Cambridge South East Transport Phase 2

Outline Business Case
Strategic Dimension refresh

Greater Cambridge Partnership

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1. Strategic Dimension

1.1. Introduction

This Strategic Dimension forms a part of the five cases that form the Department for Transport's (DfT) Transport Business Case process. The Strategic Dimension sets out the 'Strategic Fit' and 'Case for Change' in relation to the Cambridge South East Transport Phase 2 (CSET2). It explains the rationale for making the investment and the implications of the scheme not being progressed. It also presents evidence on the strategic policy fit of the proposed scheme. This report also sets out the scheme options which have been considered and the process of arriving at the preferred option.

1.1.1. Updates undertaken in this report

The Cambridge South East Transport Study (formerly known as the A1307, Three Campuses to Cambridge project) aims to deliver fast and reliable public transport links, serviced by a new Travel Hub, together with high-quality cycling and walking routes, for people travelling between Cambridge and the towns and villages to the south east of the city.

A Strategic Case (document reference no. 403394-MMD-BCA-00-RP-BC-0247 Rev C) was produced by Mott MacDonald as part of the Outline Business Case (OBC) stage in May 2020. OBC 2020 was produced to reconfirm the conclusions set out in the A1307 Haverhill to Cambridge (now known as CSET2) Preferred Options Report[1] developed by WSP in 2017.It focused on the detailed assessment of the options to find the optimum solution to address the problems identified.

When the OBC was developed, CSET2 was regarded as one of several Greater Cambridge Partnership (GCP) projects that formed Phase 1 of the longer-term Cambridgeshire Autonomous Metro (CAM) programme. CAM proposals were ceased in 2021, and the CSET2 is no longer being delivered as a part of the wider CAM programme. Further information can be found in the Updated Business Case Position for CSET2 2021 (document reference no. 403394-MMD-BCA-00-TN-BC-0921)[2].

GCP has commissioned Atkins to revisit the OBC to reassess the need for CSET2 and suitability of the scheme. This Strategic Dimension therefore forms a part of the refreshed OBC. The key changes undertaken in this refresh are updates to policy context to reflect the latest national policies (including Transport Decarbonisation Plan 2021, Net Zero Strategy 2021, Gear Change 2021, Bus Back Better 2021 etc.), the local context for the scheme, the impacts of the future growth and developments and a logic map to reflect the case for change. Each section presents a logical proposition on the validity of the scheme in line with emerging and future mobility demands in Cambridge and the South East.

1.1.2. Structure of the Strategic Dimension

The structure of the Strategic Dimension aligns to the latest DfT Business Case Guidance[3] which outlines key areas that should be covered as part of the business case documentation and the level to which they should be undertaken at OBC stage. Table 1-1 shows where the alignment of the Strategic Dimension with DfT guidance.

1.1.3. Alignment with DfT guidance

The key Strategic Dimension elements and questions in the latest DfT Business Case Guidance are listed in Table 1-1 and Table 1-2 respectively, which reference the relevant OBC sections.

[1] A1307 Haverhill to Cambridge Preferred Options Report, REPORT No. 70012014-2016-04, February 2017
[2] CSET-Updated-Business-Case-Position (greatercambridge.org.uk)
[3] https://www.gov.uk/government/publications/transport-business-case/transport-business-case-guidance

Table 1-1 - Overview of the Strategic Dimension – elements

DfT requirements - Key Strategic Dimension elements to be addressed at SOC Stage	Section reference
Organisation overview – an outline of the strategic priorities and responsibilities of the organisation(s) responsible for the proposal (for example DfT, National Highways, or the Local Authority)	1.2
Business strategy and wider strategies – determine the strategic fit of the proposal to the priorities of relevant organisations, the government (for example, the ambition to achieve net zero greenhouse gas emissions by 2050) and the regional, combined and local authorities in scope	1.4
Interdependencies – set out the strategic portfolios, programmes and projects that the investment may interact with or link to: do they contribute towards achieving the same outcomes? Where does the intervention sit within this hierarchy?	1.12
Existing arrangements and the impact of not changing – provide a clear picture of the current service model that serves as the baseline from which to measure future improvements. If applicable, set out the geographical scope of the investment and the economic, social and environmental context of the area: what is the impact of not intervening?	1.5 and 1.6
Business needs and service gaps – determine the organisation's business needs: these are internal and external factors that are needed for the transport intervention to fulfil its objectives	1.8
Problem identification – describe the problem(s) identified to determine the rationale: what is the evidence base underpinning the problem? Does it justify the need for a transport intervention?	1.5, 1.6 and 1.9
SMART spending objectives – establish SMART objectives for what the investment sets out to achieve: these should be specific, measurable, achievable, relevant and time-constrained. SMART objectives should align to the strategic priorities identified and provide clear measures of success	1.10
Scope – explain the scope of the intervention: what will it deliver? What is out-of-scope?	1.1.1

Table 1-2 - Overview of the Strategic Dimension – key questions

DfT requirements - Key Strategic Dimension questions	Section reference
Strategic context	
How does the transport proposal contribute to the strategic priorities of the organisation, wider transport objectives and government ambitions?	1.4
What are the relevant local, regional or network objectives that the proposal contributes to or that are dependent on delivery?	1.4
Is the proposal part of an integrated strategy or programme of work delivered by DfT or other relevant organisations? What is the overall level of impact of this proposal in combination with other connected schemes?	1.12
Who are the target and/or affected population(s)? Have they, and other relevant stakeholders, been consulted on their needs, current behaviours and attitudes to the proposed intervention?	1.7
If this is a major project or programme, is there an integrated assurance plan in place as required by the Major Projects Authority?	To be covered in Management Dimension
Case for change	

DfT requirements - Key Strategic Dimension questions	Section reference
What are the SMART spending objectives that the proposal aims to achieve? How were they determined, and how do they ensure the proposal contributes to achieving the strategic priorities?	1.10
What are the existing arrangements for the provision of transport services? Can they be better utilised or are more fundamental changes required?	1.5
What is the geographical scope of the investment? How does the proposal interact with the socio-economic context of the area(s)?	1.5.1
What problem(s) identified are supported by a robust evidence base?	1.9
Why is the investment needed either now or in the future? What would happen if the proposal didn't go ahead?	1.6
Are there any internal or external business drivers that support the investment or pressures that make it necessary to act?	1.8
How will a successful delivery of the investment be measured?	1.15
What are the constraints and dependencies considering other programmes and projects which are underway? Are there risks to the organisation in taking the proposal forward?	1.12 and 1.17
Was a Starting Gate Review undertaken before the decision was taken to proceed with the investment?	To be covered in Management Dimension
What was the process for generating the longlist of investment options and how have they been refined to a shortlist of options? How was the preferred way forward determined?	1.13
How does each investment option contribute to and/or conflict with achieving the SMART objectives and the strategic priorities identified?	1.16

