
The Cambourne to Cambridge Order

Transport And Works Act 1992

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

Transport Assessment

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. WSP has been commissioned by the Greater Cambridge Partnership (GCP) to prepare a Transport Assessment report (TA) to accompany the Transport and Works Act Order (TWAo) application for the Cambourne to Cambridge Scheme (CtoC Scheme). The TA is intended to be read in conjunction with the various plan and reports that comprise the TWAo application.
- 1.1.1. A TA is a comprehensive and systematic process that sets out the transport issues relating to the proposed scheme. It identifies the measures required to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport. It also describes any mitigation measures which will be needed to deal with the anticipated transport impacts of the scheme.
- 1.1.2. The TA considers a forecast year of 2041.

1.2 CTOC SCHEME

- 1.2.1. The CtoC Scheme will provide a new 13.6km long Busway that will connect Cambourne with the west of Cambridge. The Busway will run along the A428 / A1303 corridor. The Busway will be part new construction and part existing carriageway. It is intended that buses using the Busway will be optically guided.
- 1.2.2. The CtoC Scheme will also include a new Travel Hub (a park and ride facility) that will be situated on the north side of the A428 at Scotland Road, northeast of Hardwick and south of Dry Drayton. The Travel Hub will accommodate parking for up to 2,000 cars and 300 bicycles.
- 1.2.3. The CtoC Scheme will not generate traffic per se. It will enable future and existing residents travelling to Cambridge to adopt sustainable modes of travel, rather than rely on their cars. It will allow commuters travelling into Cambridge to change mode of travel, from car to the bus.
- 1.2.4. The section of Busway between Sterling Way and Broadway (on the eastern side of Cambourne) will be delivered as part of the Cambourne West residential development.

1.3 DEVELOPMENT TO THE WEST OF CAMBRIDGE

- 1.3.1. Substantial levels of new development are to be provided to the west of Cambridge. Such development includes residential development at Cambourne West and at Bourn Airfield. New commercial development is also coming forward at the University of Cambridge's West Cambridge site.

BOURN AIRFIELD

- 1.3.2. Bourn Airfield was allocated in the 2018 South Cambridgeshire Local Plan for the development of a new village of approximately 3,500 homes and is a long-term development opportunity, which will take place over the plan period, and beyond.
- 1.3.3. Sustainable transport connections to Cambridge and St Neots along the A428 corridor is a key strategic objective within the Bourn Airfield New Village Supplementary Planning Document (SPD) (2019) for the site, making CtoC an essential scheme for the overall success of the development.

- 1.3.4. The outline planning permission (REF S/3440/18/OL) only allows a total of 500 units to be delivered at Bourn Airfield without the CtoC scheme. The remaining 3,000 units are dependent upon the CtoC proceeding.
- 1.3.5. The section of the CtoC scheme that routes through Bourn Airfield must comply with the Supplementary Planning Document (SPD) and complement the development masterplan.
- 1.3.6. It should be noted that the outline planning permission is subject to the finalisation of the S106 agreement which has not yet been agreed.

1.4 SCHEME OBJECTIVES

The principal objectives of the CtoC Scheme are to provide a sustainable transport system that connects Cambourne with Cambridge and which,

- Supports the delivery of new housing and employment development,
- Improves connectivity to Cambridge by sustainable modes of travel from residential areas situated to the west of the city,
- Provides end to end journey time reliability (particularly compared with car journeys), and
- Provides some congestion relief along the A428/ A1303 corridor.

1.5 SCHEME BENEFITS

- 1.5.1. The CtoC Scheme will enable rapid and frequent bus services to serve the new development sites coming forward to the west of Cambridge. It will provide a direct bus route between Cambourne and Cambridge – stopping at Bourn Airfield and the University's West Cambridge site *en route* - which will encourage future occupants to travel by bus and reduce reliance on the private car.
- 1.5.2. The CtoC Scheme will require an emergency and maintenance access track which will run alongside the Busway. The track will be utilised as a shared use active travel path which will support journeys by pedestrians, cyclists and equestrians.
- 1.5.3. The Busway will run between Cambourne and Cambridge, passing to the north of the villages of Hardwick and Coton. Residents from Cambourne, as well as residents in nearby villages, will be able to take advantage of the Busway and travel directly into Cambridge, by walking, cycling or by bus.
- 1.5.4. The Travel Hub will intercept car trips on the A428 which would otherwise travel into Cambridge. Changing travel mode from car to the bus will enable car drivers to avoid congestion on the A1303 nearer to Cambridge and in the City itself.
- 1.5.5. Overall, the CtoC Scheme will provide the opportunity for persons travelling to Cambridge from the west to make that journey by bus and active forms of travel. The CtoC Scheme will have a beneficial effect on traffic conditions in Cambridge.

1.6 SCOPING

- 1.6.1. Cambridgeshire County Council (CCC) is the highway authority for the local road network. National Highways (NH) is the highway authority for the Strategic Road Network (SRN). Virtual meetings to discuss the scope of the TA were held with CCC on 14 June 2022 and NH on 15 June 2022.
- 1.6.2. A TA Scoping Note has been prepared which incorporates the principal points discussed with both CCC and NH. That scoping note was issued to both highway authorities on the 24th June 2022.

- 1.6.3. Matters established with the highway authorities include: the extent of the study area, the extent of committed development and agreement to the use of CCC's CSRM traffic model for the TA.
- 1.6.4. The TA Scoping Note (as issued to CCC and NH on the 24th June 2022) is enclosed at **Appendix A**.

1.7 MAKING CONNECTIONS

- 1.7.1. In 2023 the GCP consulted on its Making Connections scheme. This project includes options to:
- Introduce a Sustainable Travel Zone with road user charging to the Greater Cambridge area, and
 - Transform the bus network in Cambridge through the introduction of new bus routes with longer operating hours and flat fares.
- 1.7.2. Following the consultation the decision was made by GCP not to proceed with the Making Connections scheme.
- 1.7.3. At the time of specifying the Cambridge Sub-Regional Model (CSRM) runs for the CtoC scheme, a decision on the future of the Making Connections scheme had not been made. As such, this TA has considered two scenarios: without Making Connections and with Making Connections.
- 1.7.4. It is likely that in due course, alternative measures to reduce congestion and air pollution, may be introduced under the City Access programme to reduce the number of private car trips wanting to access the city centre. Therefore, the eventual scheme impact may lie somewhere between the two scenarios considered as a part of this TA, but the “without Making Connections” scenario provides a core appraisal.

2 CTOC SCHEME

2.1 OVERVIEW

- 2.1.1. The CtoC Scheme will provide a new 13.6km long Busway that will connect Cambourne with the west of Cambridge. The CtoC Scheme will also include a new Travel Hub (a park and ride facility) to be located at Scotland Farm, on the north side of the A428. Both the Busway and Travel Hub are described in detail below.

2.2 BUSWAY

ROUTE

- 2.2.1. The CtoC Scheme includes the construction of a Busway that will connect Cambourne with the west side of Cambridge. The Busway is comprised of new sections of carriageway (where the Busway traffic is segregated from the existing road network) and sections where existing roads will be used.
- 2.2.2. Working from west to east, the route will begin in Cambourne at Sterling Way. It will then head east along a section of segregated carriageway (to be created by the Cambourne West developer as part of a separate planning consent) along an existing footway/cycleway. The existing footway / cycleway will be recreated alongside the Busway.
- 2.2.3. The route then crosses Broadway via a new signal controlled junction and enters Bourn Airfield, where it passes around the western and northern perimeter of this future new community and where it will be accommodated on its own dedicated route.
- 2.2.4. The route then bears northeast out of Bourn Airfield and crosses St Neots Road at a new signal controlled junction, about 150m northwest of the Childerley Gate roundabout. The route then continues off road to the south of the A428 for approximately 1.2km before bearing due south to join St Neots Road at a new signal controlled junction.
- 2.2.5. The Busway continues east on St Neots Road until it reaches the southern roundabout of the St Neots Road/ Scotland Road grade-separated “dumbbell” junction with the A428. At this roundabout, buses will travel north across the A428 to access the new Travel Hub at Scotland Farm.
- 2.2.6. From the southern dumbbell roundabout, the Busway continues east on St Neots Road for about 2km, passing the northern edge of the village of Hardwick, until it reaches a location west of Long Road. At that position, St Neots Road is realigned and the Busway continues (in effect as an extension of St Neots Road) in a southerly direction. Continuity of east – west movements along St Neots Road is provided by a new priority junction between the Busway and St Neots Road.
- 2.2.1. A traffic signal controlled bus-gate will be located south of the new junction between the Busway and St Neots Road. This bus-gate will prevent unauthorised traffic from straying onto the Busway.
- 2.2.2. The route then continues east across farmland on an alignment that takes it north of the built settlement of Coton. The Busway crosses Cambridge Road before continuing across Coton Orchard to a new bridge that will carry it over the M11 Motorway. East of the M11 bridge crossing, the Busway enters the University of Cambridge’s West Cambridge University Campus where it passes along Charles Babbage Road.
- 2.2.3. From Charles Babbage Road the Busway bears south between existing campus buildings and enters West Fields, bearing east and south around the edge of the University’s athletics sportsground.

- 2.2.4. The Busway continues eastward along the Rifle Range track, crossing over Bin Brook via a new bridge. The Busway passes north of the Cambridge Rugby Ground and south of properties on Herschel Road, before connecting to Grange Road, where the Busway ends (but from where buses will be able to continue along existing streets in Cambridge).

JUNCTIONS

- 2.2.5. Signal controlled junctions will be provided where the Busway meets the existing road network, i.e. at Broadway, St Neots Road, Long Road, Cambridge Road (Coton) and Grange Road. Facilities for pedestrians and cyclists will be provided at these junctions.
- 2.2.6. As stated above, a traffic signal controlled bus-gate will be located south of the new junction between the Busway and St Neots Road.
- 2.2.7. The traffic signals will respond to buses approaching them. Given the infrequency with which signals will change (the signals will only change when called) no junction modelling has been undertaken for this TA.

PROVISION FOR ACTIVE TRAVEL

- 2.2.8. An emergency and maintenance access track will run alongside the Busway. This will also function as a shared use active travel path which will accommodate pedestrian, cycling, wheeling and equestrian movement.

BUS STOPS

- 2.2.9. New bus stops are to be provided along the Busway at; Cambourne, west of Bourn Airfield, east of Bourn Airfield, Hardwick, Coton and the University's West Cambridge campus.
- 2.2.10. Bus stops will be furnished with shelters, lighting and real time bus information displays.

BUS SERVICES

- 2.2.11. The Busway will accommodate new frequent bus services which will run between Cambourne, the Travel Hub and Cambridge city centre.
- 2.2.12. Detailed information on new bus services is provided in the Bus Strategy Report prepared by Mott MacDonald (dated January 2020) for the Outline Business Case.
- 2.2.13. In summary the following bus services are assumed to be associated with the CtoC Scheme and coded into the strategic transport model (CSRM):
- 2.2.14. The Busway will accommodate new frequent bus services which will run between Cambourne, the Travel Hub and Cambridge city centre.
- 2.2.15. In summary the following bus services are assumed to be associated with the CtoC Scheme and coded into the strategic transport model (CSRM):
- Routes combining to provide 6 buses per hour (10-minute headway) between Cambourne High Street and Cambridge City Centre:
 - Huntingdon – Papworth – Cambourne – Cambridge City Centre (2 buses per hour);
 - St Neots – Cambourne – Cambridge City Centre (2 buses per hour);
 - Cambourne – Cambridge City Centre (2 buses per hour);

- Cambourne – Cambridge Biomedical Campus (2 buses per hour between Cambourne and CBC, 4 buses per hour between new P&R and CBC)

- 2.2.16. New bus services are expected to operate between approximately 6.00am and midnight, in line with existing Cambridge Guided bus services. All of these will call into the Scotland Farm Travel Hub and use the Busway for part of their route.
- 2.2.17. New bus services will typically total up to 10 services an hour in each direction, although service frequency may vary at different times of the day. The Travel Hub is likely to be accessible 24 hours per day but will be expected to be used most intensively between 6.00am and 7.00pm.

2.3 TRAVEL HUB

- 2.3.1. The Travel Hub will be located at Scotland Farm, on the northern side of the A428.
- 2.3.2. The Travel Hub will provide parking for up to 2,000 vehicles and 300 cycles. It will provide six bus stops and waiting facilities for bus passengers.
- 2.3.3. Access to the Travel Hub will be via a new signalised junction on Scotland Road, immediately to the north of the A428/ Scotland Road/ St Neots Road grade separated junction.

3 PLANNING AND TRANSPORT POLICY

3.1 OVERVIEW

- 3.1.1. In May 2017, a directly elected Mayor took office, and the Cambridgeshire and Peterborough Combined Authority (CPCA) was established as part of a devolution agreement with Central Government. The CPCA now holds strategic transport powers and serves as the Local Transport Authority for the Cambridgeshire and Peterborough region. The Mayor is responsible for shaping the overall transport strategy and preparation of the Local Transport and Connectivity Plan (LTCP).
- 3.1.2. Cambridgeshire County Council (CCC) is the Highway Authority for Cambridgeshire, overseeing the management and maintenance of the local highway network. National Highways are responsible for managing and improving the strategic road network. The Greater Cambridge Shared Planning team which is a shared service for Cambridge City Council and South Cambridgeshire District Council (SCDC) are responsible for the development of the Local Plan, Supplementary Planning Documents and Transport Strategies.
- 3.1.3. The Greater Cambridge Partnership (GCP) is the delivery body for the Greater Cambridge City Deal and is a partnership of the County Council, City Council and SCDC.
- 3.1.4. A summary of policies relevant to the application is summarised below.

3.2 PLANNING POLICY

NATIONAL PLANNING POLICY FRAMEWORK

- 3.2.1. The National Planning Policy Framework (NPPF), revised by the Ministry of Housing, Communities and Local Government (MHCLG) in December 2023, provides the Government's planning policies for England and how these are expected to be applied.
- 3.2.2. When considering development proposals, the NPPF paragraph 114 advises that development proposals should ensure:
- appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
 - safe and suitable access to the site can be achieved for all users;
 - the design of streets, parking areas, other transport elements and the content of associated standards reflect current national guidance, including the National Design Guide and the National Model Design Code; and
 - any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.
- 3.2.3. The NPPF paragraph 115 notes that development should only be prevented, or refused, on highways grounds, if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.
- 3.2.4. The NPPF paragraph 116 adds that developments should:
- give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality

public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

- address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

3.2.5. The NPPF paragraph 117 states that, “All developments that will generate significant amounts of movement should be required to provide a travel plan and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed”.

CAMBRIDGE LOCAL PLAN (2018)

3.2.6. The Cambridge Local Plan replaces the Plan from 2006 and outlines policies and proposals for future development and spatial planning requirements to the year 2031.

