a above	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
20-25	Could become less easy if any future offline A10 dualling wished to use this area too. At A10 crossing, consider grade separation options and potential for offline build. The approaches will be the challenge - could be mitigated by moving node 25 southwards.	2	Eversden & Wimpole Woods SAC (16.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (3.3 km W) - (see proposed route 10-11, row 33). One priority habitat - deciduous woodland - (four parcels - closest parcels immediately adjacent to the E and W). Nine waterbodies - closest waterbody 120 m NE.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1
20-33	Could become less easy if any future offline A10 dualling wished to use this area too. Crosses Waterbeach Road between Landbeach and Waterbeach - consider at-grade crossing or grade-separation.	3	Eversden & Wimpole Woods SAC (17 km SW) - qualifying feature - barbastelle bats. Worts Meadow LNR - immediately adjacent. Two priority habitats - one parcel coastal and floodplain grazing marsh immediayely adjacent and deciduous woodland - (three parcels - closest parcel 200 m east). Seven waterbodies - closest waterbody 100 m E.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile, otter and invertebrate.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, Worts Meadow LNR, priority habitats and waterbodies.	1

ID	Planning Risks and Constraints	Consents Required	Additional comments	Score	Timescale for Delivery (months of construction)	Score	Cost Estimate (£ millions)	Score	TP critiera Total Score	Deliverability criteria total score	All criteria total score
10-11	Green Belt - Within, potential encorachment into the gap sites however, site by A14 was advertised for sale/ strategic development cicra 2015 Protected Village Amentiy Area Policy NH/11 - Near Milton Playing Fields Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Adjacent Existing Waste Site - Within Highways - Major Disruption at Milton Junction/ Capacity			1	12	1	£5	2	20	6	26
10-14a	Green Belt - Within Protected Village Amentiy Area Policy NH/11 - Adjacent Waste Consultation Area - Within, would have to work within any waste masterplan for the site Existing Waste Site - Adjacent Highways - Major Disruption at Milton Junction/ Capacity Milton P&R - Within, opportunity to tie in easily Residential - Near			1	12	1	£6	2	23	7	30
10-14c	Green Belt - Within Protected Village Amentiy Area Policy NH/11 - Within Milton Playing Fields and screening along A10 likely to be significant objection to the loss of this Waste Consultation Area - Within Existing Waste Site - Adjacent Highways - Major Disruption at Milton Junction/ Capacity Milton P&R - Adjacent, need to cross A10 or seperate stop? Residential - Adjacent			2	6	2	£4	3	23	8	31
11-12	Green Belt - Within Employment Land - Within Crane Lane light industrial estate, potential for redevelopment intesification maybe bring forward with the gap site advertised for sale/ strategic development cicra 2015 for something bigger ToD? Protected Village Amentiy Area Policy NH/11 - Near Milton Playing Fields Lordsbridge Consultation Area 2 Policy TI/7 - Within Waste Consultation Area - Within Mineral Safe Guarding Area - Adjacent Waste Water Treatment Works Safeguarding Area - Within NMU/ Cycle Route - Disruption Country Park (Milton) - Within potential disruption			1	12	1	£5	2	21	7	28
12-26a	Green Belt - Within Flood Zone - Within Flood Zone 2/3 mitigation might be required Schedule Ancient Monuments Policy NH/14 - within/ adjacent Multi-phased settlement east of Milton and Car Dyke likely impact Local Green Space Policy NH/5 - Within Waste Consultation Area - Within Mineral Safe Guarding Area - Within NMU/ Cycle Route - Proposed Greenway Disruption/ impact, slightly less if GBR is alongisde railway line rather than NMU route? Country Park (Milton) - Within potential disruption/ impact on country park Railway Line - Near, potential future to tie in with a new station at Milton when the need arises? Agricultural land - loss of			1	36	1	£25	0	15	5	20
12-26b	Green Belt - Within Flood Zone - Within Flood Zone 2/3 mitigation might be required Schedule Ancient Monuments Policy NH/14 - within/ adjacent Multi-phased settlement east of Milton and Car Dyke likely impact Local Green Space Policy NH/5 - Within Waste Consultation Area - Within Mineral Safe Guarding Area - Within NMU/ Cycle Route - Proposed Greenway Disruption/ impact, main driver of the greenways are NMU routes or ways to enjoy countryside? will inform arrnagment with GBR Country Park (Milton) - Within potential disruption/ impact on country park Railway Line - Near, potential future to tie in with a new station at Milton when the need arises? Agricultural land - loss of			1	36	1	£25	0	15	5	20
13-20	Green Belt - Within Local Green Space Policy NH/5 - Within Waste Consultation Area - Within Agricultural land - loss of Highways - Crossses Landbeach Road Reservoir - Near Cemetery - Near			1	12	1	£8	2	17	7	24
13-23	Green Belt - Within Local Green Space Policy NH/5 - Within Waste Consultation Area - Within Agricultural land - loss of			1	18	1	£11	1	17	6	23
14-17a	Green Belt - Within Local Green Space Policy NH/5 - Within Waste Consultation Area - Within Agricultural land - loss of, Within Rectory Farm loss of car boot site? loss of amusement site/ maze? Highways - Crossses Landbeach Road Reservoir - Near Cemetery - Adjacent, sensitive receptor use NMU - Disrution to footbridge			1	12	1	£7	2	23	7	30