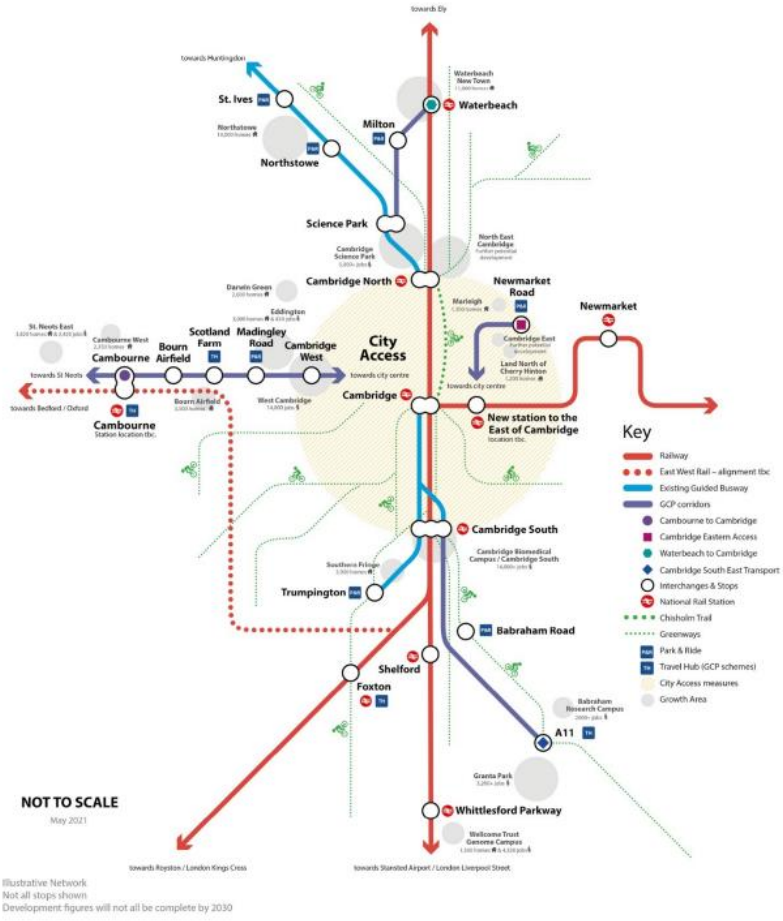
1.2. About Greater Cambridge Partnership and City Deal

The GCP was formed following the Greater Cambridge City Deal signed by central Government in 2014. The GCP is formed of four partners - Cambridge City Council, Cambridgeshire County Council, South Cambridgeshire District Council and University of Cambridge. The GCP is the local delivery body and the scheme promoter for CSET Phase 1 and 2, overseeing the delivery of the City Deal and the promotion of local economic growth and development. The GCP aims to:

- Deliver up to £1 billion of investment, providing vital improvements to infrastructure, supporting and accelerating the creation of 44,000 new jobs and 33,500 new homes to Greater Cambridge by 2031, and;
- Enable a new wave of innovation-led growth in the Greater Cambridge area by investing in infrastructure, housing and skills, thereby addressing housing shortages and transport congestion bottlenecks that will facilitate its continued growth and a continuation of the 'Cambridge Phenomenon'[4].

GCP's transport vision to support and develop Greater Cambridge includes an integrated transport plan formed of new public transport routes offering a viable alternative to car and active travel routes offering safe off-road journeys to pedestrians and cyclists. GCP aims to integrate these plans with the upcoming rail improvements, on-road cycle provisions, traffic management solutions, and improved bus services to ensure the Greater Cambridge area remains thriving part of the region.

Figure 1-1 - GCP's vision for integrated transport plan



Source: Greater Cambridge City Deal Assurance Framework, 2022[5]

[4] Section 0 provides further detail on the Cambridge Phenomenon
[5] Governance-Assurance-Framework-2022 (greatercambridge.org.uk)

This investment fund offers funding for proposed infrastructure in the region to help achieve these aims. The Greater Cambridge City Deal Assurance Framework (2022) has established key strategic objectives against which projects will be prioritised:

- To nurture the conditions necessary to enable the potential of Greater Cambridge to create and retain the international high-tech businesses of the future which bring investment into the UK;
- To better target investment to the needs of the Greater Cambridge economy by ensuring those decisions are informed by the needs of businesses and other key stakeholders such as the universities;
- To markedly improve connectivity and networks between clusters and labour markets so that the right conditions are in place to drive further growth; and
- To attract and retain more skilled people by investing in transport and housing whilst maintaining a good quality of life, in turn allowing a long-term increase in jobs emerging from the internationally competitive clusters and more University of Cambridge spin-outs.

1.2.1. Key transport elements of the City Deal

The Greater Cambridge area needs to accommodate new and growing businesses and research centres whilst ensuring ease of movement between key economic hubs. The City Deal states there is a need to "*connect new developments to each other, and to existing research institutes, science and business parks; to Cambridge city centre and transport hubs, and to the Alconbury Enterprise Zone; to both universities and to residential areas"*.

To achieve this, the City Deal includes an ambitious programme to enhance transport capacity in Greater Cambridge, especially in areas where capacity is identified as an issue. This capacity is needed along key strategic routes to and from the city, and particularly along the routes where significant employment and/or housing growth is planned.

The City Deal vision for a comprehensive sub-regional infrastructure network draws on the key components of the development strategies within the Local Plans and the Transport Strategy for Cambridge and South Cambridgeshire. The City Deal supports the development of a sustainable transport network which aims to improve access to employment hubs and the high-tech clusters in Greater Cambridge by making movement between them more efficient and convenient.

The main element of the proposed strategy is a transport network that links areas of population and employment within the Greater Cambridge area, which will consist of:

- New orbital public transport routes around Cambridge;
- New high quality public transport routes into Cambridge on key routes, connecting existing and new housing developments to major employment and economic hubs;
- A comprehensive network of active travel routes; and,
- High quality bus priority measures on main radial routes.

The City Deal strategy improve transport connectivity for Greater Cambridge, supporting further uptake of sustainable transport modes including bus patronage, walking, and cycling levels. The City Deal also supports carbon reduction, decarbonisation targets, and minimising the environmental impact of transport.

1.3. About Cambridge South East Transport

The Cambridge South East Transport was identified by GCP to improve journey times, reliability and link communities and employment sites in the area south east of Cambridge. The CSET project is made up of two phases detailed below, and aims to offer better public transport and active travel options for the A1307 and A1301 area:

- Phase 1 of CSET (CSET1) includes improvements related to road safety, walking, cycling and bus priority measures along the A1307 between Haverhill and Cambridge. Some of these elements are low cost and do not require extra land, as they are within the highway, or planning consent.
- Phase 2 of CSET (CSET2) involves a new public transport route from the A11 via Sawston and Shelford to the Cambridge Biomedical Campus and a new Travel Hub near the A11/A1307 junction.

Further details of CSET1 and CSET2 are within the OBC 2020[6].

[6] 403394-MMD-BCA-00-RP-BC-0247 Rev C

1.4. Policy context

The policy context of the scheme is detailed within the OBC 2020[7]. This section presents the updates to reflect the CSET2 scheme's alignment with the latest policies and plans since 2020. There are several plans and policies for economic growth, spatial planning and transport which are of relevance to the scheme at national, regional and local level.