The Plan aims to:

- Promote greater pedestrian and cycling priority through and to the city centre, and potentially incorporating public realm and cycle parking improvements; and
- Promote sustainable transport and access for all to and from major employers, education and research clusters, hospitals, schools, and colleges

3.2.7. The Plan makes a major shift to a sustainable development strategy based upon significant growth located on the edges of Cambridge and the delivery of new settlements in South Cambridgeshire. Policy 80 ‘Sustainable access to development’ states:

3.2.8. *“Development will be supported where it demonstrates that prioritisation of access is by walking, cycling and public transport, and is accessible for all. This will be achieved by:*

- *Ensuring major developments on the edge of the city and in the urban extensions are supported by high quality public transport linking them to Cambridge’s city centre and major centres of employment. The public transport links should be within walking and cycling travel distance of the development;*
- *Supporting 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. Areas where public transport, pedestrian and cycle movement is difficult or dangerous will be improved and, where possible, have further capacity for these sustainable modes provided;*
 - *Ensuring accessibility for those with impaired mobility; and*

- *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. In addition, funding for high quality physical provision of these routes will be required, both within and adjacent to the proposed developments. The proposed routes are identified in Cambridgeshire County Council's Transport Strategy for Cambridge and South Cambridgeshire."*

SOUTH CAMBRIDGESHIRE LOCAL PLAN (2018)

- 3.2.9. The South Cambridgeshire Local Plan was adopted in 2018 by South Cambridgeshire District Council, replacing the previous South Cambridgeshire Local Development Framework.
- 3.2.10. This Local Plan provides a framework for new development to meet the needs of South Cambridgeshire and its residents, underpinned by the Government's commitment to sustainable development.
- 3.2.11. Policy SS/7 refers to a new village at Bourn Airfield. Land based on Bourn Airfield, south of the A428, is allocated for a new village of approximately 3,500 dwellings which will include the provision of a segregated bus link from Cambourne to Bourn Airfield that crosses the Broadway and goes through the development to the junction between St Neots Road and Highfields Road.
- 3.2.12. Policy SS/8: Cambourne West, under the Sustainable Villages section of the Local Plan, states that land north west of Lower Cambourne, including an area within the current Business Park "is allocated for the sustainable, fourth linked village to Cambourne of approximately 1,200 dwellings by 2031 with high levels of green infrastructure", which will generate additional travel demands.

DRAFT GREATER CAMBRIDGE LOCAL PLAN

- 3.2.13. Cambridge City Council and South Cambridgeshire District Council are working together to create a joint Local Plan for the two areas – which together are referred to as Greater Cambridge. This is the first time both planning authorities will have a joint Local Plan, and it will ensure that there is a consistent approach to planning and building across both areas up to 2041.
- 3.2.14. The Plan is still at an early stage of development. There are no confirmed proposals for allocated development sites in the Local Plan apart from on the sites that were allocated in the adopted 2018 Local Plans for Cambridge and South Cambridgeshire, and sites which already have planning permission. The new Local Plan is expected to be adopted in 2024 or 2025.
- 3.2.15. The draft Local Plan's Policy S/CB states that there is an intention to identify Cambourne as a broad location for future growth in the 2030's to respond to the opportunity that will be provided by the proposed East West Rail that includes a station at Cambourne.
- 3.2.16. Additionally, Policy S/CB suggests that future development at Cambourne will need to take account of numerous considerations including;
 - The relationship with Cambourne and Bourn Airfield, and how to make the area more sustainable, through the mix of services, employment and transport opportunities offered by the area as whole.

- Making effective connections within the new development and with Cambourne for public transport and active travel, as well as connections to surrounding villages so they can also benefit.

3.3 TRANSPORT POLICY

TRANSPORT DECARBONISATION PLAN (DFT, 2021)

- 3.3.1. The Transport Decarbonisation Plan, 'Decarbonising Transport: A Better, Greener Britain', sets out government's commitments and the actions needed to decarbonise the entire transport system in the UK.
- 3.3.2. This plan identifies accelerating modal shift to public and active transport as a strategic priority for achieving the Net Zero goals by 2050. The plan aims to make public transport and active travel the natural first choice for daily activities. Better quality infrastructure through high quality road design, dedicated routes, and networks, and enabling people to access cycles are noted to make people feel safer and more confident walking and cycling for short journeys. A cohesive, integrated and affordable net zero public transport network designed for the needs of the passengers is recognised to empower users to make sustainable end to end journeys and enable inclusive mobility.
- 3.3.3. The plan notes that efforts must be made to increase the share of journeys taken by public transport as buses and coaches play a crucial role in transport achieving net zero and driving green transformation. In addition to mode shift, the plan recognises the need for a zero-emission bus fleet, which is expected to achieve long term operating cost savings, which can be reinvested in improved service frequencies, lower fares and other improvements for bus users.
- 3.3.4. The CtoC objectives of encouraging modal shift through provision of reliable public transport with improved journey times and frequencies is aligned with the aims of the Transport Decarbonisation Plan. The active transport infrastructure improvement element of the scheme will encourage walking and cycling by enhancing safety for users, while the CtoC scheme OBC to date has been developed assuming initial operation using standard Euro VI buses.

LOCAL TRANSPORT AND CONNECTIVITY PLAN (2023)

- 3.3.5. The Local Transport and Connectivity Plan (LTCP) was approved in November 2023 and is the Combined Authority's long-term strategy to make transport in Cambridgeshire and Peterborough better faster, greener, and more accessible for everyone. It sets out a vision and goals for how transport supports a better future and describes the projects needed to make that new future possible.
- 3.3.6. All future transport projects for Cambridgeshire and Peterborough will be guided by the LTCP. It is an update to the first Local Transport Plan for Cambridgeshire and Peterborough Published in 2020.
- 3.3.7. The "Greater Cambridge" Local Area Section of the LTCP includes a description of the transport measures which are proposed to support growth to the west of Cambridge. The LTCP states:

"Significant growth is planned along the A428/A1303 corridor towards Cambourne, St Neots and onwards to Bedford. Around 8,000 new homes are planned for major new developments at Cambourne West, Bourn Airfield and Eddington in North West Cambridge, connecting to a significant employment cluster to the east of the corridor at West Cambridge. Public transport will be transformed by GCP's Cambourne to Cambridge scheme offering segregated public transport and active travel provision. The scheme includes a new Mobility (Travel) Hub at Scotland Farm as well as parallel

facilities for active travel, wheelers, and horse riders. A new railway station at Cambourne as part of the East West Rail scheme will offer rail connections to Cambridge and St Neots”.

TRANSPORT STRATEGY FOR CAMBRIDGE AND SOUTH CAMBRIDGESHIRE (2014)

- 3.3.8. The Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) was adopted in 2014 by Cambridge County Council to encourage local authorities to plan together for both sustainable growth and economic prosperity.
- 3.3.9. The TSCSC provides a detailed policy framework and programme of schemes for the area to address current issues.
- 3.3.10. The TSCSC is consistent with the Cambridgeshire LTP and also supports both the Cambridgeshire and South Cambridgeshire Local Plans, detailing the transport infrastructure and services required to deliver the areas’ planned growth.
- 3.3.11. Policy TSCSC 7: Supporting Sustainable Growth states;
“New development will be required to 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”
- 3.3.12. Policy TSCSC 7 continues to outline the ambition to introduce outer park & ride sites, with small rural interchanges also being introduced, as well as stating that if bus or guided bus services are the focus of a corridor, frequencies of every 15 minutes or better will be sought.
- 3.3.13. Policy TSCSC 8: Improving Bus Services sets out policy to improve bus services, identifying the role of buses in providing high quality transport on most major corridors into Cambridge. Policy TSCSC 8 notes significant growth in the Cambourne to Cambridge Corridor is likely to exacerbate congestion and therefore presents a focus on “achieving journey time and quality of service for buses on this corridor that equals or exceeds the equivalent car trip in peak periods.
- 3.3.14. Policy TSCSC 9: Access to Jobs and Services identifies the Cambourne to Cambridge [Figure 4.3] to have new high quality bus routes into Cambridge and that inbound bus priority measures will be introduced on Maddingley Road between the M11 and Queens Road in Cambridge.

CAMBRIDGESHIRE ACTIVE TRAVEL STRATEGY (2023)

- 3.3.15. Cambridgeshire’s Active Travel Strategy provides a comprehensive set of policies that will enable quality provision of active travel infrastructure and initiatives in Cambridgeshire to contribute to the County Council’s target to achieve Net Zero carbon by 2045. By enabling and encouraging more people to travel by active travel modes, the number of journeys made by car can be reduced.
- 3.3.16. The strategy sets out to make active travel safe, pleasant and convenient in order to become the preferred travel choice for local journeys. It will have a significant role to play in addressing the following:
 - Improvements to Cambridgeshire’s wider transport network by reducing the pressure of ever-increasing vehicular traffic on the roads and the significant impact this has.
 - Sustainable growth in Cambridgeshire through well-connected and integrated sustainable transport networks and supporting infrastructure.
 - Achieving a number of significant environmental targets at a local level, including for Net Zero carbon, air quality and biodiversity.

- Achieving a significant positive impact on people's health, wellbeing and quality of life by enabling more active lifestyle choices, creating pleasant spaces for people to travel along and spend time in, and provide affordable, inclusive access to key services for people of all ages and ability.
- Ensuring that all new developments meet a common standard of infrastructure provision for inclusive walking and cycling across the county.
- The Cambourne to Cambridge busway includes a shared active travel path and emergency maintenance access offering the option of walking, cycling and horse riding for shorter journeys. It also supports the first and last mile journeys to be made via active travel. Therefore, the scheme greatly aligns with Cambridgeshire's active travel strategy, supporting the area in sustainable growth, reaching environmental targets, promoting healthier lifestyles and overall, a better quality of life.

CAMBRIDGESHIRE RIGHTS OF WAY IMPROVEMENT PLAN (2016)

- 3.3.17. The Rights of Way Improvement Plan (ROWIP) was adopted in 2006 as part of the Cambridgeshire Local Transport Plan 2006-2011 (LTP). This document, published in April 2016 provides an update to the ROWIP in line with the requirements of the Countryside and Rights of Way Act 2002. This update summarises the progress made since the ROWIP was adopted in 2006 and sets out future challenges for rights of way and countryside access to 2031 in the form of updated Statements of Action and forms part of the LTP3.
- 3.3.18. The main objective of the ROWIP is 'to manage, improve and promote a Public Rights of Way network as an integral part of a wider transport system which meets the needs of the whole community for safe sustainable local transport, which improves public health, enhances biodiversity, increases recreational opportunities and contributes to the rural economy'.
- 3.3.19. The core of the Plan is a Statement of Action, which sets out how the local rights of way network will be managed and improved. The eight Statements of Action are as follows:
- SOA1: Making the countryside more accessible;
 - SOA2: A safer and health-enhancing activity;
 - SOA3: 72,500 new homes;
 - SOA4: Knowing what's out there;
 - SOA5: Filling the gaps;
 - SOA6: Better land management;
 - SOA7: Develop definitive map and other records; and
 - SOA8: A better countryside environment.
- 3.3.20. The ROWIP seeks to continue many of the projects already started within the County, including selected surface improvements, making more rights of way information available online and securing rights of way improvements as part of the A14 scheme. Within the ROWIP there is an increased focus on encouraging healthy lifestyles by working closely with the newly established Cambridgeshire Health and Wellbeing Board. Increased working in partnership with statutory and voluntary agencies such as the Local Access Forum and town and parish councils is recognised as being key to delivering improvements to countryside access.
- 3.3.21. The value of the Public Rights of Way network in terms of encouraging sustainable transport modes and helping to mitigate the effects of climate change is also reflected in future priorities. Suitable

provision for Non-motorised Users in new developments is recognising in playing a greater role in encouraging sustainable ways of travelling.

CAMBRIDGESHIRE'S LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN (2022)

- 3.3.22. Cambridgeshire's Local Cycling and Walking Infrastructure Plan (LCWIP) forms part of the government's ambition to increase walking and cycling, particularly to school, in the UK by 2025 as outlined in the Cycling and Walking Investment Strategy (CWIS, 2017 and CWIS 2, 2022). The CWIS sets out the government's aim to make walking and cycling the natural choice for all short journeys, or as a part of a longer journey.
- 3.3.23. The LCWIP forms part of a long-term vision to improve Cambridgeshire's walking and cycling networks in order to increase the number of residents travelling on foot and by cycle and thereby improve the health and well-being of all those living and working in Cambridgeshire.
- 3.3.24. The aim is to build on the already high levels of cycling in Cambridge and to spread the cycling culture out to the rest of the county whilst encouraging more walking by improving journeys in town centres and to schools and employment areas. Walking and cycling routes to transport hubs are particularly important and feature strongly in the routes proposed for improvement.
- 3.3.25. The proposed cycling and walking infrastructure along the busway between Cambourne and Cambridge will create the opportunity for commuters to mode shift. It will allow people to use the infrastructure as part of their longer journeys or for short-distance journeys, for example for their first and last mile travel. The high-quality infrastructure will provide a safer, healthier and more affordable alternative to personal car usage.

4 EXISTING TRANSPORT CONDITIONS

4.1 OVERVIEW

4.1.1. This chapter describes the existing transport arrangements within the Study Area.

4.2 STUDY AREA

4.2.1. The study area of this TA is shown in Figure 4-1 below. This area has been defined by a review of traffic modelling outputs. The study area has been established with both CCC and NH.

4.2.1. The study area is bounded by: Rouges Lane, Boxworth Road and A14 to the northeast; Cambridge Ring Road to the east; the B1046 to the south; and A1198 to the west. The A428 runs through the centre of the study area.

4.2.2. The M11 is situated in the east of the study area, connecting to the A14 to the north. Other notable routes within the study area include the A1303 Madingley Road which connects the A428 to Cambridge and the A1307 Huntingdon Road which provides connectivity between the north of the study area and the centre of Cambridge.

4.2.3. The study area includes the large and medium settlements of Cambourne, Hardwick, Coton and Cambridge as well as the smaller rural communities of Eltisley, Dry Drayton, Papworth Everard, Bar Hill and Elsworth.

Figure 4.1: Transport Assessment Study Area



4.3 TRAVEL PATTERNS

- 4.3.1. Journey to Work data from the 2011 Census has been analysed to understand existing travel patterns in the study area. The results have been used to understand the travel behaviour of people living and working in the area surrounding the CtoC Scheme.
- 4.3.2. It is to be noted that 2011 Census data continues to be widely used for transport planning purposes. It is appropriate to use 2011 Census data for this TA.
- 4.3.3. Some limited Journey to Work data is available from the 2021 Census. However, Census 2021 took place during the coronavirus (COVID-19) pandemic, a period of unparalleled and rapid change. The national lockdown, associated varying coronavirus guidance and furlough measures will have affected the travel to work topic. For that reason, 2021 Census data is not used in this TA.
- 4.3.4. Table 4.1 summarises the Journey to Work mode share of usual residents living in Cambourne, Cambridge and South Cambridgeshire. The results for residents working mainly at or from home has been excluded to make it easier to clearly see the modes used to travel to work.

Table 4.1: 2011 Census Journey to Work Mode Share – Usual Residents in Cambourne, Cambridge and South Cambridgeshire

Mode	Cambourne	Cambridge	South Cambridgeshire
Train & Underground	0%	4%	1%
Bus	10%	8%	3%
Taxi	0%	0%	0%
Motorcycle/Scooter	1%	1%	1%
Car/Van driver	59%	50%	75%
Car/Van passenger	5%	4%	5%
Bicycle	7%	22%	7%
Walk	18%	10%	8%
Other	0%	0%	0%
Total	100%	100%	100%

- 4.3.5. Table 4.1 shows that 80% of travel to work trips in South Cambridgeshire are by car/van. This is to be expected as South Cambridgeshire is relatively rural in nature and opportunities to travel by sustainable modes are limited. In Cambridge the mode share of travel to work car/van trips is 54%, which reflects the greater opportunities to walk, cycle and travel by public transport in the city.

- 4.3.6. It is noted that the car/ van travel to work mode share in Cambourne is 64%, which indicates a high reliance on the private vehicle and suggests there are limited opportunities for residents to travel by sustainable modes. It is reasonable to assume that, without intervention, new development at Cambourne West and Bourn Airfield would be equally dependent on the car.