14-17c	Green Belt - Within Local Green Space Policy NH/5 - Within Protected Village Amentiy Area Policy NH/11 - Within Milton Playing Fields and screening along A10 likely to be significant objection to the loss of this Waste Consultation Area - Within Highways - Crossses Humphries Way Cemetery - Near, sensitive receptor use Residential - Adjacent NMU - Disrution to footbridge			2	12	1	£7	2	23	6	29
14-23	Green Belt - Within Local Green Space Policy NH/5 - Within Waste Consultation Area - Within Agricultural land - loss of			1	18	1	£12	1	18	6	24
15-20	Green Belt - Within Waste Consultation Area - Within Agricultural land - loss of, Within Sunclose Farm loss of greenhouses? loss of holiday caravans? Highways - Crossses Butt Lane Roman Road (Archaeology) - Adjacent PRoW - Adajcent Mere Way			1	18	1	£9	2	15	7	22
15-23a	Green Belt - Within Waste Consultation Area - Within Agricultural land - loss of, Within Sunclose Farm loss of greenhouses? Adjacent sheds/ storage? Highways - Crossses Butt Lane Roman Road (Archaeology) - Adjacent PRoW - Adajcent/ Follows Mere Way Local Nature Reserve - Adjacent Worts Meadow Schedule Ancient Monument - Near Shrunken medieval village of Landbeach Residential - Adjacent/ within the rear to scattered properties			2	18	2	£10	1	16	7	23
15-23b	Green Belt - Within Waste Consultation Area - Within Agricultural land - loss of, Within Sunclose Farm loss of greenhouses? Highways - Crossses Butt Lane Roman Road (Archaeology) - Adjacent PRoW - Adajcent/ Follows Mere Way Local Nature Reserve - Within Worts Meadow likley to be issues with this maybe re provision elsewhere nearby Schedule Ancient Monument - Adjacent Shrunken medieval village of Landbeach Residential - Near scattered properties			1	18	1	£10	1	16	6	22
17-21a	Green Belt - Within Local Green Space Policy NH/5 - Within Highways - Crossses Landbeach Road Agricultural Land - Loss of Cemetery - Adjacent, sensitive receptor use			1	12	1	£5	2	23	7	30
17-21b	Green Belt - Within Local Green Space Policy NH/5 - Within Highways - Within A10 disruption/ capacity Cemetery - Near, sensitive receptor use Residential - Near Allotments - Adjacent			2	12	2	£5	2	20	8	28
20-25	Green Belt - Within Local Green Space Policy NH/5 - Within Highways - Crossses Landbeach Road Agricultural Land - Loss of Grade II Listed building - Adjacent			2	12	2	£8	2	17	7	24
20-33	Green Belt - Within Local Green Space Policy NH/5 - Within Sand and Gravel - Within Highways - Crossses Waterbeach Road Agricultural Land - Loss of Grade II Listed building - Adjacent			2	24	2	£14	1	15	7	22

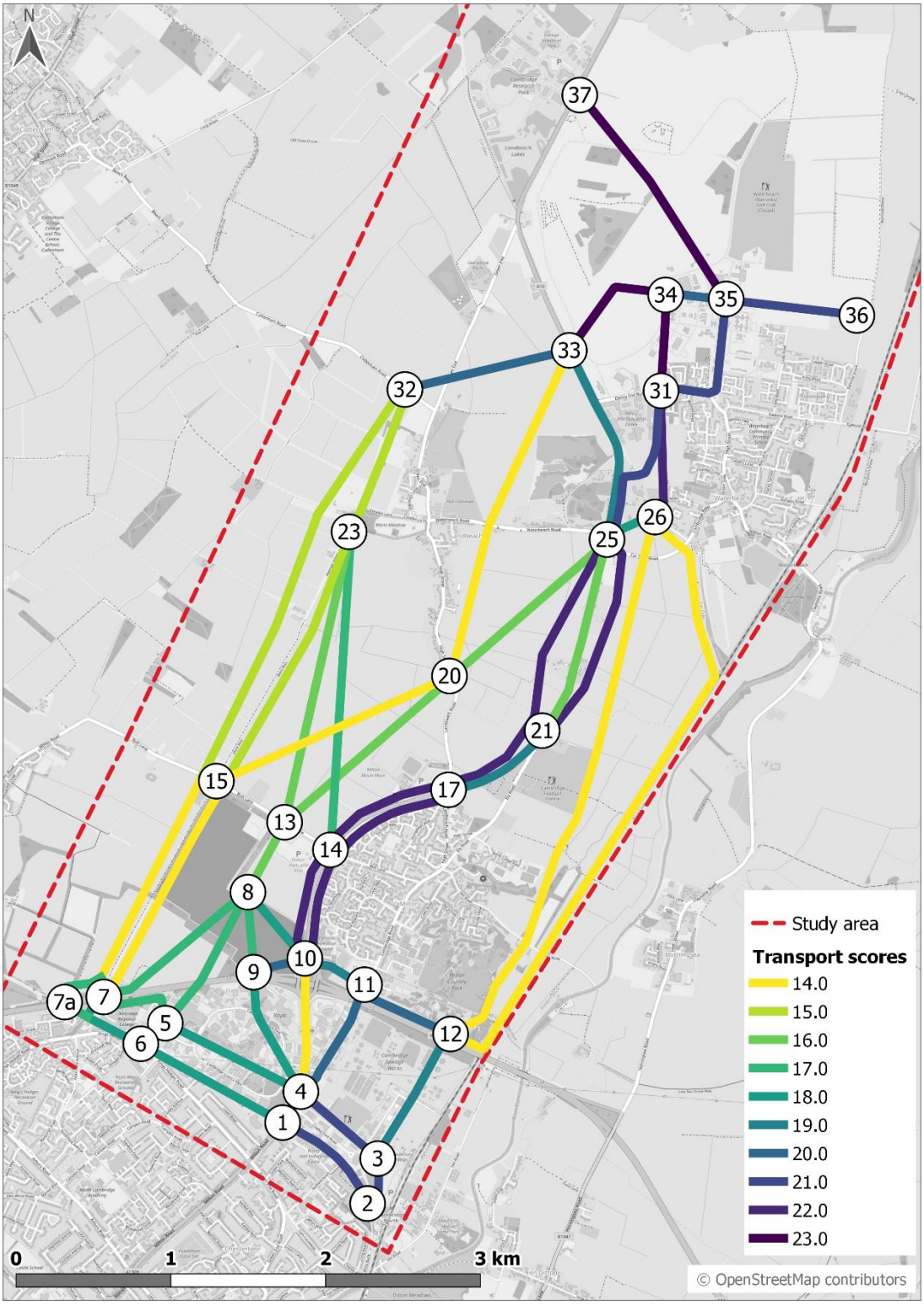
ID	Description	Integration of Non-Motorised Users (NMU)	Benefits	Potential issues/constraints	PT Capacity Risks	NMU Additional Capacity	Score	Congestion Relief	Concerns or Pinch Points	Safety Improvement	Score	Provision improvements	Issues Alleviated	Key Location Connections	Score	Market Catchment	Level of Impact	Score	Market Catchment	Level of Impact	Score	Lower Car Mode Share in Study Corridor	Score	Trips Terminating in Cambridge	Score	Overall Safety Improvement	Score	Engineering Risks and Constraints	Score	Environmental Risks and Constraints	Likely scope of environmental investigations and assessments	Any Comments	Score	Planning Risks and Constraints	Consents Required	Additional comments	Score	Timescale for Delivery (months of construction)	Score	Cost Estimate (£ millions)	Score	TP critiera Total Score	Deliverability criteria total score	All criteria total score
21-25a	Link from Ely Road to Waterbeach Road/Car Dyke Road: aligned to A10 but offset to west	Segregated NMU route, some constraints from farm buildings	Main transport corridor in study area Avoids A10 congestion	Potential dualling of A10 may be a constraint to this route Some farm building and a caravan park on west side of the A10 along this section Historic milestone potentially a constraint	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10	3	Can use proposed shared use path alongside A10 or have separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	Substandard ped+cycle route alongside A10	Milton Road, NEC, Milton P&R	3	Potential to service all markets within Study Area including Milton.	Link would provide offline route that is fast and reliable. Link is west of A10 so may not be attractive to Milton and Waterbeach Users. Link next to A10 so could attract trips during operation.	3	Potential to service all markets within Study Area including Milton.	Route would improve NMU mode share with new infrastructure. NMU would need to cross A10 at Waterbeach.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. NMU route could increase slightly although hindered by position in relation to A10.	3	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway. Some buildings overlooking section.	2	Similar comments to 10-14a above.	2	Eversden & Wimpole Woods SAC (17 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (2.8 km W) - (see proposed route 10-11, row 33). One priority habitat - deciduous woodland - (four parcels - closest parcel 180 m NW). Nine waterbodies - closest waterbody 25 m W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Green Belt - Within Highways - A10 disrutpion Grade II Listed building - Adjacent Residential - Adjacent, probably more visible to front of Agricultural Land - Loss of			1	18	1	£9	2	23	6	29