1.4.1. National policies

1.4.1.1. National Planning Policy Framework (2021)

The details of the National Planning Policy Framework (NPPF) and the alignment between it and the CSET2 scheme can be found in section 3.1.1 of the OBC 2020.

1.4.1.2. DfT Transport Investment Strategy (2017)

The details of the Transport Investment Strategy (TIS) and the alignment between it and the CSET2 scheme can be found in section 3.1.2 of the OBC 2020.

1.4.1.3. DfT Transport Decarbonisation Plan (2021)

DfT's Transport Decarbonisation Plan (TDP)[8] outlines the Governments' commitments and planned actions to deliver the net zero greenhouse gas (GHG) emissions goal for the transport sector by 2050. Transport is the largest contributor to UK domestic GHG emissions and responsible for about 27% of the total emissions in 2019. The TDP provides commitments and enablers to reduce the GHG emissions in the transport sector. The measures identified to decarbonise transport would also deliver wider benefits like improved air quality, health, noise and reduced congestion for everyone across UK.

The TDP includes the below for transport sector:

- The pathway to net zero in the UK; and
- The wider benefits net zero can deliver; and
- The principles that underpin the approach to delivering net zero for the transport sector.

The TDP reflects an increasing priority for decarbonisation of the transport network, including a greater focus on public transport and active modes (as set out in other strategies such as Gear Change[9] and Bus Back Better[10]).

The Plan's strategic priorities include:

- Priority 1: Accelerating modal shift to public and active transport - achieved by increasing the share of journeys taken by cycling and walking and the delivery and development of a cohesive, integrated, and affordable net zero public transport network.
- Priority 2: Decarbonising road transport - With all new non-zero emission road vehicles, from motorbikes to HGV's, phased out by 2040. A fleet of fully zero emission road vehicles will remove the source of 91% of today's domestic transport GHG emissions.
- Priority 3: Decarbonising how we get our goods - With freight systems decarbonised and pioneering new zero emission technologies introduced. A shift to zero carbon modes of transport goods and services, including greater use of rail and domestic maritime, will make the freight system net zero before 2050.
- Priority 4: Place-based solutions – sustainability will be at the heart of levelling-up, with every place in the UK having its own net zero emission transport network before 2050.
- Priority 5: UK as a hub for green transport, technology, and innovation – The UK will play a key role in the green revolution and will lead the deployment of wider future of transport technologies.
- Priority 6: Reducing carbon in a global in a global economy – the UK will significantly reduce the impact of aviation on the environment through a combination of new aerospace technology such as electric and

[7] 403394-MMD-BCA-00-RP-BC-0247 Rev C
[8] https://www.gov.uk/government/publications/transport-decarbonisation-plan
[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904146/gear-change-a-bold-vision-for-cycling-and-walking.pdf
[10] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/980227/DfT-Bus-Back-Better-national-bus-strategy-for-England.pdf

hydrogen aircraft, development and commercialisation of sustainable aviation fuels, operational efficiencies, and market-based measures.

Scheme's alignment with TPD

The CSET2 scheme is a significant transport intervention for Cambridge and is strongly aligned with the UK's Decarbonisation Plan. The scheme will introduce a new public transport route in South East Cambridge, connecting major employment hubs to the city, and will provide modal shift opportunities towards sustainable public transport mode.

The scheme aligns with the TDP's strategic priorities by:

- Facilitating the modal shift by provision of a new public transport and providing an attractive alternative to the private car;
- Supporting the net zero emission targets by potential modal shift and providing sustainable transport option;
- Support decarbonisation by providing public transport connectivity in new areas, cycle parking at the transport hub and bus stops, and support electric vehicle charging points.
- Ensuring the county has resilient transport infrastructure to adapt through the promotion and encouragement of sustainable travel and ensuring sufficient future capacity within the county's transport network. The delivery of CSET2 should be seen as essential to support the ongoing growth of Cambridge, and the UK's commitments towards decarbonisation of the transport sector.

1.4.1.4. 10 Point Plan for a Green Industrial Revolution (2020)[11] & Net Zero Strategy: Build Back Greener (2021)

The 10 Point Plan sets out the approach the Government will take to build back better, support green jobs and accelerate the path towards Net Zero. The following areas from the 10 Point Plan are relevant to CSET2:

- Green public transport, cycling and walking;
- Protecting our natural environment; and
- Zero-emission vehicles.

The Net Zero Strategy builds on the foundations set out in the 10 Point Plan, setting out how the UK can achieve its net zero target by 2050 across the different sectors of the economy. This includes commitments to:

- Increase the share of journeys taken by public transport, cycling and walking; and
- Invest £3 billion in the National Bus Strategy, creating integrated networks, more frequent services, and bus lanes to speed journeys, and support delivery of 4,000 net zero emission buses and the infrastructure needed to support them.

Scheme's alignment with 10 Point Plan and Net Zero Strategy

The CSET 2 scheme introduces a new public transport route in South East Cambridge which connects major employment hubs to the city. It will support the ambitions and commitments of the 10 Point Plan and Net Zero Strategy by:

- Providing improved public transport access and connectivity to South East Cambridge as attractive alternatives to private car;
- Increasing the share of journeys undertaken by public transport; and
- Supporting the shift towards sustainable modes of transport and zero emissions.

1.4.1.5. Levelling Up the United Kingdom (2022)

The Levelling Up the United Kingdom (hereafter Levelling Up) White Paper (2022)[12] is a flagship economic programme, which will seek to spread opportunities more equally across the country and 'narrow the gap'

[11] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936567/10_POINT_PLAN_BOOKLET.pdf

[12] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1052708/Levelling_up_the_UK_white_paper.pdf

between all parts of the UK in terms of economic performance, services, and opportunities. To achieve this, Levelling Up will require activity in four 'focus areas':

- Boosting productivity, pay, jobs and living standards by growing the private sector;
- Spreading opportunities and improving public services;
- Restoring a sense of community, local pride and belonging; and,
- Empowering local leaders and communities.

Grouped under these four focus areas are 12 'national missions' to be achieved by 2030, which are essentially objectives. Those most relevant to CSET2 are below:

- Pay, employment and productivity will have risen in every area of the UK;
- Domestic public investment in R&D outside the Greater South East will increase by at least 40%;
- Public transport connectivity across the UK to be 'significantly closer to the standards of London', including improved services, integrated ticketing and simpler fares;
- Well-being will have improved in every area of the UK.

Scheme's alignment with Levelling Up

The scheme aligns well with the DfT Levelling Up White Paper as it aims to improve public transport connectivity and accessibility in South East Cambridge. It will connect communities to large employment destinations and hubs in central Cambridge and South East Cambridge. The scheme will support the region's strong track record of delivering growth and productivity by facilitating growth of the strong hi-tech, biomedical and other clusters in South East Cambridge.

The scheme will encourage inward investment and growth of housing and development by future-proofing the transport network, as well as easing congestion and supporting the shift to sustainable public transport modes.

1.4.1.6. Bus Back Better (2021)[13]

Bus Back Better is the national bus strategy for England. The central aim of the strategy is to increase patronage on buses, firstly back to the pre-pandemic levels, and then to exceed it. The most direct way to achieve this aim is to make buses a practical and attractive alternative to the private car.