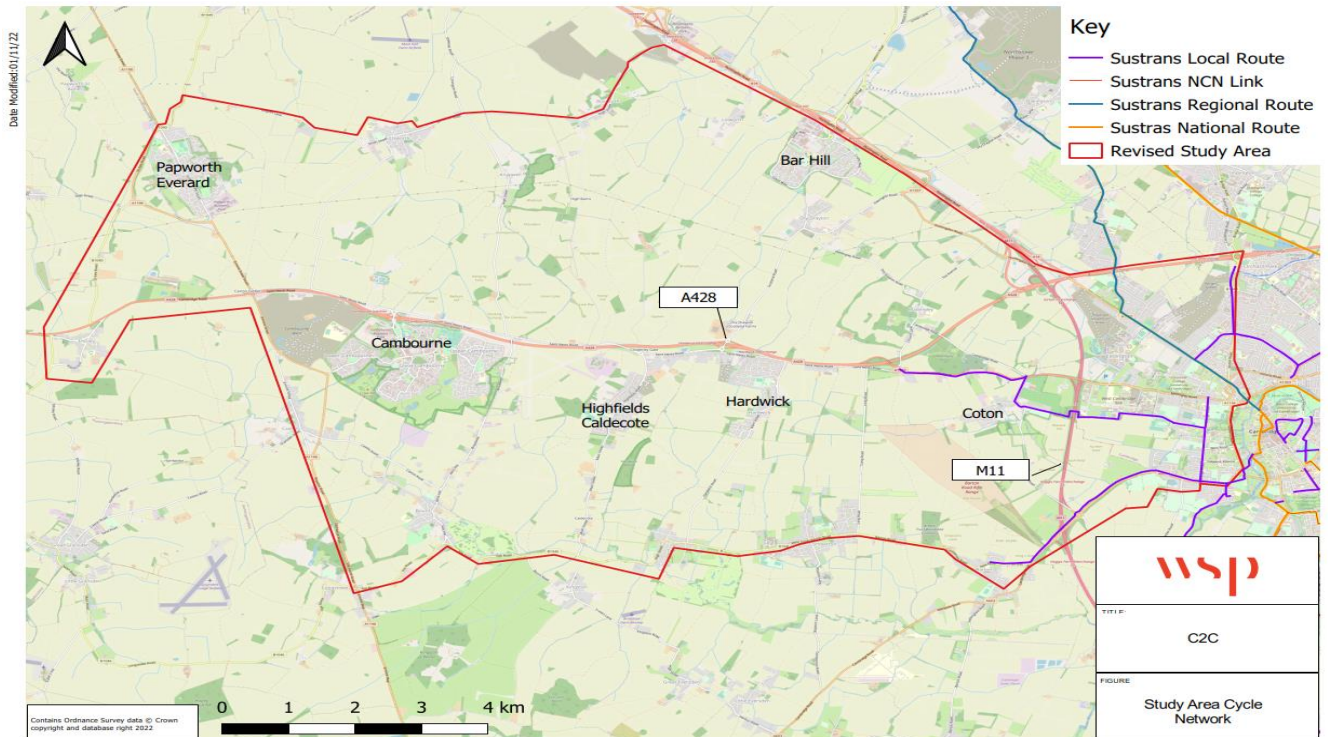
4.4 ACTIVE TRAVEL

- 4.4.1. This section describes the existing active travel network within the study area.

CYCLE NETWORK

- 4.4.2. The existing cycle linkage between the area west of Cambridge and Cambridge itself is poor. The M11 motorway acts as a barrier, with cyclists having to use Junctions 12 and 13 or the intermediate cycle crossing east of Coton to get across the motorway.
- 4.4.3. At present there is not a continuous and convenient segregated cycle route between Cambourne and Cambridge, with cyclists instead required to travel on carriageway along St Neots Road before joining a shared foot and cycleway that runs along the A1303 towards Cambridge.
- 4.4.4. Figure 4.2 shows the existing Sustrans cycling routes within the study area (on-road and off-road routes). Figure 4.2 shows that there is only one existing Sustrans cycle route within the vicinity of the CtoC Scheme which is NCN Route 24. This route is situated to the east of the study area and runs between Oakington and the centre of Cambridge. Within the study area, the route runs south along Girton Road before running southeast along the A1307 Huntingdon Road and Castle Street. NCN Route 24 intersects the boundary of the study area at the Castle Street / Northampton Street / Chesterton Lane junction. This route is principally on-carriageway and therefore primarily likely to be used by more experienced cyclists confident at cycling on-road.

Figure 4.2: Sustrans Cycle Routes



4.4.5. In addition to the Sustrans cycle route there are a number of local cycling routes within the study area. These are predominantly located to the east of the study area and include:

- A signed on-carriageway cycle route and off-carriageway cycle route connecting Madingley Road to the NCN Route 24.
- A signed on-carriageway route along Grange Road (the end point of the Busway) connecting Madingley Road to Barton Road.
- Local cycle links to the west of Cambridge that provides connectivity to villages in the east and centre of the study area including Coton, Hardwick and Madingley.
- Local cycle links along Cambridge Road that connects Coton and Madingley, intersecting Madingley Road and connecting to High Street, Coton.

4.4.6. Further detail on the local cycle routes is provided in **Appendix B**.

4.4.7. For the purposes of this TA, it is assumed that persons using micro-scooters and electric bikes will use the cycling facilities described above.

PEDESTRIAN NETWORK

4.4.8. The pedestrian infrastructure within the study area is limited and generally confined to urban areas and along inter-urban routes such as St Neots Road. There is generally no dedicated infrastructure to facilitate the movement of pedestrians along rural routes.

4.4.9. Pedestrian infrastructure becomes more prominent to the east of the study area, from Madingley Road Park and Ride into Cambridge.

4.4.10. A narrow footway is provided along the southern side of St Neots Road. At the eastern end of the route on Grange Road, footpaths are provided on both sides of the road, providing pedestrian connections along Grange Road to A1303 Madingley Road and A603 Barton Road.

4.4.11. The proposed Scotland Farm Travel Hub site is accessible from Hardwick via the existing footway which runs along St Neots Road and through the A428 / Scotland Road grade separated junction. The eastern end of the travel hub site can also be accessed from St Neots Road via the “blue bridge” crossing over the A428.

PUBLIC RIGHTS OF WAY

4.4.12. PRoWs intersected by the Busway are:

- Bridleway 39/30: This runs between the A1303 Madingley Road and the M11 footbridge, to the east of the M11.
- Footpath 39/31: This connects with Bridleway 39/30, running east to Wilberforce Road
- Footpath 55/2: This runs between A1303 Madingley Road and High Street, Coton

4.4.13. In addition, Footpath 66/17 runs from Dry Drayton to the A428 to the north of Hardwick, running east of the travel hub. The footpath crosses the A428 to the southeast of the Travel Hub before connecting with St Neots Road/ Busway.

4.4.14. To understand usage of Bridleway 39/30 a traffic survey was undertaken between 4 June 2024 and 10 June 2024. This showed a very low number of pedestrians and cyclists using the bridleway each day. On an average day 15 pedestrians and 2 cyclists were recorded using the bridleway.

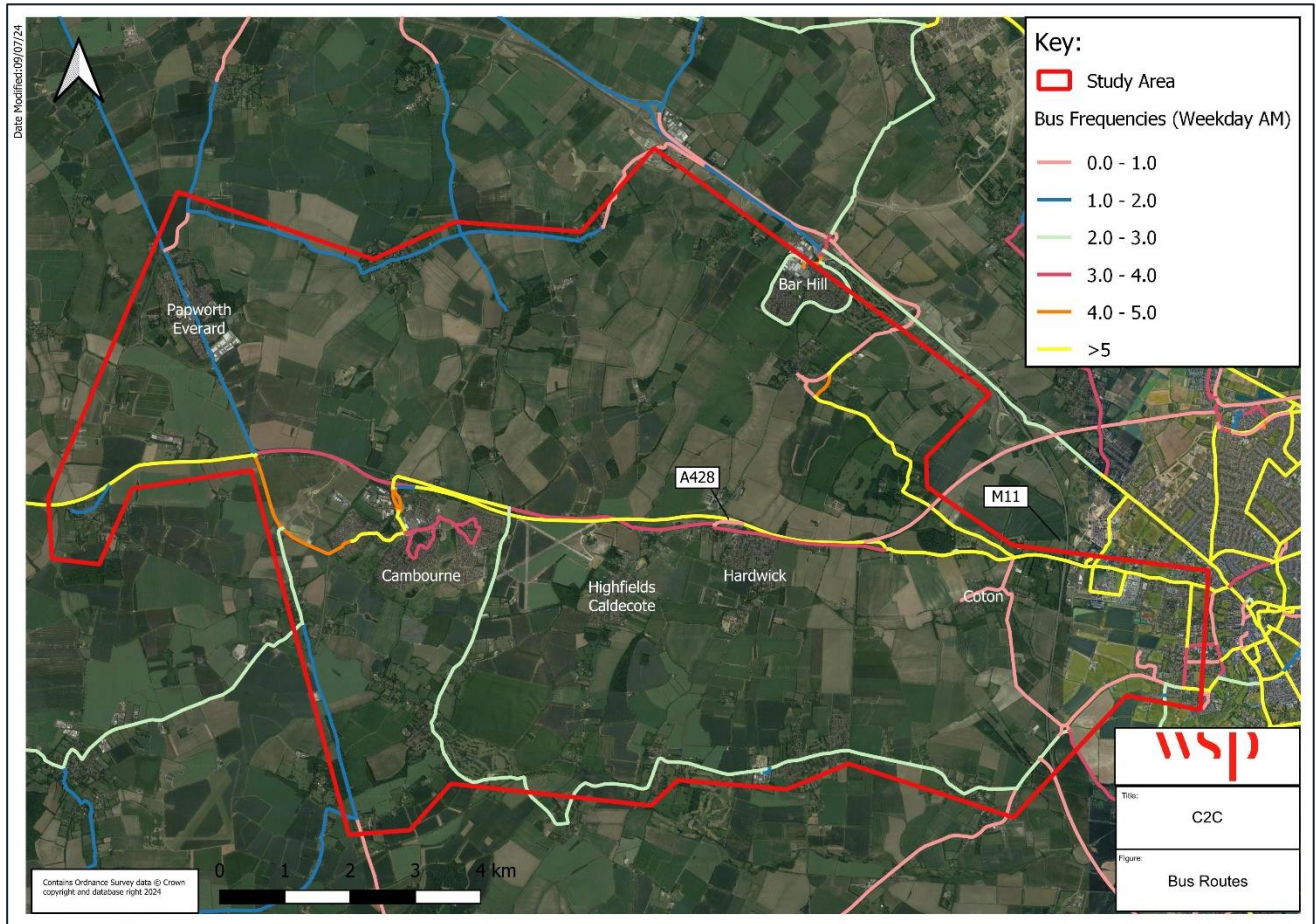
4.5 PUBLIC TRANSPORT

4.5.1. The existing public transport arrangements are described below.

Bus Network

4.5.2. Figure 4.3 below shows the frequency of existing bus services on a typical Monday in the AM peak (services between 07:00-09:00).

Figure 4.3: Existing Bus Services



4.5.3. **Figure 4.3** shows the majority of existing bus services within the study area run along the A428 / A1303 corridors between Cambourne and Cambridge and B1046 to the south of the study area. Rural parts of the study area, away from the A428 / A1303 corridor, are generally poorly served by existing bus services.

4.5.4. Between 07:00 and 09:00 there are typically more than 5 buses running along the A428 / A1303 corridor and 3 to 4 buses running along St Neots Road. Between 07:00 and 09:00 there are typically 1 to 2 buses running along the B1046 to the south of the corridor. Rural parts of the corridor, away from the A428, A1303 and B1046 are poorly served by existing bus services. (These frequency figures are collated from bus timetable information from July 2024).

4.5.5. **Table 4.2** summarises the existing bus services that currently operate between Cambourne and Cambridge.

Table 4.2: Cambourne to Cambridge Bus Services

Service	Mon - Fri		Saturday		Sunday		Journey Time (between Cambourne and Cambridge)
	First / Last Service	Frequency	First / Last Service	Frequency	First / Last Service	Frequency	
Service 4: Cambridge-Cambourne	06:36/23:36	30 minutes until 19:36 then every hour	Same as Mon - Fri	Same as Mon - Fri	09:36/18:36	Hourly	Approx. 25 minutes
Service 4: Cambourne-Cambridge	06:03/23:03	30 minutes until 18:33 then every hour	Same as Mon - Fri	Same as Mon - Fri	09:01/19:01	Hourly	Approx. 25 minutes
Service 905*: Cambridge-St Neots - Bedford	05:55/23:15	Hourly	06:15/23:15	30 minutes until 17:15 then every hour	08:15/20:15	Hourly	n/a
Service 905*: Bedford-St Neots-Cambridge	04:30/21:50	Hourly	04:50/21:50	30 minutes until 17:15 then every hour	06:50:18:50	Hourly	n/a
Service 18: St Neots-Cambridge	06:38/21:03	Hourly	07:06/21:00	Same as Mon - Fri	No Service	No Service	Approx 60 minutes
Service 18: Cambridge - St Neots	06:04/19:51	Hourly	06:04/19:52	Same as Mon - Fri	No Service	No Service	Approx. 60 minutes
Whippet Express X2: Huntingdon-Cambourne-via M11-Addenbrooke's-Cambridge Railway Station	07:51/10:11	Infrequent, only 2 services: 07:51/10:11	No Service	No Service	No Service	No Service	Approx. 30 mins
Whippet Express X2: Cambridge Railway Station-Addenbrooke's-via M11-	12:51/16:59	Infrequent, only 2 services: 12:51/16:59	No Service	No Service	No Service	No Service	Approx. 30 mins

Service	Mon - Fri		Saturday		Sunday		Journey Time (between Cambourne and Cambridge)
	First / Last Service	Frequency	First / Last Service	Frequency	First / Last Service	Frequency	
Cambourne- Huntingdon							
Whippet Express X3: Huntingdon- Cambourne- Cambridge Centre- Cambridge Railway Station- Addenbrooke's	05:42/21:33	Hourly	05:42/21:33	Hourly	05:42/ 19:37	Hourly	20-30 minutes
Whippet Express X3: Addenbrooke's- Cambridge Railway Station- Cambridge Centre- Cambourne- Huntingdon	07:01/23:19	Hourly	07:38/23:19	Hourly	07:38/ 21:05	Hourly	20-30 minutes

(Source: Stagecoach November 2024; Whippet November 2024)

* Bus Service 905 (Cambridge-St Neots – Bedford) is an express service that runs along the A428 but it does not serve Cambourne

- 4.5.6. The typical frequency of existing bus services operating Monday to Saturday between Cambourne and Cambridge is one bus every 30 minutes, reducing to one bus per hour in the early evening.
- 4.5.7. The average journey time between Cambourne and Cambridge is around 30 minutes, extending to 50 minutes on some services.
- 4.5.8. Existing bus stops are generally located in Papworth Everard, Cambourne, Hardwick and Cambridge along the A428 / A13030 corridor. However, there are also a number of bus stops in settlements to the south of the study area including Toft, Comberton and Bourn.
- 4.5.9. There are three bus stops within the vicinity of the proposed Travel Hub. These are Scotland Road bus stop, Millers Way bus stop and Cambridge Road bus stop. These are on the Service 4 route between Cambourne and Cambridge.

Rail Network

- 4.5.10. There are no railway stations along the route of the CtoC scheme. The nearest railway station to the CtoC Scheme is St Neots Railway Station, approximately 14.5km (9 miles) to the west of Cambourne and approximately 18km (11 miles) from the proposed Travel Hub.

- 4.5.11. Cambridge Railway Station is approximately 3.4km (2 miles) southeast the eastern end of the Busway at Grange Road, whilst Cambridge North Railway Station is approximately 6.5km (4 miles) northeast of Grange Road. South Cambridge Railway Station which is currently under construction is approximately 3.7km (2 miles) southeast of Grange Road.

4.6 HIGHWAY NETWORK

- 4.6.1. This section describes the highway network in the study area. The roads described herein which form part of the Strategic Road Network (SRN), and are therefore the responsibility of National Highways, are the A428 and the M11. All other roads described herein form part of the local highway network and are the responsibility of CCC who are the Local Highway Authority.