21-25b	Link from Ely Road to Waterbeach Road/Car Dyke Road: PT priority on A10	Possibly space constrained, there is room on west side of A10	Main transport corridor in study area	Space constraints for adding PT priority lanes	+2 as would have some interaction with general traffic due to online running	1 - assumed PT priority would also build in NMU provision	2	Inherent congestion area which online priority is only likely to partially resolve	Inherent congestion on A10	New route to be built to latest standards and would run close to A10	1	Can use proposed shared use path alongside A10 or have separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	Substandard ped+cycle route alongside A10	Milton Road, NEC, Milton P&R	3	Potential to service all markets within Study Area including Milton.	Link on A10 so may get stuck in congestion during peak periods (although early assessments assume no congestion on this part of A10).	2	Potential to service all markets within Study Area including Milton.	Reduced capacity for NMU links could reduce attractiveness.	2	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. NMU route could increase slightly although hindered by position in relation to A10.	2	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway. Some buildings overlooking section.	2	Similar comments to 10-14a above.	2	Eversden & Wimpole Woods SAC (17 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (2.8 km W) - (see proposed route 10-11, row 33). One priority habitat - deciduous woodland - (four parcels - closest parcel 180 m NW). Nine waterbodies - closest waterbodies adjacent to the route to the E and W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Green Belt - Within Highways - A10 disrutpion/ capacity Grade II Listed building - Adjacent Residential - Adjacent			2	18	2	£9	2	17	7	24
21-25c	Link from Ely Road to Waterbeach Road/Car Dyke Road: aligned to A10 but offset to east	Possibly space constrained, fewer buildings on west side of A10	Main transport corridor in study area Avoids A10 congestion	Would have to route around back of businesses to the east of the A10 to join up with Car Dyke Road at the north	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run close to A10	3	Can use proposed shared use path alongside A10 or have separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	Substandard ped+cycle route alongside A10	Milton Road, NEC, Milton P&R	3	Potential to service all markets within Study Area including Milton.	Link would provide offline route that is fast and reliable. Link next to A10 so could attract trips during operation.	3	Potential to service all markets within Study Area including Milton.	Route would improve NMU mode share with new infrastructure.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Informal surveillance limited to people walking, cycling, in transit vehicles and on highway. Some buildings overlooking section.	2	If running east of the properties on east side of A10, 21-26 would be a more logical connection	2	Eversden & Wimpole Woods SAC (17 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (2.7 km W) - (see proposed route 10-11, row 33). One priority habitat - deciduous woodland - (four parcels - closest parcels 200 adjacent to the route to the E and W). Nine waterbodies - closest waterbody 85 m to the W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Green Belt - Within Highways - A10 disrutpion Grade II Listed building - Adjacent Residential - Adjacent, Better screened from Agricultural Land - Loss of			1	18	1	£9	2	23	6	29
23-32a	Parallel to Mere Way (Roman road, s106 cycleway) but offset to west	S106 Mere Way cycleway	Cycleway along Mere Way as part of the s106 agreement would provide NMU component Very straight route Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton or Waterbeach markets Potential site of archaeological significance (however paving of Mere Way for cycleway indicates this may not be an issue) Farm access/severance would need to be considered	+3 as offline new route with no pinchpoints	0 - assumed use of Mere Way route with no new infrastructure	3	Dedicated route	None	Limited improvement as through rural area	2	s106 Mere Way cycleway	Inaccessible cycling and walking route currently exists	Can connect with links serving CSP/NEC	3	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link would provide offline route that is fast and reliable.	2	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1	Similar to 15-23 above	3	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (4.5 km SW) - (see proposed route 10-11, row 33). Worts meadow LNR - adjacent to the route to the E. Three priority habitats - good quality semi-improved grassland (one parcel 120 m E), deciduous woodland - (one parcel - adjacent to the route to E) and traditional orchard (two parcels - closest parcel 260 m E). Four waterbodies - closest waterbody 190 m to the E.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Green Belt - Within Agricultural land - loss of Highways - Crossses Cockfen Lane Roman Road (Archaeology) - Adjacent PRoW - Adajcent Mere Way Local Nature Reserve - Adjacent Worts Meadow Schedule Ancient Monument - Near Shrunken medieval village of Landbeach Residential - one scattered farm further from rear of properties on green end which are Grade II Listed appears to potentially be outside their land			2	12	2	£8	2	16	8	24