This strategy aims to make buses more frequent, faster, more reliable, easier to understand and use, better coordinated and cheaper.

The strategy recognises that strong bus networks connect communities, provide access to employment opportunities and boost economic growth and social inclusion. The key to making bus services more attractive is making them faster and more reliable. Bus priority measures achieve this through allocation of road space for bus travel, traffic signal priority, bus gates, and clear and consistent signage. The Bus Back Better Strategy also supports more Bus Rapid Transport networks, using high-capacity buses on segregated, bus-only roadways with stops.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1052708/Levelling_up_the_UK_white_paper.pdf

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/980227/DfT-Bus-Back-Better-national-bus-strategy-for-England.pdf
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/980227/DfT-Bus-Back-Better-national-bus-strategy-for-England.pdf

Scheme's alignment with the Strategy

The scheme aligns well with the Bus Back Better Strategy as it provides a new public transport route along the A1307 corridor in South East Cambridge. The new stops and facilities will improve user experience with shelter and real-time passenger information; and the scheme will provide drop off facilities, disabled parking, and cycle parking and lockers to encourage active travel.

CSET 2 aims to transform public transport connectivity along the corridor, delivering better bus services which provides an attractive, and faster, alternative to private vehicles. It helps to achieve the objectives of the Bus Back Better strategy by:

- Increasing patronage levels on buses post-pandemic;
- Encouraging modal shift towards bus travel;
- Improving passenger satisfaction by providing betterand more frequent services; and
- Contributing towards the green transport revolution.

1.4.1.7. Cycling and Walking Investment Strategy (2022)

The second Cycling and Walking Investment Strategy (CWIS2) follows CWIS1 (2017) and reaffirms the government's commitment to making walking, wheeling, and cycling the natural choices for millions of journeys. Active travel is good for the environment, the economy and public health. It eases congestion and benefits air quality. The government has committed an unprecedented £2 billion of funding for active travel over 5 years. The primary aim of the investment is for 50% of all journeys in towns and cities to be walked or cycled by 2030.

CWIS2 sets out objectives and financial resources for the period April 2021 to March 2025. The aims and targets in CWIS1, alongside the vision set out in Gear Change (2020) have informed the revised set of 4 objectives to 2025 to:

- Increase the percentage of short journeys in towns and cities that are walked and cycled from 41% in 2018/19 to 46% in 2025.
- Increase walking activity, where walking activity is measured as the total number of walking stages per person per year, to 365 stages per person per year in 2025.
- Double cycling where cycling activity is measured as the estimated total number of cycling stages made each year, from 0.8 billion stages in 2013 to 1.6 billion stages in 2025.
- Increase the percentage of children aged 5 to 10 who usually walk to school from 49% in 2014 to 55% in 2025.
- The objectives reflect ambitions to boost overall levels of walking, wheeling and cycling across England while undertaking targeted investment to enable more walking, wheeling and cycling in towns and cities.

Scheme's alignment with CWIS2

CSET2 is closely aligned to the revised set of objectives set out in CWIS2 and will contribute towards the goals of the strategy. The new Travel Hub proposed as a part of CSET2 provides interchange between different modes of transport such as walking, cycling, existing bus services and the new public transport route. The Travel Hub includes provision of secured and covered cycle parking, waiting room with toilets and lockers to encourage active travel and easy integration with other modes in the area.

The scheme promotes the use of sustainable modes of transport by dgproviding improved public transport infrastructure and active travel facilities at the new Travel Hub. CSET2 also includes a maintenance route which can be used by pedestrian and cyclists.

CSET 2 in coordination with Linton Greenway being delivered as a part of CSET1 is expected to positively impact the levels of active travel in South East Cambridge. The new route will enable easier sustainable travel and encourage the walking and cycling activity in the area.

1.4.1.8. Gear Change (2020) and Gear Change: one year on (2021)

Increasing cycling and walking can help tackle some of the most challenging issues faced by societies – improving air quality, combatting climate change, improving health and wellbeing, addressing inequalities, and tackling congestion on the highway network.

The Gear Change Plans outline the government's vision to make England a great walking and cycling nation. It sets out actions required at all levels of government to achieve these, grouped under four key commitments to:

- Create better streets for cycling and pedestrians by delivering safe walking and cycling routes, low-traffic neighbourhoods, School Streets, zero-emission cities and improving the National Cycle Network;
- Put cycling and walking at the heart of transport, place-making, and health policy by ensuring schemes cater for walking and cycling, providing better integration with trains and buses, embedding walking and cycling in the planning system;
- Empower and encourage local authorities by increasing funding, capacity and support, allowing local authorities to enforce against moving traffic offences, setting standards and introducing a new commissioning body and inspectorate, Active Travel England; and
- Enable people to cycle and protect them when they cycle by ensuring that every adult and child who wants it receives cycle training, working with GPs to prescribe cycling, tackling cycle theft, updating The Highway Code and establishing an e-cycle support programme.

The aspects of the strategy most relevant to the south-east of Cambridge are outlined below:

- Developing a safe, continuous, direct network for cycling in towns and cities, physically separated from pedestrians and highway traffic and connecting places people want to go. In order to increase cycling, cycling infrastructure will be improved and redesigned;
- Cycling infrastructure should be designed for significant numbers of cyclists and for non-standard cycles;
- Cycle parking must be included in substantial schemes, particularly in city centres, trip generators and in areas where people live; and
- Cycle routes must flow and feel direct and logical.

Scheme's alignment with Gear Change

CSET 2 will contribute to the commitments of the Gear Change plan for cycling and walking in England. The Travel Hub proposed as a part of CSET2 provides interchange between different modes of transport such as walking, cycling, existing bus services and the new public transport route. The Travel Hub includes provision of secured and covered cycle parking, waiting room with toilets and lockers to encourage active travel and easy integration with other modes in the area.

The scheme will provide active travel facilities at the Travel Hub and improve public transport along a section of the A1307 corridor, encouraging healthy and sustainable travel across the area, and providing viable and attractive alternatives to private vehicles.

CSET2 in coordination with Linton Greenway being delivered as a part of CSET1 is expected to positively impact the levels of active travel in South East Cambridge.

1.4.2. Regional policies

The details of the following policies and the alignment between them and the CSET2 scheme can be found in OBC 2020. The relevant sub-sections in OBC 2020 are listed in Table 1-3 below.

Table 1-3 Regional Policies and relevant sub-sections in OBC 2020

Regional Policies	Relevant sub-section in OBC 2020
Greater Cambridge Greater Peterborough Strategic Economic Plan (2014)	3.2.1
Cambridgeshire Third Local Transport Plan (2011-2031)	3.2.2
Cambridgeshire and Peterborough Local Transport Plan (CPLTP) (2020)	3.2.4
Cambridgeshire Long Term Transport Strategy	3.2.5
Cambridgeshire County Council Climate Change and Environment Strategy	3.2.6

1.4.3. Local policies

The details of the following local policies and the alignment between them and the CSET2 scheme can be found in OBC 2020. The relevant sub-sections in OBC 2020 are listed in Table 1-4 below.