A428

- 4.6.2. The A428 runs predominantly to the north of the CtoC scheme. It connects with the A1 at St Neots, situated to the west of the study area, and with Junction 31 of the A14 to the northeast of Cambridge and Junction 14 of the M11 motorway, situated to the east of the study area.
- 4.6.3. The A428 route runs broadly parallel to the A14 to the north, providing a second strategic west-east link between the A1 and Cambridge. In conjunction with the A421, the A428 also provides a strategic link to the M1 motorway near Milton Keynes.
- 4.6.4. The A428 between St Neots and Cambridge forms part of the Strategic Highway Network and is managed by National Highways. The A428 from its Caxton Gibbet junction with the A1198 runs eastwards as a dual carriageway as far as its junction with the A14 to the northwest of Cambridge.

ST NEOTS ROAD

- 4.6.5. St Neots Road is the detrunked former A428 (previously A45) which is a single carriageway road that starts in the west of the study area, south of Elsworth / north west of Cambourne, and runs in an east / west direction largely in parallel to the current A428 before connecting with the A1303 approximately 2.7 km (1.8 miles) to the west of the M11 motorway.
- 4.6.6. St Neots Road provides east-west connectivity within the study area and serves the settlements of Cambourne, Highfields Caldecote and Hardwick. St Neots Road also provides links to the settlements of Madingley, Elsworth, Knapwell and Dry Drayton.

SCOTLAND ROAD

- 4.6.7. Scotland Road is situated between Highfields Caldecote and Hardwick and connects the village of Dry Drayton with the A428. It is a single carriageway road that runs in a north / south direction. A footway runs along the eastern side of the carriageway for approximately 400m from the A428 / St Neots Road / Scotland Road grade separated roundabout.
- 4.6.8. The proposed Travel Hub will be accessed from the southern end of Scotland Road approximately 150m north of the Scotland Road / A428 roundabout.

A1303 MADINGLEY ROAD

- 4.6.9. The A1303 Madingley Road is a single carriageway road that runs in an east-west direction between the A428 at Madingley Mulch and the A1134 in Cambridge, crossing over the M11 at the western edge of Cambridge.

- 4.6.10. The A1303 Madingley Road provides access to the Madingley Road park and ride (situated immediately to the east of the M11 Junction 13), providing public transport connections into the centre of Cambridge. The A1303 also provides access to the Cambridge University Park and Cycle development.
- 4.6.11. Footways are provided along both sides of the A1303 Madingley Road. Sections of cycleway also run along the A1303 Madingley Road, however these vary in standard and are not continuous.

GRANGE ROAD

- 4.6.12. Grange Road is situated at the eastern end of the CtoC Scheme in west Cambridge. It is a single carriageway route that runs in a north / south direction for approximately 1.6km (1 mile) and connects the A1303 Madingley Road to the north with the A603 Barton Road to the south.
- 4.6.13. Grange Road serves many educational and residential areas between the A1303 and A603 and provides connections to Cambridge University sports grounds and Colleges including Trinity College grounds, Cambridge University Library and Robinson, Selwyn, Newnham and Clare Hall Colleges. St John's College School and its playing fields are also accessible from the north of Grange Road.
- 4.6.14. Grange Road connects with the A1134 Queen's Road via a footpath that runs through St John's College Playing Fields, Burrell's Walk to the north of Cambridge University Library, West Road and Sidgwick Avenue.

STERLING WAY

- 4.6.15. Sterling Way is situated at the western end of the CtoC Scheme in Upper Cambourne, to the east of Great Cambourne and west of Bourn Airfield. It is approximately 1km (0.6 miles) long and runs between Back Lane and Lancaster Gate, providing access to the residential areas of Hurricane Way, Halifax Road, Lysander Close and Hampden Close.
- 4.6.16. Sterling Way also provides connectivity to the most north-easterly cul-de-sac in Upper Cambourne via Vickers Way and Hudson Road and can be accessed from public foot/cycle paths situated between Upper Cambourne and the A428.
- 4.6.17. Sterling Way currently bisects a pedestrian/cycle path that runs between Lancaster Gate and Broadway (east of Upper Cambourne), the proposed start point of the CtoC Scheme. The path from Sterling Way to Broadway is to be upgraded to a Busway by the Cambourne West developer under their Section 106 obligations.

M11

- 4.6.18. The M11 motorway is a strategic link that runs in a north / south direction through the eastern section of the study area, immediately to the west of Cambridge.
- 4.6.19. The M11 provides access to the A1303 Madingley Road from the south at Junction 13 and connects with the A14 at Junction 14. Both junctions have restricted traffic movements.

PERSONAL INJURY ACCIDENT DATA

- 4.6.20. Personal Injury Accident (PIA) data has been obtained for the most recent 5 years, covering the period between June 2019 and July 2024. A plan showing the PIA recorded on the highway network in the study area is shown in Figure 4.4 below. Table 4.3 provides a summary of the recorded collisions.

Figure 4.4: PIA in Study Area

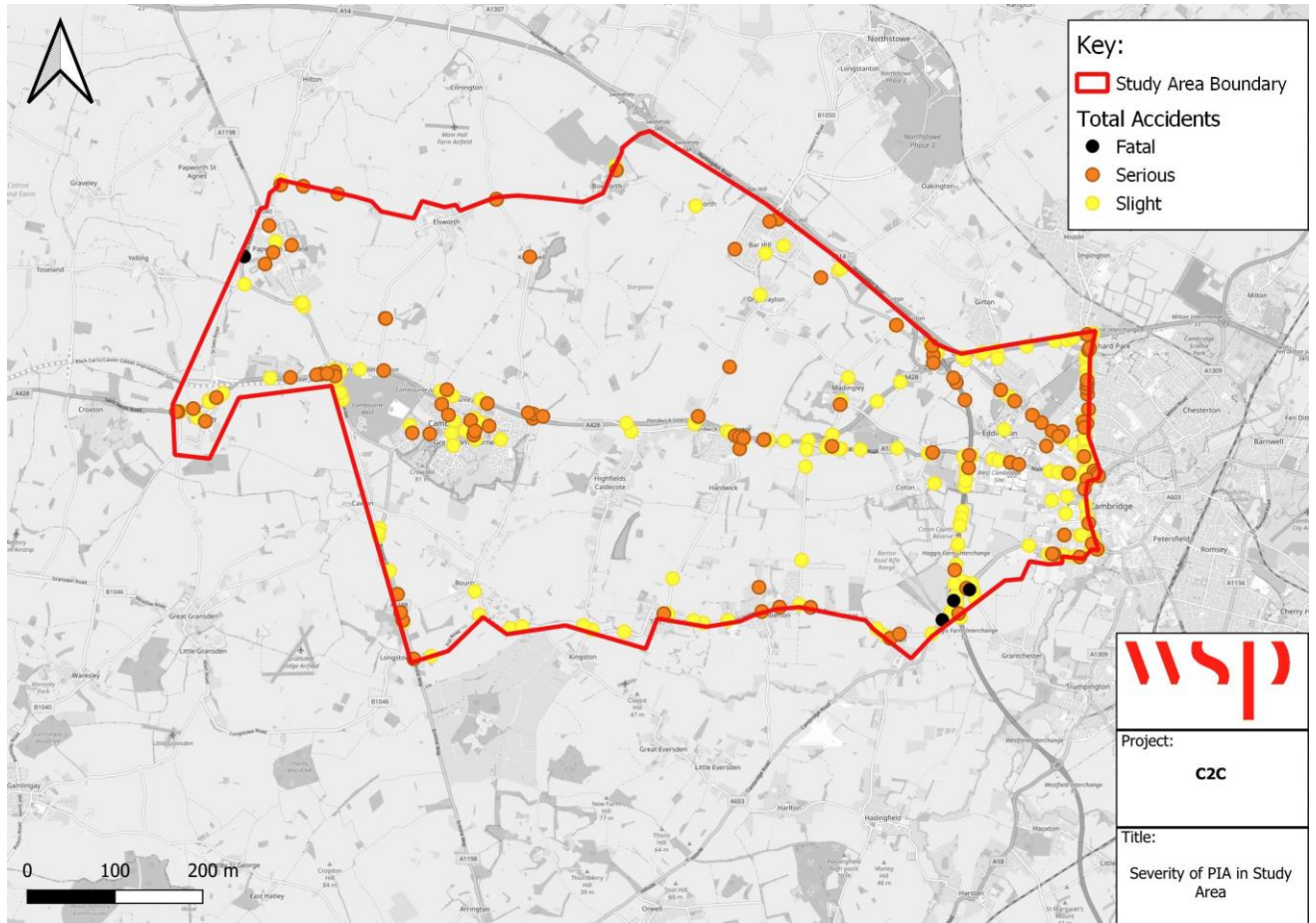


Table 4.3: PIA in Study Area between June 2019 and July 2024

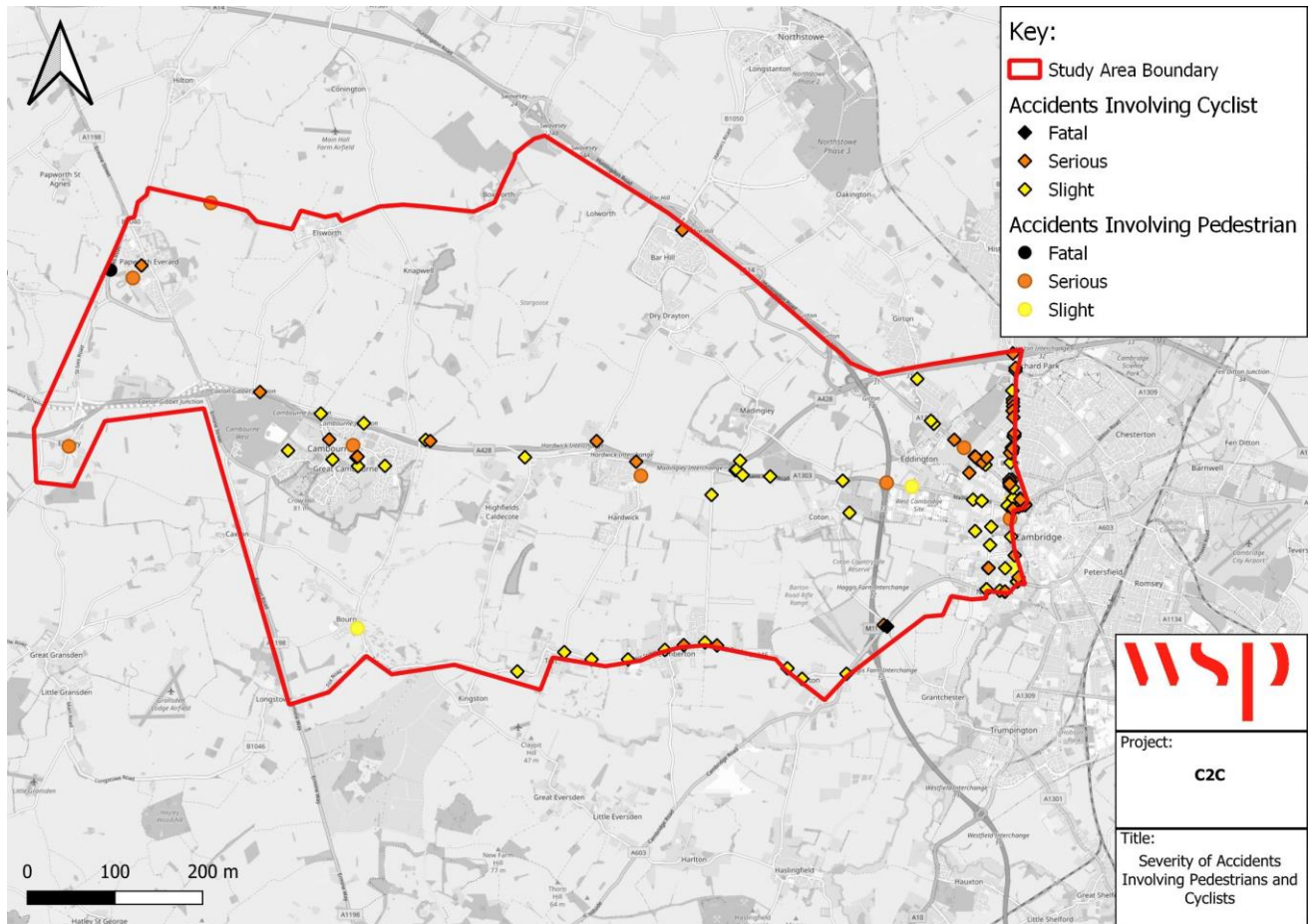
Year	Slight	Serious	Fatal	Total
Total	314	120	4	438

4.6.21. Of the 438 PIAs recorded in the study area 132 involved a cyclist and 15 involved pedestrians. **Table 4.4** summarises the total number of slight, serious and fatal accidents involving pedestrians and cyclists. **Figure 4.5** shows the location of PIAs involving pedestrians and cyclists.

Table 4.4: Pedestrian and Cyclist PIA

Severity	Pedestrian	Cyclist	Total
Slight	6	94	100
Serious	8	37	45
Fatal	1	1	2
Total	15	132	147

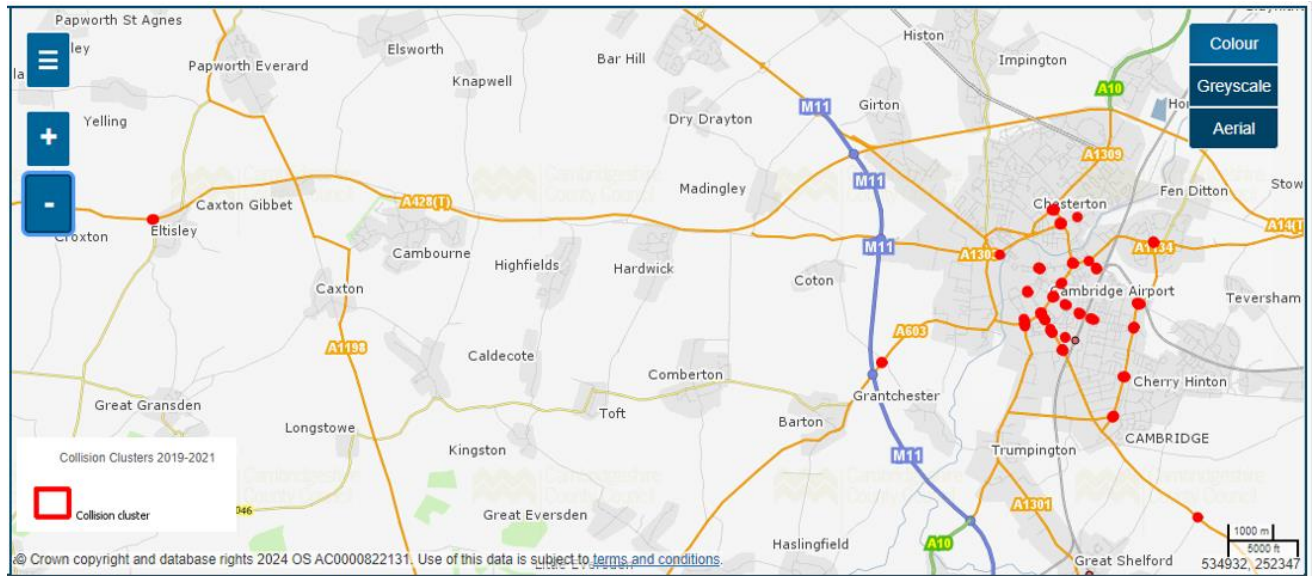
Figure 4.5: Pedestrian and Cyclist accidents in Study Area



4.6.22. The numbers of accidents, their severity and their locations are considered to be consistent with the size of the study area and the types of roads within it. As would be expected, accidents have occurred primarily along the A428, St Neots Road, the B1046, the A1198 and M11 Motorway. There is one accident cluster¹ on the periphery of the study area at the A603 Haggis Farm Interchange as shown in shown in **Figure 4.6** below.