23-32b	Along Mere Way but offset to east	s106 Mere Way cycleway	Cycleway along Mere Way as part of the s106 agreement would provide NMU component Very straight route Avoids potential environmental constraints of Mere Way hedgerows	Isolated, and would not capture Milton or Waterbeach markets Potential site of archaeological significance (however paving of Mere Way for cycleway indicates this may not be an issue) Farm access/severance would need to be considered	+3 as offline new route with no pinchpoints	0 - assumed use of Mere Way route with no new infrastructure	3	Dedicated route	None	Limited improvement as through rural area	2	s106 Mere Way cycleway	Inaccessible cycling and walking route currently exists	Can connect with links serving CSP/NEC	3	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link would provide offline route that is fast and reliable.	2	CSP, WNT and Waterbeach Village serviced. Milton and CNFE not serviced.	Link to provide new high quality NMU route although likely to be used more by cyclists.	1	Link could capture external trips dependent on alignment of connecting links. PT mode share likely to increase due to new infrastructure. NMU mode share could increase slightly, dependant on onward links to CSP	2	Direct connection, potential to capture many markets, but unlikely to provide connection to Milton	2	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	1	Similar to 15-23 above	3	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (4.5 km SW) - (see proposed route 10-11, row 33). Worts meadow LNR - adjacent to the route to the E. Three priority habitats - good quality semi-improved grassland (one parcel 120 m E), deciduous woodland - (one parcel - adjacent to the route to E) and traditional orchard (two parcels - closest parcel 260 m E). Four waterbodies - closest waterbody 190 m to the E.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Green Belt - Within Agricultural land - loss of Highways - Crossses Cockfen Lane Roman Road (Archaeology) - Adjacent PRoW - Adajcent Mere Way Local Nature Reserve - Within Worts Meadow likley to be issues with this maybe re provision elsewhere nearby Schedule Ancient Monument - Adjacent Shrunken medieval village of Landbeach Residential - closer to rear of properties on green end which are Grade II Listed and so setting might be issue as route is within their land potentially			1	12	1	£8	2	16	7	23
25-26	Cambridge Road from the A10 to Glebe Road, or offline equivalent to south of Cambridge Road	Space constrained, quiet street due to modal filter at A10 end	Serves Waterbeach Low traffic road due to modal filter at Cambridge Road/A10 junction	Potentially space constrained with drains on either side of the road and a conservation area for pollard willows to north side	+1 little space to widen, so only opportunity for PT capacity is to remove from car. Still pinchpoints at either end	0 assumed no improvement for running online	1	Limited existing congestion, but limited space for priority	Limited existing capacity	none over existing road	1	Where possible given space constraints: separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	Current cycling route is on road, current walking route is on road/grassy verge.	Can connect with links serving CSP/NEC	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Overlooking from houses on Cambridge Road, light traffic, some informal surveillance from people walking, cycling and in transit vehicles.	3	This road is not connected to the current A10. Potential for re-connection if there is a new separate A10 alignment.	2	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (4.5 km SW) - (see proposed route 10-11, row 33). Two priority habitats - coastal and floodplain grazing marsh (one parcel 340 m SE) and deciduous woodland - (six parcels - closest parcel 210 m NW). Six waterbodies - closest waterbody 60 m N.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, phase 2 botany, badger, GCN, bats, bird, reptile, otter and invertebrate.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Green Belt - Within Highways - A10 disruption/ capacity to open up Cambridge Road junction Residential - Adjacent, what happens to residents access along this road is it shared? Agricultural Land - Potetnial Loss of if needed to be widended			1	6	1	£2	3	19	6	25
25-31	Along the A10 from Cambridge Road then through the fields south and east of the industrial estate	Limited space alongside the A10, but it is parallel to the Greenway	More direct route into WNT that avoids continuing along A10 to the north of this point	Space constrained alongside A10.	+2 as would have some interaction with general traffic due to online running, but also lengthy segregated section	1 as mostly new route	3	Dedicated route for most of the length	Limited on street running and potential capacity pinchpoint at northern end of the link.	New route to be built to latest standards and would run close to A10 or Waterbeach residential area	2	Where possible given space constraints: separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle. Will also overlap with Waterbeach Greenway at northern end of link	Substandard ped+cycle route alongside A10, no link through to Waterbeach village along same alignment	Can connect with links serving CSP/NEC	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Some overlooking from buildings on A10, light traffic, some informal surveillance from people walking, cycling and in transit vehicles.	3	Generally a difficult section from Car Dyke Rd to Denny Lane. Recent residential development (Cooke's Field). Transit corridor options would benefit from any potential new offline A10 route here as the existing route could become more of a transit corridor. Alternatively coordination with any potential online A10 dualling could assist in creating space for both schemes.	2	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (five parcels - closest parcel 50 m S). Seven waterbodies - closest waterbody 125 m NW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Allocation Policy E/15 - Adjacent Green Belt - Within Highways - A10 disruption/ capacity to open up new junction Residential - loss of land and trees Agricultural Land - Loss of Allotements - Within Roman Canal (Archaeology) - Adjacent			1	12	1	£7	2	22	6	28