Table 1-4 Local Policies and relevant sub-sections in OBC 2020

Local Policies	Relevant sub-section in OBC 2020
Transport Strategy for Cambridge City and South Cambridgeshire (2014)	3.3.1
Cambridge Air Quality Management Plan (2018 – 2023)	3.3.2
South Cambridgeshire Local Plan (2018)	3.3.3
Cambridge City Local Plan (2018)	3.3.4
Cambridge City Access Strategy (2018)	3.3.5

Updates to the local policies since 2020 are presented below.

1.4.3.1. Emerging Greater Cambridge Local Plan (GCLP)

Cambridge City Council and South Cambridgeshire District Council are currently working together to create a joint Local Plan for the two areas which will be referred to as the Greater Cambridge Local Plan (GCLP). This will ensure that there is a consistent approach to planning, and the same planning policies, where appropriate across both areas. The Greater Cambridge Local Plan will guide how Greater Cambridge will change over the next two decades and beyond. Upon adoption the Greater Cambridge Local Plan will replace the South Cambridgeshire Local Plan 2018 and Cambridge City Local Plan 2018 as set out above.

The proposed vision is to decrease the climate impact by reducing reliance on the private car and create thriving neighbourhoods with variety of jobs and homes.

While the Plan is at an early stage of development and there are no confirmed proposals, there are 19 new sites suggested, which might be suitable for additional development to meet needs up to 2041. One of the key proposals put forward in this list of suggested sites relevant to CSET2 is **Policy S/CBC: Cambridge Biomedical Campus (including Addenbrooke's Hospital)**[14]. The area of expansion was previously allocated for its extension through the South Cambridgeshire Local Plan 2018 (Policy E/2).

The CBC have prepared a 2050 Vision[15], which set out its future aspirations for further development. The First Proposals for Policy S/CBC[16] mention that large areas of land south of the campus and between the M11, Addenbrookes Road and the A1301 have been proposed for the expansion.

Scheme's alignment with the upcoming GCLP

CSET 2 is well aligned with the proposed vision of GCLP, and **can play a key role in facilitating the** expansion of the **Cambridge Biomedical Campus (Policy S/CBC).** CSET2 will ensure that the campus has sustainable public transport connectivity from South East Cambridge and city centre so the congestion around the campus is not exacerbated.

Improvements to public transport infrastructure and provision of active travel facilities at the new Travel Hub to encourage uptake of cycling and walking directly aligns with the objectives of the GCLP.

A new public transport route will also maximise the potential for journeys to be undertaken by sustainable modes within South East Cambridge and provide users with a viable alternative to car travel.

CSET2 along with the proposed Cambridge South Station can help maximise the significant opportunity presented by the expansion of Cambridge Biomedical Campus, and ensure the campus is well connected by sustainable modes. The Cambridge Biomedical Campus is a key location for the life-sciences and biotechnology cluster of Greater Cambridge and is of national and international importance.

[14] Policy S/CBC: Cambridge Biomedical Campus (including Addenbrooke's Hospital) | Greater Cambridge Shared Planning (greatercambridgeplanning.org)
[15] Cambridge Biomedical Campus Vision 2050, accessed at CBC+Vision+2050+-+Autumn+2021+update (squarespace.com)
[16] Policy S/CBC: Cambridge Biomedical Campus (including Addenbrooke's Hospital) | Greater Cambridge Shared Planning (greatercambridgeplanning.org)

1.4.3.2. Cambridgeshire and Peterborough Local Industrial Strategy (2019)

The Cambridgeshire and Peterborough Local Industrial Strategy sets out how Cambridgeshire and Peterborough will maximise the economy's strengths and remove barriers that remain to ensure the economy is fit for the future. The Local Industrial Strategy sets out three priorities for Cambridgeshire and Peterborough's economy:

- Improve the long-term capacity for growth in Greater Cambridge by supporting the foundations of productivity;
- Increase sustainability and broaden the base of local economic growth; and
- Expand and build upon the clusters and networks that have enabled Cambridge to become a global leader in innovative growth.

The Strategy recognises that importance of transforming transport and infrastructure capacity in order to maximise economic growth of the area. The businesses surveyed to inform the evidence base presented in the Local Industrial Strategy suggested that insufficient infrastructure is hampering productivity growth and is set to increase as a problem over the next decade[17]. The Strategy also details that the existing transport network in Cambridge was designed for a small town, which is now struggling to cope with commuters looking to work in the city and on the periphery.

The Strategy highlights that the transport issues will significantly reduce the success of Greater Cambridge if they are not dealt with. It cites that transport in the region is a limitation, with businesses stressing that *'better road networks and finding a solution to reduce traffic congestion in Cambridge'* was a key priority.

Scheme's alignment with the Industrial Strategy

Delivery of CSET 2 is well aligned with the three priorities of the Cambridgeshire and Peterborough Local Industrial Strategy. CSET 2 will deliver additional capacity to the transport network and provide improved connectivity to key economic hubs.

CSET 2 will support ongoing growth on the Cambridge Biomedical Campus, Granta Park and Babraham Research Campus and holds potential to unlock further undeveloped land in South East Cambridge, encouraging investment and sustained economic growth.

The delivery of CSET 2 should be seen as essential to supporting the ongoing growth of Cambridge, addressing existing issues across South East Cambridge, futureproofing the transport network and enabling future transport solutions.

1.4.3.3. Greater Cambridge Partnership: Draft Future Investment Strategy (2019)

The GCP started the process of development of an ambitious Future Investment Strategy in 2017, reflecting the key priorities for the deployment of the Investment Fund in order to deliver on the City Deal commitment.

The Future Investment Strategy sets out initial packages of interventions based around GCP's five workstreams: transport, smart, housing, skills, and economy and environment. **CSET is recognised as one the transport package** to create a better and greener transport network, connecting people to homes, jobs, education, and opportunity.

Poor transport connectivity continues to be a key barrier impacting on the labour market and economic growth in Cambridge. In November and December 2018, the Joint Assembly and Executive Board considered papers on City Access and Bus Service Improvements, including analysis to identify and prioritise the public transport service improvements that will make public transport a more attractive option than the private car. Looking at the commuter routes, both now and in the future, this analysis found that the GCP should consider infrastructure and service provision along key corridors covering major residential areas and major employment sites in and around Greater Cambridge.

The Future Investment Strategy focuses investment on strategically critical transport infrastructure, along with a range of supporting interventions e.g., investment in energy grid capacity, on-going interventions in skills and smart technology.

[17] Cambridgeshire and Peterborough Local Industrial Strategy, 2019

Scheme's alignment with the Strategy

CSET is recognised as one the transport package to create a better and greener transport network within the strategy.

CSET2 will deliver sustainable travel improvements in South East Cambridge in line with the Strategy, encouraging users travelling from the south east of Cambridge to undertake journeys into the city via sustainable modes of travel. The Phase 2 measures also seek to improve quality of life across the study area by reducing carbon emissions generated as a result of private car journeys to key employment sites and the city centre.