¹ This is defined by CCC as 6 or more injury collisions (any severity) within 100m or at a junction, in the most recent 3 calendar year period; or 3 or more higher severity injury collisions (fatal or serious injuries) within 100m or at a junction, in the most recent 3 calendar year period.

Figure 4.6: Accident Cluster Locations



Source: Cambridgeshire County Council (CCC), 2024

- 4.6.23. The review of the above accidents demonstrates that there are no particular existing road safety trends or issues affecting the local highway network. As such, it is considered that provision of the Busway and the Travel Hub will not have a significant detrimental impact on road safety.

EXISTING TRAFFIC FLOWS – ST NEOTS ROAD

- 4.6.24. A limited traffic survey was carried out on Wednesday 29th June 2022. The purpose of the survey was to establish current traffic flows along St Neots Road.
- 4.6.25. A manual classification count was undertaken at the St Neots Road junction with Cambridge Road (immediately to the north of Hardwick) and the St Neots Road junction with Long Road. The traffic count took place between 07:00 and 19:00.
- 4.6.26. The 12 hours traffic flows on St Neots Road at each survey location are identified below. Traffic flows are two-way flows, expressed as numbers of vehicles observed. The traffic flows are broken down by vehicle classification.

MCC Survey at St Neots Road/ Cambridge Road junction

- 4.6.27. The two-way 12 hours traffic flow on St Neots Road, on either side of the junction with Cambridge Road, are described by Table 4.5 and Table 4.6 below.

Table 4.5 - St Neots Road west of Cambridge Road – 12 hours two-way flow (vehicle numbers)

Cars	Light Goods Vehicles	Heavy Goods Vehicles	Buses	Motor cycles	Bicycles	Total
3,807	614	54	70	101	186	4,832

Table 4.6 - St Neots Road east of Cambridge Road – 12 hours two-way flow (vehicle numbers)

Cars	Light Goods Vehicles	Heavy Goods Vehicles	Buses	Motor cycles	Bicycles	Total
2,676	448	40	49	103	231	3,547

MCC Survey at St Neots Road/ Long Road junction

- 4.6.28. The two-way 12 hours traffic flow on St Neots Road, on either side of the junction with Long Road, are described by Table 4.7 and Table 4.8 below.

Table 4.7 - St Neots Road west of Long Road – 12 hours two-way flow (vehicle numbers)

Cars	Light Goods Vehicles	Heavy Goods Vehicles	Buses	Motor cycles	Bicycles	Total
2,662	445	40	49	85	237	3,518

Table 4.8 - St Neots Road east of Long Road – 12 hours two-way flow (vehicle numbers)

Cars	Light Goods Vehicles	Heavy Goods Vehicles	Buses	Motor cycles	Bicycles	Total
3,057	444	36	53	76	235	3,901

- 4.6.29. The June 2022 traffic survey indicates that St Neots Road has a 12 hour two-way flow of almost 5,000 vehicles at its western end. This flow reduces to approximately 3,500 vehicles at its eastern end. St Neots Road carries a sizeable amount of HGV and bus traffic.
- 4.6.30. It is noted that St Neots Road is an established cycle route, with approximately 230 cycle trips taking place along St Neots Road over the 12 hours survey period.

5 TRANSPORT MODELLING

5.1 OVERVIEW

- 5.1.1. This chapter describes the transport modelling undertaken in preparation of the TWAO application.

5.2 STRATEGIC MODELLING

INTRODUCTION

- 5.2.1. The highway impacts of the CtoC Scheme have been assessed using the Cambridge Sub Regional Model (CSRM). The CSRM F Series has been used as the basis of the assessment of the CtoC Scheme. The validation of the base year model is described in **Appendix G**, with the CSRM Forecasting Report included as **Appendix F**.

2041 HIGHWAY MODELS

- 5.2.2. CSRM F Series has been used to produce 2041 Do Minimum and 2041 Do Something demand model runs for the AM peak period (07:00-10:00), interpeak period (10:00-16:00) and PM peak period (16:00-19:00).
- 5.2.3. The 2041 Do Minimum represents a scenario which is consistent with the currently proposed Local Plan allocations for the four Local Authority Districts represented in CSRM (Cambridge City, South Cambridgeshire, Huntingdonshire and East Cambridgeshire). This includes local assumptions on housing, employment and other developments, along with transport schemes which are either committed or expected to be required to support development.
- 5.2.4. Developments at Bourn Airfield and Cambourne West are included in the Do Minimum and Do Something scenarios that have been used for this TA, as this represents the worst-case scenario in terms of development and therefore potential traffic growth in the local area.
- 5.2.5. Only highway assignments have been run with the 2041 CSRM F-series..

COMMITTED DEVELOPMENT

- 5.2.6. The committed development sites and transport improvement schemes included in the 2041 Do Minimum and Do Something scenarios are summarised below. CSRM presumes that only a proportion of the committed developments listed will be completed by 2041.
- 5.2.7. Committed development includes sites at: Addenbrooke's, ARM / Capita Park, Cambridge East, Cambridge West, Clay Farm, Darwin Green, Northern Fringe, NW Cambridge University Site, Bourn Airfield, Cambourne West, Cambridge East, Darwin Green, Hinxton, Northstowe Phases 1 & 2, Waterbeach, Alconbury Weald Centre and South, Bearscroft Farm Godmanchester, Ermine Street, St Neots East, Lancaster Way and Business Park, Littleport and North Ely. The CSRM F-series Forecasting Report (available on request from Cambridgeshire County Council) describes the numbers of additional dwellings and additional jobs modelled for 2041.

TRANSPORT IMPROVEMENT SCHEMES

- 5.2.8. The following transport improvement schemes are included in the 2041 Do Minimum and Do Something highway models.

Ely Southern Bypass

- 5.2.9. The Ely Southern Bypass Scheme opened in October 2018. The scheme is a new road connecting the A142 at Angel Drove to Stuntney Causeway, including bridges over the railway line and the River Great Ouse and its floodplains. The new route removes the need for heavy goods vehicles to use the railway level crossing and avoid an accident-prone low-bridge.

Northstowe Phase 2 Southern Access Road

- 5.2.10. The Southern Access Road (west) is the main access to the Northstowe Phase 2 development. The road is a new dual carriageway that connects with the B1050 at a new roundabout. The new route provides a direct, dedicated access to Northstowe and does not require traffic to pass through the villages of Longstanton or Oakington.

A14 Cambridge to Huntingdon Improvement Scheme

- 5.2.11. The A14 Cambridge to Huntingdon Improvement Scheme opened in May 2020 and included the construction of:
- A new 12.5 mile bypass provides a two lane dual carriageway between Ellington and the A1 at Brampton and a three lane dual carriageway between Brampton and Swavesey.
 - Widening of the A1 from a 2 lane dual carriageway to a three lane dual carriageway, between Brampton and Alconbury (approximately three and a half miles). Between Brampton and Brampton Hut this also included the construction of a new road to the west of the existing A1. The existing A1 road became part of the new A14 Huntingdon Southern Bypass.
 - Widening of the existing A14 over approximately five and a half miles to provide three lanes in each direction between Swavesey and Bar Hill, and four lanes in each direction between Bar Hill and Girton. This also included the widening of one and a half miles of the Cambridge Northern Bypass between Histon and Milton.
 - Improvements to junctions at Swavesey, Bar Hill and Girton to make sure they are compatible with new developments such as Northstowe. This also includes improved connections for cyclists, horseriders and pedestrians.
 - Improvements to Huntingdon Town Centre through the removal of the A14 rail viaduct over the East Coast main line and Brampton Road in Huntingdon.
 - Construction of a new single carriageway between Swavesey and Girton, approximately five and half miles in length and linking to the A1307 (old A14) between Godmanchester and Swavesey.

A428 Black Cat to Caxton Gibbet Road Improvement Scheme

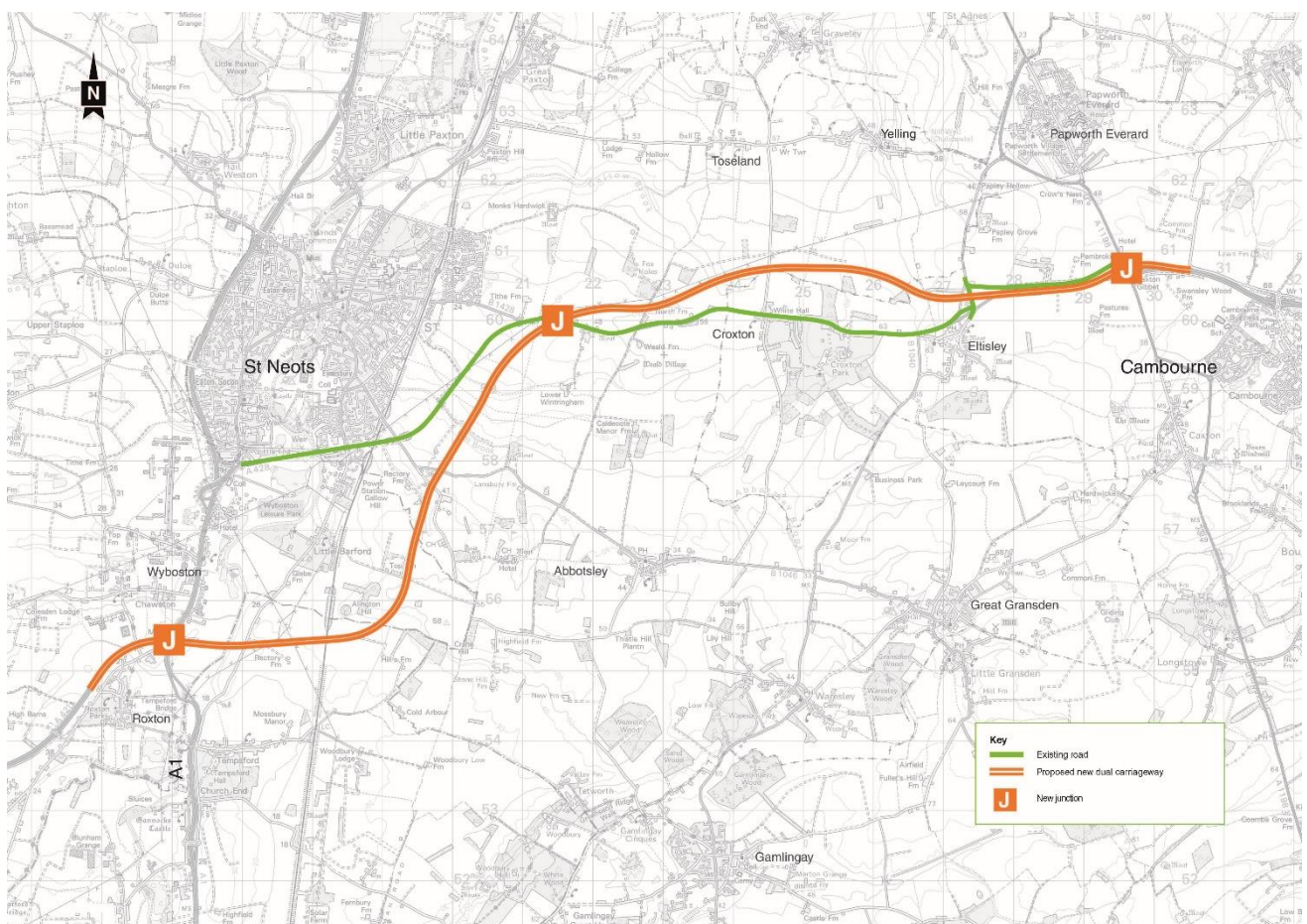
- 5.2.12. In August 2022 the A428 Black Cat to Caxton Gibbet Road Improvement scheme was granted development consent by the Secretary of State for Transport. The application involves the dualling of the A428 between A1/A421 Black Cat Junction and A428/A1198 Caxton Gibbet Junction to high quality dual carriageway. Construction will include 19km of new Dual Carriageway, and Grade separated junctions.
- 5.2.13. This scheme includes:
- A new three tier junction at Black Cat roundabout which will allow traffic to flow freely on the A1 by travelling under the junction and on the new dual carriageway over the junction;

- New junctions at Caxton Gibbet and Cambridge Road, connecting the new dual carriageway to the existing A428 and increasing the local road network's ability to cope with unforeseen incidents;
- New Roxton Road link to connect Wyboston and Chawston;
- New bridges crossing over the new dual carriageway at Roxton Road, Barford Road and Toseland Road.
- New bridges over the River Great Ouse and East Coast Main Line railway

5.2.14. The existing A428 between St Neots and Caxton Gibbet will be maintained for local traffic and public transport. Improved routes for pedestrians, cyclists and horse riders will also be provided.

5.2.15. A plan showing the proposed alignment of the new dual carriageway and location of new junctions is provided in Figure 5.1 below.

Figure 5.1: A428 Black Cat to Caxton Gibbet Road Improvement scheme



5.3 MAKING CONNECTIONS

5.3.1. In 2023 the GCP consulted on proposals for faster, cheaper, more reliable bus services and safer cycling through the introduction of a Sustainable Travel Zone. The proposals were:

- Transforming the bus network: From as early as mid-2023, GCP proposed to transform the bus network through more services to more locations, with cheaper fares set at £1/£2.

- Investing in other sustainable travel schemes: Alongside the bus network, GCP proposed to invest in new sustainable travel schemes, such as better walking and cycling links.
- Creating a Sustainable Travel Zone: GCP proposed the introduction of a Sustainable Travel Zone in the form of a road user charge on behalf of Cambridgeshire County Council. Vehicles would be charged for driving within the Zone between 7am and 7pm on weekdays, and money raised would fund improvements to the bus network and other sustainable travel schemes. The Zone would have been fully operational in 2027/28, but only once the first bus improvements are introduced.

5.3.2. The proposals would have resulted in:

- Double the hours of service and miles covered of the pre-Covid Greater Cambridge bus network,
- £1 flat fares for single journeys in the Cambridge bus zone, and £2 fares in the wider area,
- 50% expected reduction of traffic in the centre of Cambridge.

5.3.3. Following the consultation the decision was made by GCP not to proceed with the Making Connections scheme.

5.3.4. At the time of specifying the CSRM runs for the CtoC scheme, a decision on the future of the Making Connections scheme had not been made. As such, this TA has considered two scenarios: without Making Connections and with Making Connections.

5.3.5. It is likely that in due course, alternative measures to reduce congestion and air pollution, may be introduced under the City Access programme to reduce the number of private car trips wanting to access the city centre. Therefore, the eventual scheme impact may lie somewhere between the two scenarios considered, but the “without Making Connections” scenario provides a core appraisal.

5.4 EAST WEST RAIL

5.4.1. East West Rail has not been included in the modelling undertaken for the CtoC Scheme. Whilst a preferred route for East West Rail has been announced, the scheme is still at an early stage. It is not a committed scheme and has no guaranteed funding or delivery programme.

5.5 PUBLIC TRANSPORT MODELLING

5.5.1. Public Transport modelling has been used to support the development of the bus strategy for the CtoC Scheme. The bus strategy is included as part of the Outline Business Case.

6 FUTURE TRANSPORT CONDITIONS WITHOUT CTOC SCHEME

6.1 OVERVIEW

- 6.1.1. This chapter outlines the future 2041 Do Minimum baseline transport conditions in the study area i.e. without the CtoC Scheme.

6.2 ACTIVE TRAVEL NETWORK

- 6.2.1. The only notable possible change to the active travel network by 2041 would be the introduction of GCP's Comberton Greenway scheme. This is proposed to be delivered to the south of the CtoC Scheme. The greenway will start in Comberton and head north towards Coton. It will cross the existing M11 bridge and carry on past the Cambridge University West Campus before reaching Silver Street.
- 6.2.2. Work on the first sections of the Comberton Greenway has commenced with upgrades made to a number of junctions and a new crossing outside Comberton Village College.
- 6.2.3. There is no firm programme for the delivery of the remaining sections of the Comberton Greenway.