25-33b	Link from Waterbeach Road/Car Dyke Road to WNT Access 2: PT priority on A10	Possibly space constrained, buildings on both side of A10	Main transport corridor in study area	Space constraints for adding PT priority lanes	+2 as would have some interaction with general traffic due to online running	1 - assumed PT priority would also build in NMU provision	2	Inherent congestion area which online priority is only likely to partially resolve	Inherent congestion on A10	New route to be built to latest standards and would run close to A10	1	Can use proposed shared use path alongside A10 or have separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	Substandard ped+cycle route alongside A10	Milton Road, NEC, Milton P&R	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Some overlooking from buildings on A10. Informal surveillance limited to people walking, cycling, in transit vehicles and on highway.	3	Southern part of link has similar issues as per 25-31 above. Northern part is less constrained.	2	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (four parcels - closest parcels adjacent to the route to E and W). Seven waterbodies - closest waterbody 60 m E.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats and reptiles.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Allocation Policy E/15 - Adjacent Green Belt - Within Highways - A10 disrutpion/ capacity Residential - Adjacent			2	12	2	£8	2	20	8	28
26-31	Link through the fields from Cambridge Road to Denny End Road	Greenway	Serves Waterbeach Offline route through the town that avoids the Waterbeach conservation area and any village congestion Serves employment centre on corner of Denny End Road and A10 Aligns with latest proposals for Waterbeach Greenway – potentially meaning land ownership/access issues can be arranged at the same time	Section 31 claim on a parcel of land on this route – not sure if this is an issue Access from Glebe Road would be through allotments	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	Limited on street running and potential capacity pinchpoint at northern end of the link.	New route to be built to latest standards and would run close to A10 or Waterbeach residential area	2	Waterbeach Greenway	No current cycling and walking route here: this option enables cycling and walking	Waterbeach	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Overlooking from houses and industrial park in Waterbeach. Informal surveillance from people walking, cycling and in transit vehicles	3	As per 25-31 above. Allotments are a sensitivity.	1	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (four parcels - closest parcels adjacent to the route to E and W). Seven waterbodies - closest waterbody 180 m SW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Allocation Policy E/15 - Adjacent Green Belt - Within Residential - loss of land and trees Agricultural Land - Loss of Allotements - Within Roman Canal (Archaeology) - Adjacent			2	12	1	£5	2	23	5	28
31-34	New link from new access off Denny End Road to proposed east-west transitway in WNT	Would tie in with developers plan (including new A10 bridge)	Serves Waterbeach and town centre of WNT Urban & Civic (U&C) haven't started designing land in this section yet, so opportunity to coordinate with them	Not a route that appears on current masterplan/SPD so would require collaboration with developers to implement. Would be on a similar alignment to the s106 cycleway from the A10 bridge, so would need to coordinate to ensure no conflict	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through development area	3	Depends on U&C plans, ideally separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Waterbeach new town	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Overlooking from houses and businesses in Waterbeach new town. Informal surveillance from people walking, cycling, in transit vehicles, and in town	3	Constraints relate more to the issues south of node 31	2	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (one parcel - closest parcel 170 m N). Nine waterbodies - closest waterbody 220 m N.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	WNT Need to work closely with developers masterplan		opportunities to engage with developers?	2	6	2	£3	3	24	8	32
31-35	From Denny End Road to proposed WNT town centre via existing barracks access	Space and conservation area constraints, but Greenway and internal WNT NMU infrastructure is an alternative	Serves Waterbeach	Potential congestion on Denny End Road Potential space constraints Depends on developers plans for entry to WNT	+2 as would have some interaction with general traffic due to online running	1 - assumed PT priority would also build in NMU provision	2	Mixture of online running	Capacity restriction of existing road and current/future traffic levels	New route to be built to latest standards and would run through development area	2	Depends on U&C plans, ideally separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Waterbeach new town	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Overlooking from houses and businesses in Waterbeach new town. Informal surveillance from people walking, cycling, in transit vehicles, and in town	3	Constraints relate more to the issues south of node 31	2	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (one parcel 500 m N). Three waterbodies - closest waterbody 310 m W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	WNT Need to work closely with developers masterplan Highways - Constraints/ Capacity on existing network		opportunities to engage with developers?	1	6	1	£4	3	22	7	29