1.4.4. Other relevant studies

There are other relevant studies which have been considered as part of the CSET2 scheme. Their details and the alignment between them and the CSET2 scheme can be found in OBC 2020. The relevant sub-sections in OBC 2020 are listed in Table 1-5 below.

Table 1-5 Other relevant studies and relevant sub-sections in OBC 2020

Relevant Studies	Relevant sub-section in OBC 2020
Cambridge Biomedical Campus Transport Needs Review Parts 1, 2 and 3 (2019)	3.4.1
Cambridgeshire and Peterborough Independent Economic Review (2018)	3.4.2

1.4.5. Summary of policy review

This review has examined a comprehensive range of policy and strategies developed by the UK Government, Greater Cambridgeshire organisations and local Cambridge bodies.

CSET2 aligns strongly to national, regional and local policy and strategy, as the scheme will provide significant improvements to the public transport network in South East Cambridge and beyond by encouraging more journeys by sustainable modes for all users and reducing reliance on private cars. The scheme will alleviate congestion specifically along the A1307 corridor bringing wider environmental benefits and improving local air quality. The scheme will also provide solution to the urgent need to ensure continued growth to the 'Cambridge Phenomenon' and support the hi-tech clusters of international importance.

The scheme will also contribute to **GCP's objectives** as well as the **City Deal and Future Investment Strategy** which aim to address the poor public transport connectivity and congestion in Cambridge and Greater Cambridgeshire.

Overall, the **scheme has a very strong strategic fit with the policies** and holds potential to unlock further undeveloped land across South East Cambridge and beyond, encouraging investment and sustained economic growth. The delivery of **CSET2 should be seen as essential to supporting the ongoing and future growth of Grater Cambridgeshire**, addressing existing issues across South East Cambridge and beyond, futureproofing the transport network and enabling future transport solutions.

Alignment with the national policies

- CSET2 is well aligned with national policies like **NPPF, DfT's Transport Investment Strategy, Bus Back Better Strategy and Levelling Up** as it will provide a sustainable mode of public transport in south east and supports Greater Cambridge's strong track record of delivering growth and productivity. It will also positively impact active travel and easy integration with other modes through facilities at Travel Hub and support the policies promoting active travel.

Alignment with the regional policies

- The scheme strongly supports the **wider regional transport policies of Cambridgeshire, Greater Cambridge and Peterborough**. CSET2 is recognised by Cambridgeshire and Peterborough LTP as **one of the Strategic Projects** that links Cambridge to the south Cambridgeshire. The LTP also highlights that employment sites like **CBC lack good public transport accessibility.** Similarly, GCGP SEP highlights the traffic growth and congestion near key employment centres in Cambridge. CSET2 will improve sustainable transport connectivity in South East Cambridge and Greater Cambridgeshire, and support major employment hubs like the CBC and Granta Park.

Alignment with the local policies

- The scheme will contribute largely to **specific policies of Local Plans of Cambridge City, South Cambridgeshire and upcoming plan of Greater Cambridge** which recognise the national and international importance of CBC and the need to support its future aspirations of expansion. CSET2 has the potential to facilitate the future expansion of the Campus, and other high-tech clusters in south east by provision of sustainable public transport connecting the south east and Greater Cambridge to city centre. The Transport Strategy recognise congestion issues at specific locations on the A1307 and outlines the need for a high quality passenger transport offering alternative travel options to private car between Haverhill and Cambridge.

1.5. Current context for the scheme

Parts of this section have been summarised from the OBC 2020[18] to use the existing background and understanding of the scheme by highlighting the geographic, socio-economic and transport context of the study area and its surroundings. It is a crucial part of the process to understand both the initial and current challenges faced by the study area and its transport system.

The focus of this section is informing and identifying the existing problems within the study area and linked with future growth and developments addressed in Section 1.6.

1.5.1. Geographical context

Cambridge is situated in southern Cambridgeshire, in the east of England. It is the county town of Cambridgeshire and one of the fastest growing cities in Europe. Cambridge is approximately 55 miles north of London and 95 miles east of Birmingham and is well connected by roads and rail to both major cities, as well as other regional centres including Peterborough, Norwich, Ipswich and Leicester.

Most of Cambridge's urban area is within Cambridge district, under the administration of Cambridge City Council. It is mostly urbanised and therefore has relatively high population and job densities. The city of Cambridge is fully surrounded by South Cambridgeshire district, as shown by Figure 1-2. South Cambridgeshire is more rural and suburban by nature, and as a result is generally less densely populated than the city of Cambridge.

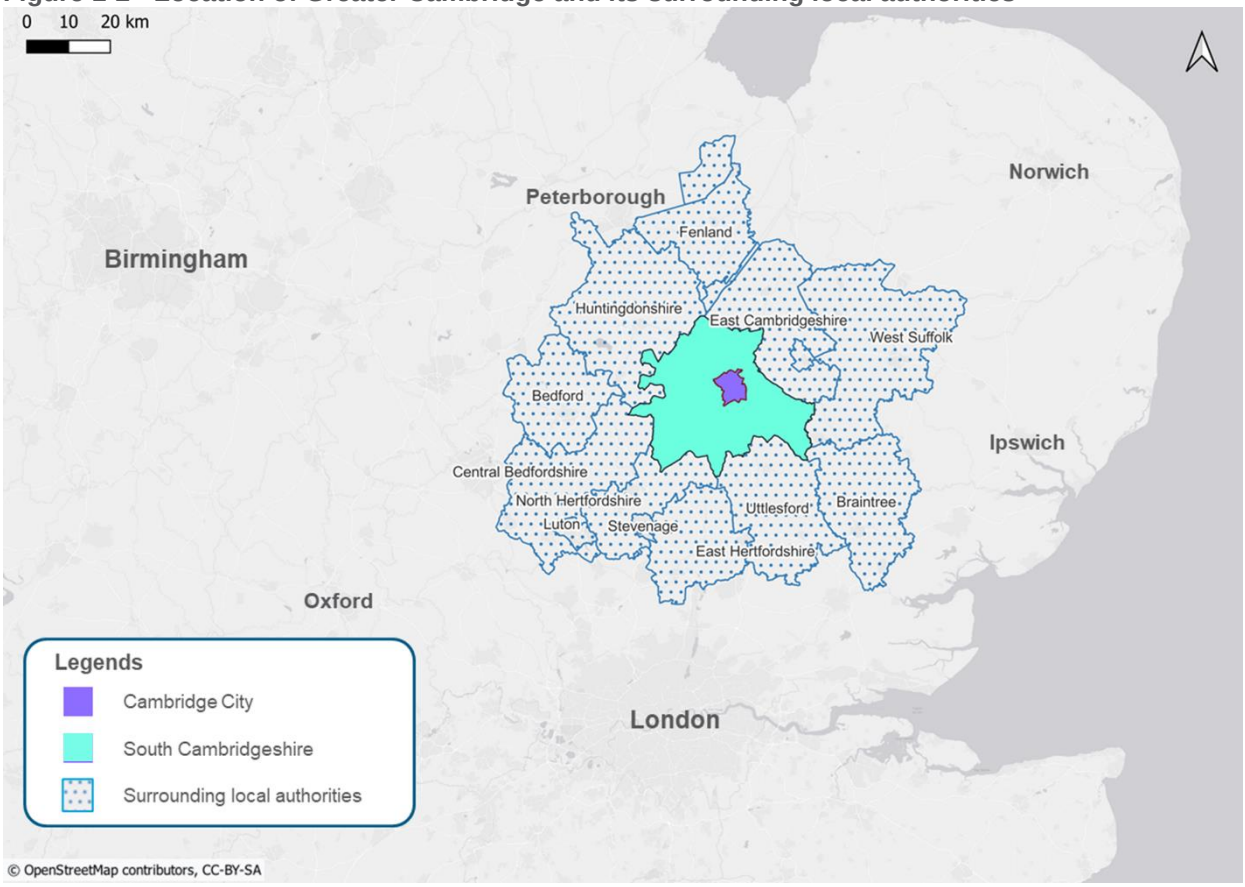
The two districts have historically been strongly connected, with many people residing in one while working in the other. Functionally, they form the Greater Cambridge city region. Recognising this, central Government signed the Greater Cambridge Partnership in 2014, aiming to deliver integrated transport planning and investments for the city region to support its economic and population growth.