6.3 HIGHWAY NETWORK PERFORMANCE

- 6.3.1. CSRM F Series has been used to produce Do Minimum demand model runs for the AM peak period (07:00-10:00), interpeak period (10:00-16:00) and PM peak period (16:00-19:00) for the forecast year of 2041. Modelling has been run both with and without the Making Connections schemes.
- 6.3.2. The performance of the highway network in the 2041 Do Minimum scenarios is described below.
- 6.3.3. Outputs summarising results of the strategic modelling are attached in [Appendix C](#).
- 6.3.4. V/C ratio (i.e. Volume/ Capacity) is a measure of available highway link capacity. For each junction in the study area, the V/C ratio for each approach arm has been assessed and the maximum V/C value identified. That V/C value has been used as the indicator of the junction's capacity.
- 6.3.5. Junction arms with V/C of between 0.85 and 1.0 (i.e. between 85% and 100% of capacity utilised) typically have moderate levels of queued traffic and delay. Junction arms with a V/C of greater than 1.0 (i.e. greater than 100% capacity utilised) typically have high levels of queuing traffic and delay.
- 6.3.6. Two ranges of V/C ratio i.e. 0.85 – 1.0, and greater than 1.0, have been used to assess the highway network in the study area.

WITHOUT MAKING CONNECTIONS

- 6.3.7. This section describes the performance of the highway network in the 2041 Do Minimum (without Making Connections) scenario. This has been informed by a comparison of traffic volume against highway capacity (V/C) statistics at junctions in the study area. The V/C statistic provides a good indication of the level of traffic congestion within the study area.

AM peak

- 6.3.8. CSRM predicts V/Cs of greater than 100% at the following 24 locations:
- A1134 Northampton Street eastbound – junction with Magdalene Street;
 - A1134 Northampton Street westbound – junction with A1303 Madingley Road;
 - Turing Way – junction with Edington Avenue;

- A603 Barton Road eastbound – pedestrian crossing east of Grantchester Road;
- A1307 Huntingdon Road eastbound – junction with Whitehouse Lane;
- A1307 Huntingdon Road eastbound – junction with Thornton Road;
- A1307 Huntingdon Road eastbound – junction with Edington Avenue;
- A603 Cambridge Road northbound – junction with M11 NB off-slip (Junction 12);
- A428 eastbound off-slip – junction with St Neots Road (north of Cambourne);
- A428/A14 eastbound- junction with M11 NB off-slip to A14 (J14 Girton interchange);
- A1303 Madingley Road eastbound – junction with M11 northbound off-slip (Junction 13);
- A1303 Madingley Road eastbound – junction with Cambridge Road;
- Grantchester Road southbound – junction with A603 (east of M11 J12);
- Grantchester Road southbound – junction with M11 SB off-slip;
- A1307 Huntingdon Road eastbound – pedestrian crossing north of Storey's Way;
- Broad Street northbound – junction with Cambourne Road;
- Access Road – junction with A1198 (south of Caxton Gibbet rbt);
- B1049 Cambridge Road southbound – junction with Kings Hedges Road;
- B1049 Bridge Road southbound – junction with A14 (J32);
- B1050 southbound – junction with A14 (J25);
- A1198 Ermine St southbound – junction with A428 EB off-slip;
- B1049 Cambridge Road southbound – junction with Galton Road;
- B1046 New Road – junction with A603 Cambridge Road; and
- Castle Street northbound – junction with A1307 Huntingdon Road.

6.3.9. CSRM predicts that 22 locations will have V/Cs between 85% and 100%.

Interpeak

6.3.10. Because flows overall are lower in the interpeak than during the AM peak, there are fewer junctions with V/Cs greater than 100%: CSRM predicts V/Cs of greater than 100% at the following 6 locations:

- A1134 Northampton Street eastbound – junction with Magdalene Street;
- A1134 Victoria Road – junction with Chesterton Road;
- Grantchester Road southbound – junction with A603 (east of M11 J12);
- Broad Street northbound – junction with Cambourne Road;
- B1049 Cambridge Road southbound – junction with Galton Road; and
- M11 southbound off-slip to A14 eastbound – M11 junction 14.

6.3.11. CSRM predicts that 12 locations will have V/Cs between 85% and 100%.

PM peak

6.3.12. CSRM predicts V/Cs of greater than 100% at the following 28 locations:

- A1134 Northampton Street eastbound – junction with Magdalene Street (all arms);
- Grange Road – junction with A1303 Madingley Road;
- A1134 Queen's Road northbound – junction with A1303 Madingley Road;
- Emmanuel Street – junction with St. Andrew's Street;
- A1303 Madingley Road – junction with Edington Avenue (all arms);
- A1134 Victoria Road – junction with Chesterton Road;
- Kings Hedges Road eastbound – junction with Chariot Way;
- Haslingfield Road – junction with A603 Wimpole Road;
- A603 Barton Road westbound – pedestrian crossing east of Grantchester Road;
- A603 Barton Road southbound – junction with M11 SB on-slip (Junction 12);
- A1307 Huntingdon Road eastbound – junction with Whitehouse Lane;
- A1307 Huntingdon Road eastbound – junction with Thornton Road;
- NW Cambridge development access – junction with A1307 Huntingdon Road;
- A1307 Huntingdon Road eastbound – junction with Edington Avenue;
- A428 eastbound off-slip – junction with St Neots Road (north of Cambourne);
- A1303 Madingley Road eastbound – junction with M11 northbound off-slip (Junction 13);
- A1303 Madingley Road westbound – junction with St Neots Road;
- Grantchester Road southbound – junction with A603 (east of M11 J12);
- Broad Street northbound – junction with Cambourne Road;
- B1049 Cambridge Road northbound – junction with A14 (J32);
- B1049 Cambridge Road southbound – junction with Galton Road;
- Castle Street northbound – junction with A1307 Huntingdon Road;
- M11 southbound off-slip to A14 – (Junction 14 – Girton interchange);
- A14 westbound diverge to A428 westbound – Girton interchange;
- Cambridge Road northbound – junction with A1303 Madingley Road;
- M11 NB off-slip – junction with A603 Cambridge Road (Junction 12);
- Storey's Way northbound – junction with A1307 Huntingdon Road; and
- A1303 Madingley Road both directions – junction with Lady Margaret Road.

6.3.13. CSRM predicts that 41 locations will have V/Cs between 85% and 100%.

WITH MAKING CONNECTIONS

6.3.14. This section describes the performance of the highway network in the 2041 Do Minimum (with Making Connections) scenario. This has been informed by a comparison of traffic volume against highway capacity (V/C) statistics at junctions in the study area. The V/C statistic provides a good indication of the level of traffic congestion within the study area.

6.3.15. Overall traffic volumes around Cambridge are expected to be lower with Making Connections. It is anticipated that there would be less congestion at junctions.

AM peak

6.3.16. CSRM predicts V/Cs of greater than 100% at the following 7 locations:

- A603 Cambridge Road northbound – junction with M11 NB off-slip (Junction 12);
- A428/A14 eastbound- junction with M11 NB off-slip to A14 (J14 Girton interchange);
- A1303 Madingley Road eastbound – junction with M11 northbound off-slip (Junction 13);
- Grantchester Road southbound – junction with A603 (east of M11 J12);
- Access Road – junction with A1198 (south of Caxton Gibbet rbt);
- B1050 southbound – junction with A14 (J25); and
- A1198 Ermine St southbound – junction with A428 EB off-slip;

6.3.17. CSRM predicts that 17 locations will have V/Cs between 85% and 100%.

Interpeak

6.3.18. CSRM predicts V/Cs of greater than 100% at the following location:

- Broad Street northbound – junction with Cambourne Road.

6.3.19. CSRM predicts that 8 other locations will have V/Cs between 85% and 100%.

PM peak

6.3.20. CSRM predicts V/Cs of greater than 100% at the following 15 locations:

- Magdalene Street – junction with A1134 Northampton Street eastbound;
- A1134 Queen's Road northbound – junction with A1303 Madingley Road;
- Emmanuel Street – junction with St. Andrew's Street;
- Haslingfield Road – junction with A603 Wimpole Road;
- A603 Barton Road westbound – pedestrian crossing east of Grantchester Road;
- A603 Barton Road southbound – junction with M11 SB on-slip (Junction 12);
- A428 eastbound off-slip – junction with St Neots Road (north of Cambourne);
- A1303 Madingley Road westbound – junction with St Neots Road;
- Grantchester Road southbound – junction with A603 (east of M11 J12);
- Broad Street northbound – junction with Cambourne Road;
- B1049 Cambridge Road southbound – junction with Galton Road;

- M11 southbound off-slip to A14 – (Junction 14 – Girton interchange);
- Cambridge Road northbound – junction with A1303 Madingley Road;
- Storey's Way northbound – junction with A1307 Huntingdon Road; and
- A1198 northbound – junction with Ermine Street (south of Caxton Gibbet).

6.3.21. CSRM predicts that 43 other locations will have V/Cs between 85% and 100%.

7 FUTURE TRANSPORT CONDITIONS WITH CTOC SCHEME

7.1 OVERVIEW

- 7.1.1. This chapter outlines the future 2041 Do Something transport conditions in the study area i.e. with the CtoC Scheme.

7.2 ACTIVE TRAVEL NETWORK

- 7.2.1. An emergency and maintenance access track will run alongside the Busway. This will also function as a shared use active travel path which will accommodate pedestrian, cycling, wheeling and equestrian movement.
- 7.2.2. The CtoC Scheme will offer a direct cycle connection between Cambourne and Cambridge. This will provide significant safety and journey time improvements for people cycling between Cambourne, Hardwick, Coton and Cambridge.
- 7.2.3. As previously noted, the CtoC Scheme intersects four PRowS. At these locations new crossing facilities will be provided to minimise the impact of the CtoC Scheme on pedestrians, cyclists and equestrians.

7.3 HIGHWAY NETWORK PERFORMANCE

- 7.3.1. The new Busway, P&R site and bus services associated with the CtoC Scheme have been coded into the CSRM model. Demand model runs have been produced for the 2041 Do Something scenarios for the AM peak period (07:00-10:00), interpeak period (10:00-16:00) and PM peak period (16:00-19:00). The model has been run both without and with Making Connections.
- 7.3.2. Outputs summarising results of the strategic modelling are attached in **Appendix C**.
- 7.3.3. The performance of the highway network in the 2041 Do Something without Making Connections scenario is described below.
- 7.3.4. V/C ratio (i.e. Volume/ Capacity) is a measure of available highway link capacity. For each junction in the study area, the V/C ratio for each approach arm has been assessed and the maximum V/C value identified. That V/C value has been used as the indicator of the junction's capacity.
- 7.3.5. Junction arms with V/C of between 0.85 and 1.0 (i.e. between 85% and 100% of capacity utilised) typically have moderate levels of queued traffic and delay. Junction arms with a V/C of greater than 1.0 (ie greater than 100% capacity utilised) typically have high levels of queuing traffic and delay.
- 7.3.6. Two ranges of V/C ratio i.e. 0.85 – 1.0, and greater than 1.0, have been used to assess the highway network in the study area.

WITHOUT MAKING CONNECTIONS

- 7.3.7. This section describes the performance of the highway network in the 2041 Do Something without Making Connections scenario. This has been informed by a review of volume over capacity (V/C) statistics at junctions in the study area.
- 7.3.8. Overall, V/Cs are very similar between Do Minimum and Do Something. The CtoC Scheme does result in a slight change in the number of junctions operating with a V/C >100%.

- 7.3.9. Further detail on the performance of the highway network in the 2041 Do Something (without Making Connections) is provided below.

AM peak

- 7.3.10. CSRM predicts V/Cs of greater than 100% at the same locations as in the AM 2041 Do Minimum (without Making Connections) scenario, with the exception of the following two junctions where the V/C has reduced below 100% (i.e. total of 22 junctions):

- A1303 Madingley Road eastbound – junction with Cambridge Road;
- A428 EB off-slip – junction with St Neots Road (north of Cambourne);

- 7.3.11. CSRM predicts that 24 locations will have V/Cs between 85% and 100% (at the same locations as in the 2041 Do Minimum scenario).

Interpeak

- 7.3.12. CSRM predicts V/Cs of greater than 100% at the same 6 locations indicated for the 2041 Do Minimum.

- 7.3.13. CSRM predicts that 12 locations will have V/Cs between 85% and 100%.

PM peak

- 7.3.14. CSRM predicts V/Cs of greater than 100% at the same locations indicated for the 2041 Do Minimum plus the following junction (ie total of 29 junctions);

- A428 WB off-slip – junction with St Neots Road/Scotland Road.

- 7.3.15. CSRM predicts that 40 locations will have V/Cs between 85% and 100%.

WITH MAKING CONNECTIONS

- 7.3.16. This section describes the performance of the highway network in the 2041 Do Something with Making Connections scenario. This has been informed by a review of volume over capacity (V/C) statistics at junctions in the study area.

- 7.3.17. Overall, V/Cs are very similar between the Do Minimum and Do Something scenarios. The CtoC Scheme does result in a slight change in the number of junctions operating with a V/C >100%.

- 7.3.18. Further detail on the performance of the highway network in the 2041 Do Something (with Making Connections) is provided below.

AM peak

- 7.3.19. CSRM predicts V/Cs of greater than 100% at 8 locations. These are the same locations as in the AM 2041 Do Minimum with Making Connections scenario, with the addition of the following two locations where the V/C has increased 100%;

- Broad Street northbound – junction with Cambourne Rd; and
- A428 EB off-slip – junction with St Neots Road.

The following junction is no longer forecast to operate above capacity:

- Access Road – junction with A1198 south of Caxton Gibbet

- 7.3.20. CSRM predicts that 16 locations will have V/Cs between 85% and 100% (predominantly the same locations as in the 2041 Do Minimum scenario).

Interpeak

- 7.3.21. CSRM predicts V/Cs of greater than 100% at the same location indicated for the 2041 Do Minimum.
- 7.3.22. CSRM predicts that 8 other locations will have V/Cs between 85% and 100%.

PM peak

- 7.3.23. CSRM predicts V/Cs of greater than 100% at 14 locations. These are the same locations as in the AM 2041 Do Minimum with Making Connections scenario, with the addition of the following location where the V/C has increased 100%;

- A428 EB off-slip – junction with St Neots Road/ Scotland Road

The following junctions are no longer forecast to operate above capacity:

- Cambridge Road northbound – junction with A1303 Madingley Road (east of M11 J13); and
 - A1198 northbound – junction with Ermine Street/Royston Road (west of Cambourne)

- 7.3.24. CSRM predicts that 44 locations will have V/Cs between 85% and 100%.

8 COMPARISON OF 2041 DO MINIMUM AND DO SOMETHING SCENARIOS

8.1 OVERVIEW

- 8.1.1. This chapter compares 2041 Do Minimum scenario results with 2041 Do Something scenario results in order to establish the effect of the CtoC Scheme.

8.2 HIGHWAY NETWORK PERFORMANCE

- 8.2.1. The performance of the highway network within the study area, for the Do Minimum and Do Something scenarios, is described by chapters 6 and 7. The network performance has been examined both without and with Making Connections.
- 8.2.2. There is a large number of junctions within the study area that operate either close to, or exceed, their practical capacity (practical capacity being measured as V/C ratio). This is particularly the case in the morning and evening peak periods. The limitation on junctions' practical capacity manifests itself as a congested road network, with queuing and delay at the junctions.
- 8.2.3. It can be seen that there is very little difference in the performance of the high network across both the Do Minimum and Do Something scenarios. That situation applies both without and with Making Connections.
- 8.2.4. It is clear that the CtoC Scheme does not have a detrimental impact on the performance of the highway network. It does not cause further delay and queuing on the road network. No highways mitigation is required to be provided as part of the CtoC Scheme.