32-33	Link from top of Roman Road to WNT access roundabout 2	Segregated NMU route	Serves WNT through new access point	Doesn't serve Waterbeach village A10 junction may need to be grade separated	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	Limited improvement as through rural area	2	Separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Can connect with links serving CSP/NEC	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Remote, so lighting would be necessary on ped+cycle route. Some informal surveillance from people walking, cyling and in transit vehicles	3	Grade-separation of A10 (including both transit and NMU) would also serve the Mereway NMU corridor. Fine-tuning of crossing location to be resolved.	1	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. One priority habitat - coastal and floodplain grazing marsh - (one parcel 500 m SE). Nine waterbodies - closest waterbody adjacent to route to the W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Agricultural land - loss of Sand and Gravel Safguard Area - Within Grade II Listed Building - Adjacent Highways - Needs to cross A10			2	12	2	£5	2	21	8	29
33-34	E-W transitway in WNT, appears in masterplans and Waterbeach Supplementary Planning Document (SPD)	Would tie in with developers plan	Serves WNT	Doesn't serve Waterbeach village A10 junction may need to be grade separated Would need to be offline to be effective, current proposals do not specify what form the transitway would take	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through development area	3	Depends on U&C plans, ideally separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Waterbeach new town, new rural travel hub?	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Overlooking from houses and businesses in Waterbeach new town. Informal surveillance from people walking, cycling, in transit vehicles, and in town	3	See comments on 32-33 re A10 crossing. Integration with masterplan is key and needs to be resolved quickly.	3	Eversden & Wimpole Woods SAC (18 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (fifteen parcels - closest parcel adjent to the route to the S). Twelve waterbodies - closest waterbody adjacent to route to the S.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	WNT Need to work closely with developers masterplan Grade II Listed Building - Adjacent Highways - Needs to cross A10		opportunities to engage with developers?	2	6	2	£4	3	24	9	33
34-35	E-W transitway in WNT, appears in masterplans and SPD	Would tie in with developers plan	Serves WNT	Doesn't serve Waterbeach village A10 junction may need to be grade separated Would need to be offline to be effective, current proposals do not specify what form the transitway would take	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through development area	3	Depends on U&C plans, ideally separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Waterbeach new town	3	Potential to service all markets within Study Area apart from Waterbeach Village	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	2	Potential to service all markets within Study Area apart from Waterbeach Village	Link to provide new high quality NMU route although likely to be used more by cyclists.	2	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	2	Direct connection, potential to capture many markets	3	Overlooking from houses and businesses in Waterbeach new town. Informal surveillance from people walking, cycling, in transit vehicles, and in town	3	See comments on 32-33 re A10 crossing. Integration with masterplan is key and needs to be resolved quickly.	3	Eversden & Wimpole Woods SAC (18 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (two parcels - closest parcel 160 m E). Ten waterbodies - closest waterbody 35 m N.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	WNT Need to work closely with developers masterplan		opportunities to engage with developers?	2	6	2	£3	3	21	9	30
35-36	E-W transitway in WNT to relocated station, appears in masterplans and SPD	Would tie in with developers plan	Serves WNT and relocated station	Doesn't serve Waterbeach village A10 junction may need to be grade separated Would need to be offline to be effective, current proposals do not specify what form the transitway would take Any route from the station may be challenged on the basis of duplicating services	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through development area	3	Depends on U&C plans, ideally separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Waterbeach new town, relocated Waterbeach station	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Only connection to relocated railstation.	1	Overlooking from houses and businesses in Waterbeach new town. Informal surveillance from people walking, cycling, in transit vehicles, and in town	3	See comments on 32-33 re A10 crossing. Integration with masterplan is key and needs to be resolved quickly.	3	Eversden & Wimpole Woods SAC (18 km SW) - qualifying feature - barbastelle bats. One priority habitat - deciduous woodland - (three parcels - closest parcel adjent to the route to the N). Thirteen waterbodies - closest waterbody 35 m N.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	WNT Need to work closely with developers masterplan		opportunities to engage with developers?	2	6	2	£4	3	22	9	31