Greater Cambridge is a city region of regional and national significance. Its workforce catchment extends beyond the boundary of the city region and well into the surrounding local authorities where many workers live.

For the rest of this document, the city of Cambridge will be referred to as Cambridge or Cambridge City, whilst the surrounding South Cambridgeshire district will be referred to as South Cambridgeshire. Greater Cambridge will be used explicitly when describing the city region comprised of both districts.

[18] 403394-MMD-BCA-00-RP-BC-0247 Rev C

Figure 1-2 - Location of Greater Cambridge and its surrounding local authorities



1.5.2. Socio-economic profile

1.5.2.1. Demographics

In 2020, the population was approximately 125,100 in Cambridge and 160,900 in South Cambridgeshire[19]. This means about 286,000 people reside within the boundary of Greater Cambridge.

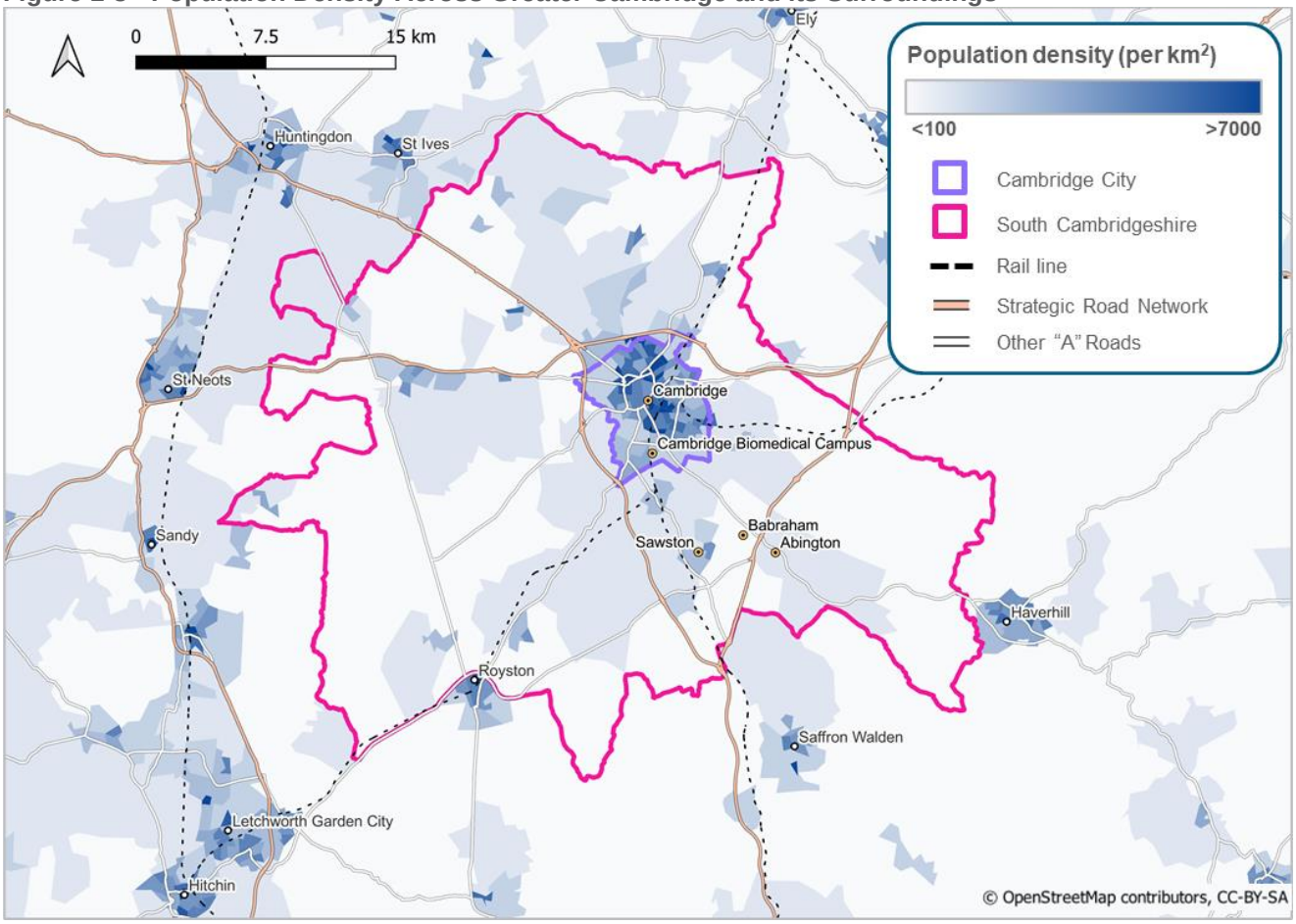
As shown in Figure 1-3, population density is significantly higher in the built-up area of Cambridge City compared to the more rural South Cambridgeshire.

OBC 2020 highlights that one major contributing factor to Cambridge's high population density is that the city hosts a large academic population from the University of Cambridge and the Anglia Ruskin University. These two universities serve around 30,000 students, by some estimates[20]. Since students represent a significant proportion of the population in Cambridge, the size of this cohort can fluctuate according to term time and may lead to a peak population higher than the official estimate.

The prominent student population in Cambridge is also evident when analysing the population composition by age group, as presented in Table 1-6. Approximately 1 in every 3 residents of Cambridge City are between the age of 16 to 29. The population breakdown of South Cambridgeshire is more in line with the national average, with people aged 45-64 being the most prominent.