8.3 TRAFFIC FLOWS

- 8.3.1. Traffic flows along key links in the study area in the AM and PM peaks, for both the 2041 Do Minimum and 2041 Do Something Scenarios, are summarised in **Appendix D**.
- 8.3.2. Tables 8-1 to 8-6 below describe two-way traffic flows on highway links in proximity to the Busway, including at nearby villages. Traffic flows are expressed in PCUs (passenger car units).

WITHOUT MAKING CONNECTIONS

AM PEAK

- 8.3.3. The change in 2-way traffic flows for selected links between the 2041 Do Minimum and 2041 Do Something in the AM peak are shown in **Table 8.1** below. In the AM peak, traffic flows in the Do Something scenario are mostly within 5% of those recorded in the Do Minimum scenario, except on links with very low flows. The exceptions are St Neots Road, east of Scotland Road, where the flow increases by 15% (from 436 PCUs to 500 PCUs due to the increase in buses on this on-road section) and Scotland Road, south of the new Travel Hub, where the flow increases by 15% (made up of cars and buses going to and from the new Travel Hub).

Table 8.1: Do Minimum v Do Something flows – Without Making Connections 2041 AM Peak

Location	Link	Do Minimum (PCUs)	Do Something (PCUs)	% difference
54	A428, east of Scotland Road	5,013	5,026	0%
85	St Neots Road, east of Scotland Road	436	500	15%
87	Cambridge Road (North), Hardwick	429	424	-1%
38	Long Road	120	108	-10%
34	Granchester Road, Coton	602	612	2%
39	B1046 Comberton	287	286	0%
36	B1046 Barton	413	425	3%
15	Scotland Road, north of Travel Hub	1,119	968	-13%
55	Scotland Road, south of Travel Hub	1,119	1,287	15%

INTERPEAK

- 8.3.4. The change in 2-way traffic flows for selected links between the 2041 Do Minimum and 2041 Do Something in the interpeak is shown in Table 8.2 below. In the interpeak, traffic flows in the Do Something scenario are mostly within 5% of those recorded in the Do Minimum scenario, except on links with very low flows. The exceptions are St Neots Road, east of Scotland Road, where the flow increases by 26% (from 208 PCUs to 263 PCUs due to the increase in buses on this on-road section) and Scotland Road, south of the new Travel Hub, where the flow increases by 26%, made up of cars and buses going to and from the new Travel Hub.

Table 8.2: Do Minimum v Do Something flows – Without Making Connections 2041 Interpeak

Location	Link	Do Minimum (PCUs)	Do Something (PCUs)	% difference
54	A428, east of Scotland Road	4,344	4,317	-1%
85	St Neots Road, east of Scotland Road	208	263	26%
87	Cambridge Road (North), Hardwick	154	150	-3%
38	Long Road	55	40	-27%
34	Granchester Road, Coton	597	577	-3%
39	B1046 Comberton	214	214	0%

Location	Link	Do Minimum (PCUs)	Do Something (PCUs)	% difference
36	B1046 Barton	379	368	-3%
15	Scotland Road, north of Travel Hub	662	635	-4%
55	Scotland Road, south of Travel Hub	662	832	26%

PM PEAK

- 8.3.5. The change in 2-way traffic flows for selected links between the 2041 Do Minimum and 2041 Do Something in the PM peak is described by Table 8.3 below. In the PM peak, traffic flows in the Do Something scenario are mostly within 5% of those recorded in the Do Minimum scenario, except on links with very low flows. The exceptions are Scotland Road, south of the new Travel Hub, where the flow increases by 25%, made up of cars and buses going to and from the new Travel Hub.

Table 8.3: Do Minimum v Do Something flows – Without Making Connections 2041 PM Peak

Location	Link	Do Minimum (PCUs)	Do Something (PCUs)	% difference
54	A428, east of Scotland Road	5,827	5,794	-1%
85	St Neots Road, east of Scotland Road	424	445	5%
87	Cambridge Road (North), Hardwick	226	221	-2%
38	Long Road	236	193	-18%
34	Granchester Road, Coton	671	653	-3%
39	B1046 Comberton	420	431	3%
36	B1046 Barton	722	706	-2%
15	Scotland Road, north of Travel Hub	1,058	985	-7%
55	Scotland Road, south of Travel Hub	1,058	1,322	25%

- 8.3.6. Scotland Road is the only link to record an increase in 2-way traffic flows of more than 10%. This is attributed to vehicles traveling to / from the new Travel Hub.

WITH MAKING CONNECTIONS

AM PEAK

- 8.3.7. Similar to the without Making Connections scenarios, the majority of traffic flows in the Do Something scenario are within 5% of those recorded in the Do Minimum scenario, except on roads

with very low flows. The exceptions are St Neots Road, east of Scotland Road, where flows increase by 12% (from 367 PCUs to 412 PCUs) as a result of additional buses using this on-road section and Scotland Road south of the Travel Hub where flows increase by 26%, a combination of cars and buses going to and from the Travel Hub.

- 8.3.8. The change in 2-way traffic flows for selected links between the 2041 Do Minimum and 2041 Do Something in the AM peak are described by Table 8.4 below.
- 8.3.9. Flows overall are lower than 'without Making Connections', but flows to the Travel Hub are higher, as would be expected in both cases.

Table 8.4: Do Minimum v Do Something flows – With Making Connections 2041 AM Peak

Location	Link	Do Minimum (PCUs)	Do Something (PCUs)	% difference
54	A428, east of Scotland Road	5,039	5,041	0%
85	St Neots Road, east of Scotland Road	367	412	12%
87	Cambridge Road (North), Hardwick	400	400	0%
38	Long Road	154	146	-5%
34	Granchester Road, Coton	583	593	2%
39	B1046 Comberton	393	379	-4%
36	B1046 Barton	672	646	-4%
15	Scotland Road, north of Travel Hub	994	867	-13%
55	Scotland Road, south of Travel Hub	994	1,252	26%

INTERPEAK

- 8.3.10. In the interpeak, traffic flows in the Do Something scenario are all within 5% of those recorded in the Do Minimum scenario, except on roads with very low flows. The one exception is Scotland Road south of the Travel Hub where flows increase by 35%, a combination of cars and buses going to and from the Travel Hub.
- 8.3.11. Flows overall are lower than 'without Making Connections', but flows to the Travel Hub are higher, as would be expected in both cases.
- 8.3.12. The change in 2-way traffic flows for selected links between the 2041 Do Minimum and 2041 Do Something in the Interpeak is described by Table 8.5 below

Table 8.5: Do Minimum v Do Something flows – With Making Connections 2041 Inter Peak

Location	Link	Do Minimum (PCUs)	Do Something (PCUs)	% difference
54	A428, east of Scotland Road	4,050	4,057	0%
85	St Neots Road, east of Scotland Road	241	231	-4%
87	Cambridge Road (North), Hardwick	150	149	0%
38	Long Road	44	38	-13%
34	Granchester Road, Coton	453	431	-5%
39	B1046 Comberton	195	194	0%
36	B1046 Barton	357	352	-1%
15	Scotland Road, north of Travel Hub	645	628	-3%
55	Scotland Road, south of Travel Hub	645	872	35%

PM PEAK

- 8.3.13. Similar to the without Making Connections scenarios, the majority of traffic flows in the Do Something scenario are within 5% of those recorded in the Do Minimum scenario, except on roads with very low flows. The exceptions are Scotland Road south of the Travel Hub where flows increase by 28%, a combination of cars and buses going to and from the Travel Hub.
- 8.3.14. Flows overall are lower than 'without Making Connections', but flows to the Travel Hub are higher, as would be expected in both cases.
- 8.3.15. The change in 2-way traffic flows for selected links between the 2041 Do Minimum and 2041 Do Something in the PM peak is described by Table 8.6 below.

Table 8.6: Do Minimum v Do Something flows – With Making Connections PM Peak

Location	Link	Do Minimum (PCUs)	Do Something (PCUs)	% difference
54	A428, east of Scotland Road	5,685	5,684	0%
85	St Neots Road, east of Scotland Road	493	488	-1%
87	Cambridge Road (North), Hardwick	220	219	0%
38	Long Road	199	180	-9%
34	Granchester Road, Coton	690	692	0%
39	B1046 Comberton	419	424	1%
36	B1046 Barton	696	673	-3%
15	Scotland Road, north of Travel Hub	1,038	934	-10%
55	Scotland Road, south of Travel Hub	1,038	1,330	28%

8.4 BUS JOURNEY TIMES

- 8.4.1. As previously stated, Public Transport modelling has been used to develop the bus strategy for the CtoC Scheme. The bus strategy is included as part of the Outline Business Case.
- 8.4.2. The following bus journey times have been extracted from the Outline Business Case. They have been reproduced to illustrate the difference in bus journey times between 2041 Do Minimum and 2041 Do Something scenarios. Bus journey times are provided for both without and with Making Connections.

WITHOUT MAKING CONNECTIONS

- 8.4.3. Table 8.7 and Table 8.8 below show the public transport journey times from Cambourne to the eastern end of the Busway, without and with the CtoC Scheme, and without Making Connections. Do Minimum times are for the existing bus route, ending at the same point for comparison.
- 8.4.4. It should be noted that the Do Something times include the time taken to leave the Busway and go into and out of the Travel Hub, and assume a 2 minute additional dwell time within the Travel Hub.
- 8.4.5. In the AM period, when buses are travelling in the inbound direction (towards Cambridge) there is a substantial journey time saving with the CtoC Scheme over the Do Minimum. In the PM time period, the largest time saving is in the outbound direction, as would be expected.

Table 8.7: Comparison of 2041 DM and 2041 DS Inbound Public Transport Journey Times (without Making Connections)

Option	AM	IP	PM
Do Minimum	36:56	21:40	26:16
Do Something (CtoC)	17:02	16:40	16:50
Saving	19:54	5:00	9:26

Table 8.8: Comparison of 2041 DM and 2041 DS Outbound Public Transport Journey Times (without Making Connections)

Option	AM	IP	PM
Do Minimum	24:46	21:09	37:28
Do Something (CtoC)	16:36	16:35	17:13
Saving	8:10	4:34	20:15

WITH MAKING CONNECTIONS

- 8.4.6. Table 8.9 and Table 8.10 below show the public transport journey times from Cambourne to the eastern end of the Busway, without and with the CtoC Scheme, and with Making Connections. Do Minimum times are for the existing bus route, ending at the same point for comparison.
- 8.4.7. It should be noted that the Do Something times include the time taken to leave the Busway and go into and out of the Travel Hub, and assume a 2 minute additional dwell time within the Travel Hub.
- 8.4.8. In the AM time period, when buses are travelling in the inbound direction (towards Cambridge) there is a substantial journey time saving with the CtoC scheme over the Do Minimum. In the PM time period, the largest time saving is in the outbound direction, as would be expected.

Table 8.9: Comparison of 2041 DM and 2041 DS Inbound Public Transport Journey Times (with Making Connections)

Option	AM	IP	PM
Do Minimum	31:39	24:56	25:28
Do Something (CtoC)	17:09	16:49	16:58
Saving	14:30	8:07	8:30

Table 8.10: Comparison of 2041 DM and 2041 DS Outbound Public Transport Journey Times (with Making Connections)

Option	AM	IP	PM
Do Minimum	25:04	25:04	29:25
Do Something (CtoC)	16:39	16:36	17:11
Saving	8:25	8:28	12:14

8.5 INTERPRETATION

- 8.5.1. As previously mentioned, the CtoC Scheme will not generate traffic *per se*. It will enable future and existing residents travelling to Cambridge to adopt sustainable modes of travel, rather than rely on their cars. It will allow commuters travelling into Cambridge to change mode of travel, from car to the bus.
- 8.5.2. V/C ratios reveal that a large number of highway junctions within the study area operate at close to, or beyond, their practical capacity particularly in the morning and evening peak periods. It is this limitation of junction capacity that is the primary cause of congestion in and around Cambridge. Junction capacity, rather than link capacity, is the principal indicator of queuing, delay and congestion within a highway network.
- 8.5.3. Two ranges of V/C ratio i.e. 0.85 – 1.0, and greater than 1.0, have been used to assess the highway network in the study area, both without and with the CtoC Scheme (and without and with Making Connections). Comparing the V/C results for study area's highway network for without and with the CtoC Scheme indicates that the results are almost identical with very little difference in the numbers and locations of junctions operating at capacity. Given that CtoC Scheme does not generate traffic, this result is to be expected. It is reasonable to conclude that the impact of the CtoC Scheme on the study area highway network is *de minimis*.
- 8.5.4. In addition to the consideration of the highway network within the study area outlined above, more detailed consideration has been given to the highway network adjacent to the CtoC Scheme. Tables 8.1 to 8.6 above compare predicted traffic flows on neighbouring highway links for the 2041 assessment year. The tables provide flow information for the morning peak, interpeak and evening peak periods. The information compares without and with CtoC Scheme, for both without and with Making Connections.
- 8.5.5. The information presented in Tables 8-1 to 8-6 above indicate that there is minimal difference in predicted traffic flows between the without CtoC Scheme and with CtoC Scheme scenarios. CtoC Scheme will generally have minimal effect on traffic flows. It is reasonable to conclude that the impact of the CtoC Scheme on the local highway network adjacent to the CtoC Scheme is also *de minimis*.
- 8.5.6. Reviewed in conjunction with network performance results presented in section 8.2 above, it can be concluded that the CtoC Scheme will not have a material impact on the local highway network.
- 8.5.7. The location of the access to the Travel Hub will not have an adverse effect on the operation of the A428/ Scotland Road/ St Neots Road dumbbell junction. The Do Minimum modelling predicts

significant queuing on the western approach to the southern roundabout in the AM peak. That queuing will not be exacerbated by the provision of the CtoC Scheme. The alignment of the Busway is designed to enable buses to avoid this queuing, thereby minimising bus travel times between Cambourne and the Travel Hub.

- 8.5.8. The Busway will accommodate a number of different bus services, operating with different routes and destinations. The Busway, between Cambourne and its eastern end at Grange Road, will be common to all of these services.
- 8.5.9. Tables 8.7 to 8.10 above compare predicted bus journey times for the Busway (between Cambourne and Grange Road) with equivalent bus journey times on existing bus routes. This comparison illustrates that the CtoC Scheme will be capable of delivering significant savings in bus journey times for new bus services using the Busway, compared with existing bus services using the existing highway network.
- 8.5.10. An extensive description of proposed bus routes, their predicted journey times and a comparison with existing bus service arrangements is provided by the Outline Business Case and its daughter Bus Strategy report.

9 ASSESSMENT OF CONSTRUCTION TRAFFIC

9.1 OVERVIEW

- 9.1.1. GCP appointed Milestone Contracting Ltd to provide ECI (early contractor involvement) advice for the CtoC Scheme. Milestone's preliminary construction programme, construction phasing and estimates of construction vehicle numbers form the basis of the construction traffic assessment described by this chapter.

9.2 CODE OF CONSTRUCTION PRACTICE

- 9.2.1. A Code of Construction Practice (CoCP) has been drafted for the CtoC Scheme. The CoCP describes the control measures, practices and standards to be implemented throughout construction of the CtoC Scheme to ensure that adverse effects to people and the environment are kept as low as practicable during that period.
- 9.2.2. The CoCP will be refined as necessary as the project design and TWA processes progress. Engagement with stakeholders will inform its future development.
- 9.2.3. The CoCP sets out a series of measures which will be applied by the Principal Contractor throughout the construction period to:
- Provide effective planning, management and control during construction to control potential adverse impacts on people, businesses and natural and heritage assets; and
 - Provide the mechanisms to engage with the local community and their representatives throughout the construction period.