35-37	SE-NW transitway in WNT between town centre and Cambridge Research Park (CRP)/WNT Access roundabout 1	Would tie in with developers plan	Serves WNT town centre, secondary town centre by the lake and CRP/potential rural travel hub by the A10 Also serves large sections of WNT, including Key Phase 1	Would need to be offline to be effective U&C have designed this stage, would need to coordinate to see where transitway fits into their plans	+3 as offline new route with no pinchpoints	1 - new route	3	Dedicated route	None	New route to be built to latest standards and would run through development area	3	Depends on U&C plans, ideally separate ped+cycle route: 3.5m wide two-way cycleway with centre line, 2m footpath alongside with 25mm curb with forgiving angle	No current cycling and walking route here: this option enables cycling and walking	Waterbeach new town, CRP, new rural travel hub?	3	Potential to service all markets within Study Area including Milton.	Link could provide offline route that is fast and reliable. Additional route provides additional PT capacity.	3	Potential to service all markets within Study Area including Milton.	Link to provide new high quality NMU route although likely to be used more by cyclists.	3	Link should reduce car mode share as all markets could be serviced. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Overlooking from houses and businesses in Waterbeach new town. Informal surveillance from people walking, cycling, in transit vehicles, and in town	3	See comments on 32-33 re A10 crossing. Integration with masterplan is key and needs to be resolved quickly.	3	Eversden & Wimpole Woods SAC (18.5 km SW) - qualifying feature - barbastelle bats. Two priority habitats - coastal and floodplain grazing marsh (one parcel 500 m N) and deciduous woodland - (nine parcels - closest parcel 20 m N). Seventeen waterbodies - closest waterbody 30 m E.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	WNT Need to work closely with developers masterplan Grade II Listed Building - Adjacent Highways - Needs to cross A10		opportunities to engage with developers?	2	12	2	£9	2	24	8	32
Specific nodes and other areas for more detailed assessment																																												
Node 4	Intersection of Milton Road, Cowley Road and the CSP access road. Proposed as the 'transport hub' of the NEC (awaiting emerging masterplan to confirm this status)	Existing SUP should be replaced an upgraded alongside any transitway/transit lanes in this area	Serves NEC market (includes CSP) and interacts with proposed transport hub	Milton Road is wide at this point but also congested, especially for traffic accessing CSP.	1 - major reconfiguration would be required. Severe congestion area with PT likely to get caught up in.	0 - existing crossings in the area	1	Priority could help, but likely still issues	Milton Road and proximity to so many junctions is a concern	No improvement over existing	1	Improve crossing of Milton Road and access to CSP and CNFE	Increase capacity and improve journey quality	NEC, towards central Cambridge	3	Potential to service all markets within Study Area including Milton.	Node allows all markets to be served (dependent on ajdoining links). Node to provide offline links which provide fast and reliable PT.	3	Potential to service all markets within Study Area including Milton.	Node provides additional NMU links between links.	3	Link should reduce car mode share as all markets can be served. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Good central hub	3	Informal surveillance during the day, but limited overlooking and would feel isolated outside peak hours	2	Potential for the east-west movement between CSP and Cowley Road to become transit/NMU only. Would require further design consideration and optioneering if taken forward, but not likely to be a showstopper. Consider also in wider context of AAP aspirations.	1	versden & Wimpole Woods SAC (14.5 km SW) - qualifying feature - barbastelle bats. Histon Road SSSI (1.7 km SW) - (see proposed route 1-4, row 12). No priority habitats. Two waterbodies - closest waterbody 230 m NW.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Allocation Policy E/1 - Adjacent Cambridge Science Park Area of Major Change - Adjacent Proposal Site M1 - Adjacent Waste Consultation Area - Adjacent Mineral Safe Guarding Area - Adjacent Residential Area - Near Highways - Major Disruption		ToD opportunity if tied in with Proposal Site M1	2	6	2	£2	3	19	7	26
Node 25	Intersection of A10, Cambridge Road, Car Dyke Road and Waterbeach Road (staggered junction). Cambridge Road currently has a modal filter at the A10 end (no motor vehicle access)	Segregated NMU route	Potentially allows access to Waterbeach market	Congested crossing point with a pattern of collision (six from 2013-2017) If on-street, modal filter at Cambridge Road would need to be reconfigured to allow transit vehicles to access this road (may further complicate junction) Potential offline alignment south of Cambridge Road instead. Potential transitway bridge over A10.	2 - would require PT priority for any crossing here	1 - new structure or crossing would increase capacity	3	Priority for crossing will reduce congstion for PT, but not free flow	Approaches from A10 and general traffic volumes are a concern	New crossing would help safety	2	Improve crossing of A10 and access to Waterbeach	Increase capacity and improve journey quality	Waterbeach	3	Potential to service all markets within Study Area including Milton.	Node allows all markets to be served (dependent on ajdoining links). Node to provide offline links which provide fast and reliable PT.	3	Potential to service all markets within Study Area including Milton.	Node provides additional NMU links between links.	3	Link should reduce car mode share as all markets can be served. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Some overlooking from houses on Cambridge Road, light traffic, some informal surveillance from people walking, cycling and in transit vehicles.	3	Would require further design consideration and optioneering if taken forward. Numerous possibilities, eg jug-handle from south. Consider adding an east-west NMU route to Waterbeach Lane.	2	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (4.5 km SW) - (see proposed route 10-11, row 33). One priority habitat - deciduous woodland - (four parcels - closest parcel 100 m NW). Nine waterbodies - closest waterbody 60 m E.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Green Belt - Within Local Green Space - Within Settlement Boundary Policy S/7 - Outside Residential Area - Near Highways - Major Disruption Water Infrastructure - Pumping Station Grade II Listed building - Adjacent	As above		2	6	2	£2	3	22	8	30
Node 26	Intersection of Glebe Road and Cambridge Road in Waterbeach	Greenway	Serves Waterbeach market Provides direct route to WNT for options that go alongside Greenway	Space is constrained here so any transitway alignment may either require housing demolition or would encroach on allotments. Passes close to houses and may face opposition from residents.	2 - difficult geometry for bus movements could hinder reliability	1 - new structure or crossing would increase capacity	3	Limited	Limited	Limited	2	Waterbeach Greenway	Current cycling route is on road, walking route is footway on one side of the road	Waterbeach	3	Potential to service all markets within Study Area including Milton.	Node allows all markets to be served (dependent on ajdoining links). Node to provide offline links which provide fast and reliable PT.	3	Potential to service all markets within Study Area including Milton.	Node provides additional NMU links between links.	3	Link should reduce car mode share as all markets can be served. PT mode share likely to increase due to reliability and speed of service. New NMU route provided increasing mode share and lower car mode share.	3	Direct connection, potential to capture many markets	3	Overlooking from houses on Cambridge Road/Glebe Road, light residential traffic, some informal surveillance from people walking, cycling and in transit vehicles.	3	The local built environment will have a significant constraint on the CAM - given that there is likely to be either running with traffic or a changes access for Glebe Road; which is a cul-de-sac. This would potentially be Cambridge Road further east or north via Mill Street altogh thast would require a significant diversion for residents. It seems simpler to keep the CAM as close as possible to the A10 corridor wherever possible.	2	Eversden & Wimpole Woods SAC (17.5 km SW) - qualifying feature - barbastelle bats. Stow-cum-Quy Fen SSSI (3 km SW) - (see proposed route 10-11, row 33). One priority habitat - deciduous woodland - (four parcels - closest parcel 120 m NW). Three waterbodies - closest waterbody 170 m W.	HRA screening of Eversden & Wimpole Woods SAC. Potential surveys: Phase 1 habitat, badger, GCN, bats, bird, reptile and otter.	Main considerations are potential impacts to Eversden & Wimpole Woods SAC, priority habitats and waterbodies.	1	Green Belt - Within Improved Landscaping - Adjacent Settlement Boundary Policy S/7 - Outside Residential Area - Adjacent Highways - Major Disruption Roman Canal Car Dyke (archaeology) - Adjacent			2	6	2	£1	3	23	8	31

Note on the summary subtotal scores and total score: These are provided for convenience and ease of reference only, as a sense-check of the overall 'picture' of the assessment. They do not represent assessment results or conclusions in their own right. The selection of better-performing options is made on the basis of all the information in the assessment.

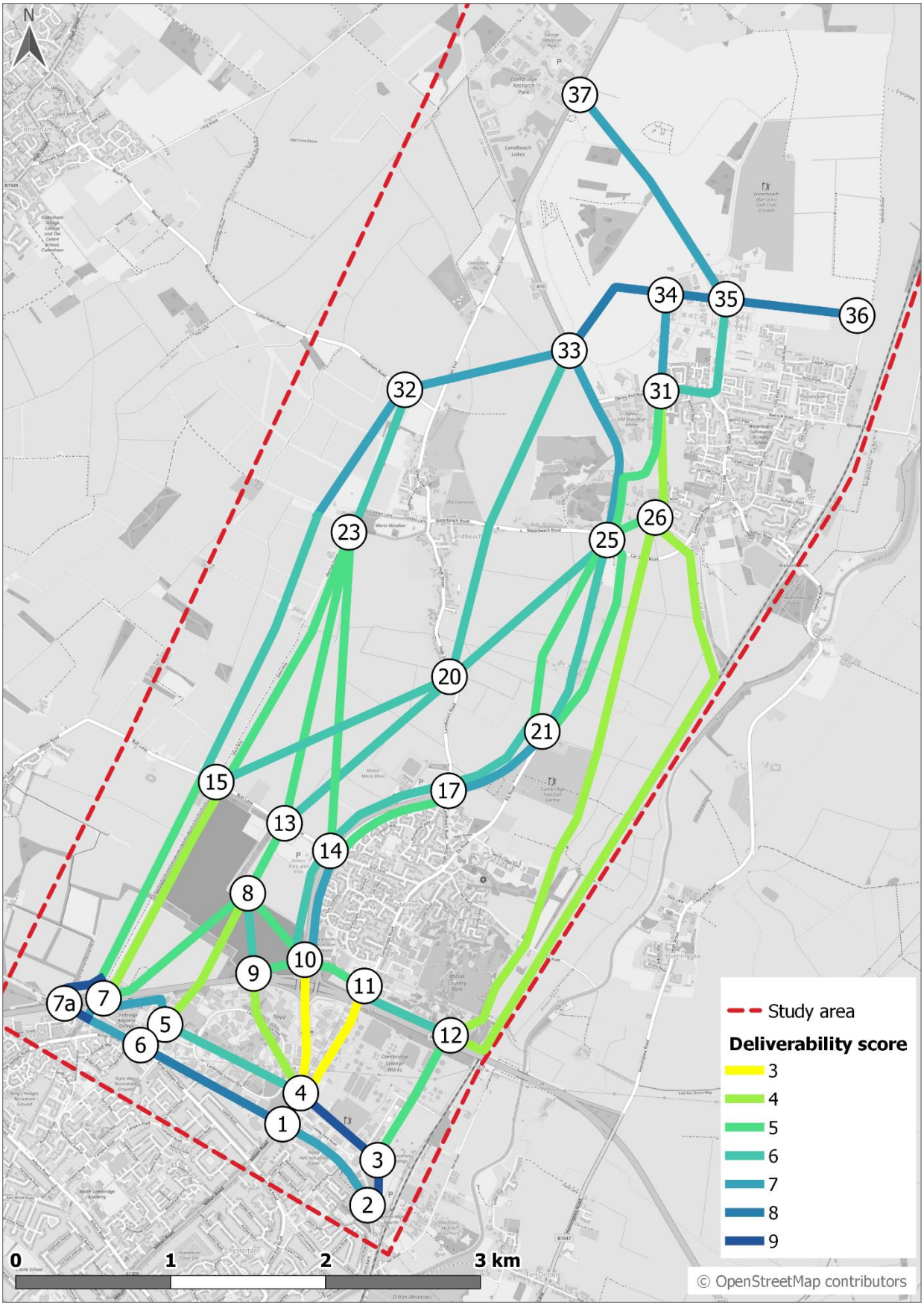
The "TP criteria total score" is is the sum of the scores under assessment criteria 1 to 8, which are the transport objectives and outcomes. The "Deliverability criteria total score" is the sum of the scores under assessment criteria 9-12, which cover the deliverability assessments. The "all criteria total score" is the sum of the scores under all assessment criteria. These scores draw upon each assessment criterion with equal weight, but this doe snot imply that individual assessment criteria are necessarily given qual weight in decision-making.

Appendix F. Maps of Option Appraisal Results for Individual Links

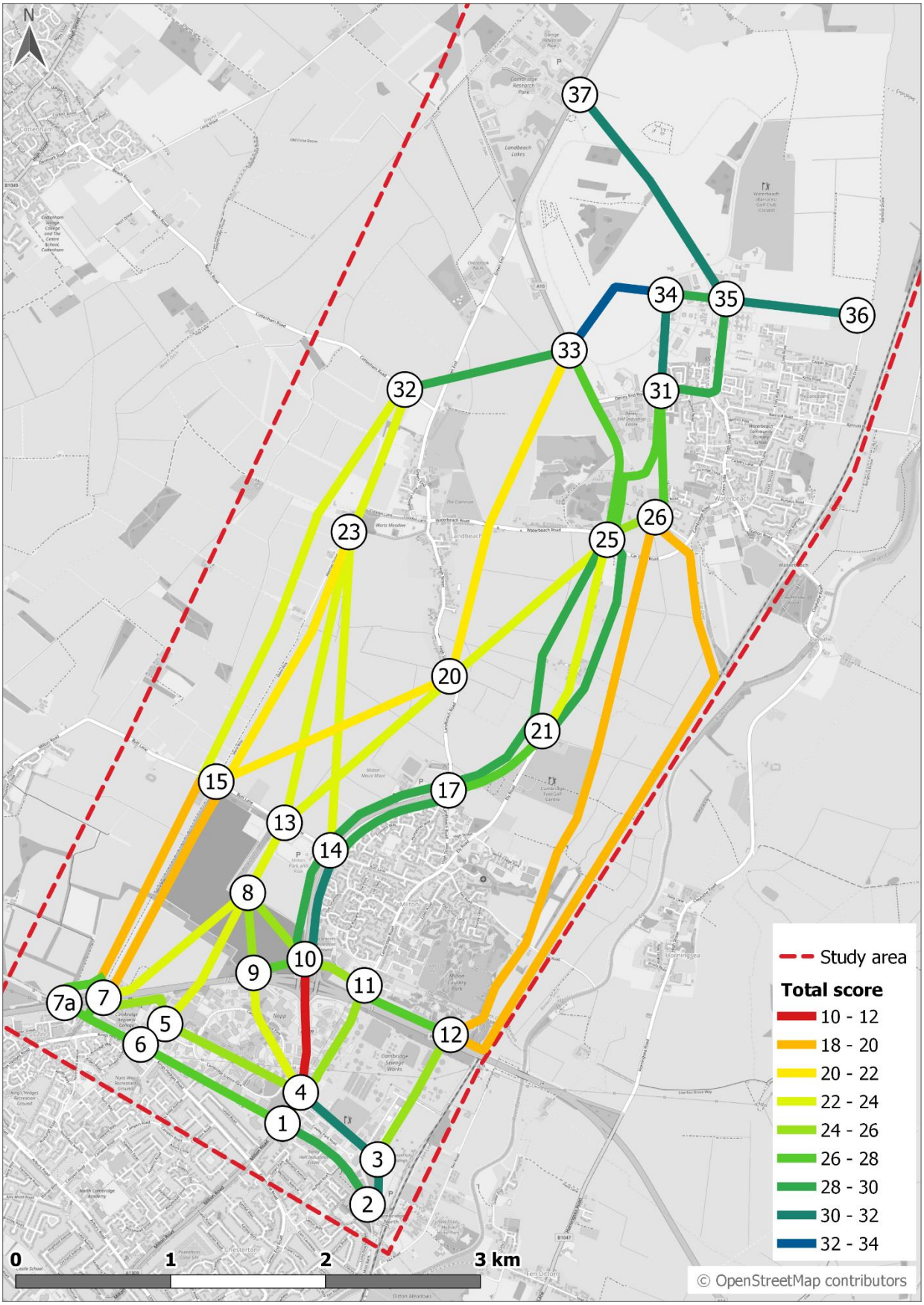
F.1. Transport Planning Scores



F.2. Deliverability Scores



F.3. Total Scores



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