9.3 CONSTRUCTION TRAFFIC MANAGEMENT PLAN

- 9.3.1. A Construction Traffic Management Plan (CTMP) will be produced for the CtoC Scheme construction works. The CTMP will be developed in accordance with the requirements set out in the CoCP. Its implementation will be the responsibility of the principal construction contractor. The primary purpose of the CTMP will be to minimise the impact of construction traffic: it will relate to both on site construction activity and the transport management arrangements for vehicles travelling to and leaving the construction site.
- 9.3.2. The CTMP will detail the methods which will be implemented to manage construction-related vehicle trips. The CTMP will establish acceptable routes for construction traffic travelling to and from the CtoC Scheme site (typically in the form of routing plans). It will specify which routes are prohibited to construction traffic (e.g. roads through local villages). The CTMP will also describe any periods during the day when use of the local road network will be restricted.
- 9.3.1. Typically, site deliveries will be limited to normal site working hours. Exceptionally, activities such as large concrete pours may require deliveries and working outside of normal hours.
- 9.3.2. The CTMP will provide the Highway Authorities with the security that the safe and efficient operation of the highway network will not be compromised by construction traffic.

9.4 PHASING

- 9.4.1. For construction planning purposes, Milestone has divided the CtoC Scheme into 17 separate sections. These sections are described by the plans enclosed at **Appendix E**.
- 9.4.2. It should be noted that the works included within sections 1 and 2 (the section of Busway between Sterling Way and Broadway) are to be delivered by the developers of the Cambourne West site and are not included within the CtoC Scheme construction works.

9.5 PROGRAMME

- 9.5.1. It is anticipated that the construction of the CtoC Scheme will take 24 months. At this stage, the construction programme extends from Q1 2026 to Q4 2027. However, it is emphasised that these dates (and the construction timings described below) are liable to change as the CtoC Scheme develops.
- 9.5.2. The timing and duration of each section of the CtoC Scheme is described in Table 9.1 below. The construction programme illustrates that different parts of the CtoC Scheme will be constructed in parallel with each other, with construction proceeding on a number of work fronts.

Table 9.1: Construction Phasing and Duration

Section	Preliminary Construction Dates
1	By West Cambourne developer
2	By West Cambourne developer
3	Feb 26 – Nov 27
4	Jan 27 – Oct 27
5	July 27 – Dec 27
6	Oct 26 - Oct 27
7	Oct 26 – Nov 27
8	Dec 26 – Nov 27
9	April 27 – Nov 27
10	March 2026 – Oct 27
11	Nov 26 – Nov 27
12	Jan 26 – Dec 27
13	March 26 – Nov 27
14	Nov 26 – Nov 27
15	Feb 26 – Nov 27
16	March 27 – Oct 27
17	Nov 27 – Nov 27
Travel Hub	Jan 26 – Dec 27

9.6 CONSTRUCTION TRAFFIC NUMBERS

- 9.6.1. Construction traffic movements have been broken down into three categories: construction vehicle movements, static plant, and staff vehicle movements. Construction vehicles are vehicles associated

with primary construction activities, including earthmoving and deliveries of materials (including road pavement materials and concrete). Static plant are vehicles bringing major items of plant to site and removing plant from site. Staff vehicle numbers are self-explanatory: these are cars and vans which will mainly travel to the principal compound area (situated on the site of the Travel Hub) or other locations along the Busway route.

- 9.6.2. Vehicle numbers are expressed in terms of vehicle movements. A vehicle movement is a two-way flow and is the sum of an inbound vehicle trip and the return trip).
- 9.6.3. Table 9.2 below identifies the peak number of daily vehicle movement numbers for each section of the CtoC Scheme. The timing of peak vehicle activity for each part of the scheme is also identified.

Table 9.2: Peak Construction Vehicle Numbers (Daily Movements)

Section	Daily Peak Vehicle Numbers (in vehicle movements)	Date occurs	Daily Construction Vehicle Movements	Daily Static Plant Vehicle Movements	Daily Staff Vehicle Movements
1	By West Cambourne developer	By West Cambourne developer	By West Cambourne developer	By West Cambourne developer	By West Cambourne developer
2	By West Cambourne developer	By West Cambourne developer	By West Cambourne developer	By West Cambourne developer	By West Cambourne developer
3	162	July 26	51	10	101
4	134	Feb 27	42	8	84
5	128	Aug 27	40	8	80
6	22	Oct 26	7	1	14
7	12	Oct 26	4	1	7
8	134	Jan 27	42	8	84
9	83	May 27	26	5	52
10	204	March 27	64	13	127
11	74	Nov 26	23	5	46
12	124	Feb 26	39	8	77

Section	Daily Peak Vehicle Numbers (in vehicle movements)	Date occurs	Daily Construction Vehicle Movements	Daily Static Plant Vehicle Movements	Daily Staff Vehicle Movements
13	145	June 26	45	9	91
14	10	Nov 26	3	1	6
15	7	Feb 27	2	0	5
16	140	June 27	44	9	87
17	140	June 27	44	9	87
Travel Hub	118	Oct 26	38	4	76

9.7 CONSTRUCTION HAUL ROUTES

- 9.7.1. There are two principal points of access to the Busway and Travel Hub sites from the adjacent highway network. These are from the A428/ Scotland Road grade-separated dumbbell junction and from the Madingley Mulch Roundabout.
- 9.7.2. From the west, construction traffic will travel on the A428 and access the CtoC works via either the A428/ Scotland Road junction or the Madingley Mulch roundabout. In addition, construction traffic arriving from the west could leave the A428 at Cambourne and travel via St Neots Road to the CtoC construction site.
- 9.7.3. From the south, construction traffic will travel via the M11 and Madingley Road to the Madingley Mulch roundabout, and from there access the CtoC works via St Neots Road. From the east, construction traffic will travel via the A14/ A428 to Scotland Road.
- 9.7.4. Some construction traffic will utilise Madingley Road and the University of Cambridge's West Cambridge campus' on-site roads to provide access for the M11 bridge and the section of Busway running between the M11 and Grange Road. Limited amounts of construction traffic will be permitted to travel on Madingley Road and Grange Road in order to construct the tie-in between the Busway and Grange Road.
- 9.7.5. As stated above, the CTMP will limit access for construction traffic to the routes outlined above. Construction traffic will not be permitted to travel through local villages, particularly Hardwick, Coton, Dry Drayton, Comberton, Toft and Barton.
- 9.7.6. The anticipated construction traffic routes from the wider local highway network to the component parts of the CtoC Scheme are described by Table 9.3 below:

Table 9.3: Construction Traffic Routes

Sections	Construction Traffic Route
1, 2, 3, 4 + 5	A428/ Scotland Road junction and St Neots Road
6	A428/ Scotland Road junction
7, 8 + 9	A428/ Scotland Road junction and St Neots Road (west) and Madingley Mulch Roundabout and St Neots Road (east)
10 + 11	Madingley Mulch Roundabout, St Neots Road (east), Long Road and M11 J13, Madingley Road, Cambridge Road (north)
12 + 13	M11 J13, Madingley Road and Cambridge Road (north)
14, 15, 16 + 17	M11 J13, Madingley Road and internal roads within West Cambridge
Travel Hub	A428/ Scotland Road junction

9.8 TEMPORARY TRAFFIC SIGNALS AND ROUTE DIVERSIONS

- 9.8.1. Temporary traffic signals will be required at locations where the Busway crosses existing roads, in order to permit the construction of new crossing junctions. Depending on factors such as visibility and traffic speeds, temporary signals may be required to enable construction traffic to enter and leave construction haul routes from the adjacent roads. Traffic signals will be in place for limited periods of time only.
- 9.8.2. It may be necessary to close roads for short periods of time to facilitate construction of new crossing junctions. Diversion routes for such closures would be arranged with Cambridgeshire County Council and notified to the public in advance. As far as practicable, they would be removed in time for the road to be reopened in time for peak daytime traffic activity.
- 9.8.3. It is anticipated that the CtoC Scheme construction works will not require the diversion of any existing bus services.

9.9 IMPACT ASSESSMENT

ACTIVE TRAVEL IMPACTS

- 9.9.1. Construction of the CtoC Scheme is expected to have a negligible impact on pedestrians and cyclists as the main route for construction vehicles accessing and egressing the site will be via the A428 and M11.

- 9.9.2. To minimise any conflict between construction vehicles and non-motorised users at locations where PRoWs cross the Busway, PRoW construction crossings will be established and managed in accordance with control measures which will be identified in the CTMP.

PUBLIC TRANSPORT IMPACTS

- 9.9.3. Construction of the CtoC Scheme is expected to have a negligible impact on buses and public transport users. As stated above, it is anticipated that no diversion of bus routes will be required as part of the CtoC Scheme.

HIGHWAY IMPACTS

- 9.9.4. Peak construction vehicle numbers for each component part of the CtoC Scheme are identified by Table 9-2 above. It is considered that the number of construction vehicle trips generated by the CtoC Scheme will have a minimal impact on the operation of the local highway network, particularly as all trips will access and egress the site via the A428 or M11.
- 9.9.5. The local highway network has capacity to accommodate the predicted number of construction vehicles. It is noted that the A428/ Scotland Road junction and the Madingley Mulch roundabout are the focal points of vehicles accessing and leaving the CtoC worksites. If required, measures to regulate the volume of construction traffic passing through those junctions can be incorporated into the CTMP. Such measures could include limiting the number of construction traffic movements at those junctions during peak hour periods.

Intersection of the Busway with the Local Highway Network

- 9.9.6. New signalised junctions will be provided where busway intersects the local highway network. These junctions have been assessed using the strategic model, with all junctions prioritising buses using the busway. The modelling results do not predict significant delays or queues at these junctions due to the infrequency that the signals will be called over the course of a typical hour.
- 9.9.7. Whilst the introduction of new signalised junction will result in some additional delay for existing users of the local highway network, they will also provide the following benefits. They will:
- Prioritise journeys by bus and encourage mode shift
 - Discourage “rat -running” and the use of local routes by strategic traffic that should be using other more appropriate routes (e.g. A428) and
 - Act as traffic calming measures, slowing traffic on approach / exit from villages along the route of the CtoC scheme.

9.10 CUMULATIVE IMPACT

- 9.10.1. The construction of the CtoC Scheme may coincide with the build-out of the Bourn Airfield residential development. The section of St Neots Road between the airfield and the A428/ Scotland Road junction may be used by both CtoC and Bourn Airfield construction traffic. It is noted that Bourn Airfield has the opportunity to be independently served by its construction traffic from St Neots Road (west), with access gained from the A428 at the Cambourne junction. Bourn Airfield could also be served by construction traffic from its frontage onto Highfields Road and Broadway.
- 9.10.2. Both the CtoC Scheme and Bourn Airfield have flexibility in their construction access arrangements. It is considered that the cumulative impact of construction traffic associated with both schemes will not be significant.

- 9.10.3. It is anticipated that the CtoC Scheme construction traffic will not interact with construction traffic from any other development schemes coming forward to the west of Cambridge.

9.11 MITIGATION

- 9.11.1. As stated above, a CTMP will be produced for the CtoC Scheme. The CTMP will detail methods which will be implemented to manage construction-related vehicle trips. The CTMP will establish construction traffic vehicle routing (typically in the form of routing plans).
- 9.11.2. It is considered that with the implementation of the CTMP no other construction related transport mitigation measures will be required for the CtoC Scheme.

10 SUMMARY AND CONCLUSIONS

10.1 SUMMARY

- 10.1.1. The CtoC Scheme will provide a new 13.6km long Busway that will connect Cambourne with the west of Cambridge. The Busway will run along the A428 / A1303 corridor. The Busway will be part new construction and part existing carriageway. It is intended that buses using the Busway will be optically guided.
- 10.1.2. The CtoC Scheme will also include a new Travel Hub (a park and ride facility) that will be situated on the north side of the A428 at Scotland Road, northeast of Hardwick and south of Dry Drayton. The Travel Hub will accommodate parking for up to 2,000 cars and 300 bicycles.
- 10.1.3. This TA has been produced to accompany a Transport and Works Act Order (TWAO) application for the CtoC Scheme. This TA considers two scenarios: without Making Connections and with Making Connections.
- 10.1.4. The principal objectives of the CtoC Scheme are to provide a sustainable transport system that connects Cambourne with Cambridge and which,
 - Supports the delivery of new housing and employment development,
 - Improves connectivity to Cambridge by sustainable modes of travel from residential areas situated to the west of the city,
 - Provides end to end journey time reliability (particularly compared with car journeys), and
 - Provides some congestion relief along the A428/ A1303 corridor.
- 10.1.5. The CtoC Scheme will not generate traffic *per se*. It will enable future and existing residents travelling to Cambridge to adopt sustainable modes of travel, rather than rely on their cars. It will allow commuters travelling into Cambridge to change mode of travel, from car to the bus.
- 10.1.6. The CtoC Scheme will enable rapid and frequent bus services to serve the new development sites coming forward to the west of Cambridge. It will provide a direct bus route between Cambourne and Cambridge – stopping at Bourn Airfield and the University's West Cambridge site *en route*.
- 10.1.7. The CtoC Scheme will require an emergency and maintenance access track which will run alongside the Busway. The track will be utilised as a shared use active travel path which will support journeys by pedestrians, cyclists and equestrians.
- 10.1.8. The Busway will run between Cambourne and Cambridge, passing to the north of the villages of Hardwick and Coton. Residents from Cambourne, as well as residents in nearby villages, will be able to take advantage of the Busway and travel directly into Cambridge, by walking, cycling or by bus.
- 10.1.9. The Travel Hub will intercept car trips on the A428 which would otherwise travel into Cambridge. Changing travel mode from car to the bus will enable car drivers to avoid congestion on the A1303 nearer to Cambridge and in the City itself.
- 10.1.10. Overall, the CtoC Scheme will provide the opportunity for persons travelling to Cambridge from the west to make that journey by bus and active forms of travel. The CtoC Scheme will have a beneficial effect on traffic conditions in Cambridge.

- 10.1.11. A review of accidents demonstrates that there are no existing road safety trends or issues affecting the local highway network. As such, it is considered that provision of the Busway and the Travel Hub will not have a significant detrimental impact on road safety.
- 10.1.12. Comparison of 2041 Do Minimum and Do Something scenarios demonstrates that there is very little difference in the performance of the highway network across both scenarios. That situation applies both without and with Making Connections. It is clear that the CtoC Scheme does not have a detrimental impact on the performance of the highway network. No highways mitigation is required to be provided as part of the CtoC Scheme.
- 10.1.13. Public Transport modelling has been used to support the development of the bus strategy for the CtoC Scheme. The bus strategy is included as part of the Outline Business Case. The bus journey time information illustrates that the CtoC Scheme will be capable of delivering significant savings in bus journey times.
- 10.1.14. With respect to the construction phase, the local highway network has capacity to accommodate the predicted number of construction vehicles. A Construction Traffic Management Plan will be produced for the CtoC Scheme. It is considered that with the implementation of the CTMP no other construction related transport mitigation measures will be required for the CtoC Scheme.

10.2 CONCLUSIONS

- 10.2.1. The CtoC Scheme achieves the objectives set-out in paragraph 10.1.4 above. The CtoC scheme:
- Provides the transport system required to support residential and employment development to the west of Cambridge,
 - Provides the opportunity to travel by sustainable modes of transport into Cambridge,
 - Provides end to end journey time reliability by public transport, and
 - Provides the opportunity for drivers commuting into Cambridge to change their mode of travel and hence provide some relief to congestion on the A428/ A1303 corridor.
- 10.2.2. The traffic and transport operational and construction impacts of the CtoC Scheme are not considered to be severe and, on the basis that a Construction Traffic Management Plan will be developed, no further mitigation measures are required.