[19] Office for National Statistics Mid-2020 Population Estimates by Year of Age and Sex
[20] The Complete University Guide. Archived from the original on 14 January 2013

Figure 1-3 - Population Density Across Greater Cambridge and its Surroundings



Source: Population estimates from ONS, 2020

Table 1-6 - Population composition by age group[21]

	Cambridge	South Cambridgeshire	Greater Cambridge	England
Aged 0 - 15	18%	20%	19%	19%
Aged 16-29	33%	13%	21%	17%
Aged 30-44	17%	20%	18%	20%
Aged 45-64	20%	28%	24%	26%
Aged 65 and over	13%	20%	17%	19%

Attracted by the presence of the universities and a vibrant economy in Cambridge, the population of Greater Cambridge experienced a significant growth in the first decade of the 21st century[22]. As shown by Table 1-7, both Cambridge City and South Cambridgeshire grew about twice as fast as England did as a whole However, such rapid growth has slowed down in the 2010s, especially within Cambridge City. While population in South Cambridgeshire grew at a rate similar to the national average, the population in Cambridge City only increased by 2% in 10 years.

As a result, more than 80% of the population growth in Greater Cambridge in the 2010s were in the more suburban/rural South Cambridgeshire. With Cambridge City still being the economic and employment centre of the city region (which will be discussed in further detail in the next sub-chapter), these new residents are

[21] Office for National Statistics: Mid-2020 Population Estimates by Year of Age and Sex
[22] Office for National Statistics: Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland

expected to be travelling inward for employment, education and other services, of which many are reliant on public transport.

Table 1-7 - Historical population growth trend

Population (to the nearest 100)	**Cambridge**	**South Cambridgeshire**	**Greater Cambridge**	**Cambridgeshire**	**England**
2001	109,900	130,500	240,400	554,700	49,449,700
2011	122,700	149,800	272,600	622,300	53,107,200
2020	125,100	160,900	286,000	657,200	56,550,100
Growth rate					
2001-11 growth	12%	15%	13%	12%	7%
2011-20 growth	2%	7%	5%	6%	6%

Demographics – key points

- The population within Greater Cambridge is approximately 286,000, with about 125,100 in the smaller but more densely populated Cambridge and 160,900 in the more rural South Cambridgeshire.
- As expected for a university city, 1 in every 3 residents in Cambridge are between the age of 16 and 29, demonstrating a disproportionately large student population. The population composition of South Cambridgeshire is more similar to the national average, with people aged 45-64 being the most prominent.
- Greater Cambridge experienced strong population growth in the 2000s, both in Cambridge City and South Cambridgeshire.
- Growth within Cambridge City has been slow in the past decade due to rural expansion. As a result, more than 80% of population growth was observed in the more rural South Cambridgeshire whilst commercial activities remain high in the city. This has created significant inward and outward travel demand given Cambridge City is still the economic and employment centre of the region. CSET2 will improve connectivity to Cambridge City and support the growth of South Cambridgeshire.

1.5.2.2. Economy, industries, and business

Greater Cambridge is renowned for being a world-leading centre for research, innovation and technology. Over the past 50 years there has been an explosion of globally significant companies and innovations across bioscience, medicine and technology. The 'Cambridge Phenomenon', is a term that describes the thriving hi-tech and biotech industry, which has developed since the 1960's.

Driven by the following factors, there is a strong and diverse economy in Cambridge as well as Greater Cambridge:

- A world class university that draws talent from across the globe, fostering innovation and encouraging new businesses.
- The area's scale and connectedness allow overlapping networks to develop and facilitate a culture of co-operation and cross-fertilisation between entrepreneurs and academics, and
- Retaining a strong heritage and sense of place, thereby competing with other world cities as a good place for business leaders and their families to live, not just a good place to do business.

Greater Cambridge is home to world-leading research centres such as the Medical Research Council (MRC) Laboratory for Molecular Biology, the Babraham Institute for immunology research, and the Wellcome Trust Sanger Institute for Genomic Research. The new Papworth Hospital opened at the CBC next to Addenbrooke's Hospital, uniting this internationally recognised heart and lung treatment institution with other world-leading healthcare organisations.

The University of Cambridge, which is amongst the world's top universities, attracts global talent, fosters innovation and encourages business spin-outs. Cambridge has been at the forefront of the development of

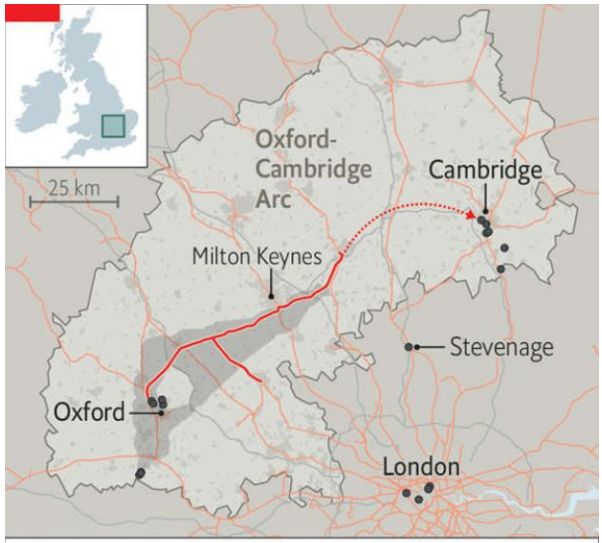
disruptive technologies, ranging from drug modelling, DNA sequencing and alternative fuels to network computing, inkjet printing, low power semiconductors, speech recognition software and telecommunications.

This entrepreneurial environment and concentration of people focused on science and engineering is attracting international businesses to invest in the area. More than 25 of the world's largest corporations have established operations in Cambridge, including Amazon, Apple, HP, Illumina, Microsoft, Sanofi, Siemens and Qualcomm. AstraZeneca has chosen Cambridge for its global research headquarters for 2,000 staff. Cambridge has transformed from a city characterised by a high rate of start-ups to a city, which major companies class worthy of housing headquarters.

Building on the success of the 'Cambridge Phenomenon', Cambridgeshire has also successfully built a reputation as an attractive location to invest and expand businesses, bringing businesses to Cambridge which might otherwise not have invested in the UK. Economic growth experienced has been driven primarily, but not entirely, by rapid business creation. In the five years between 2015 and 2019, more than 8,000 new businesses were created in Great Cambridge, almost half of the total number in Cambridgeshire. This demonstrates the Greater Cambridge's attractiveness for businesses creation, thanks to a skilled workforce, transport connectivity and the preference for new businesses to be closer to existing businesses, especially in knowledge-intensive sectors.

Industry spotlight

Cambridge Biomedical Campus and Cambridge's South East - The heart of the life-science industry, a jewel in Britain's economy.



"Few industries have greater growth potential than life sciences."

In an article published by The Economist on July 20th, 2022, it has been claimed that the life-sciences industry is a jewel in Britain's economy, and Britain's most vibrant collection of life-sciences talents and capitals are in the "golden triangle" covering Cambridge, London and Oxford. While strong clusters have developed around all three vertices of the triangle, the largest is in Cambridge.

At the heart of the Cambridge cluster, the Cambridge Biomedical Campus is the biggest centre for medical research and health science in the entirety of Europe. Its world-leading status has been reaffirmed as it has been chosen as the site of AstraZeneca's new global headquarters, which alone will house 2,000 employees once completed. The CBC is supported by a number of growing institutions to its south-east, such as the Babraham Research Campus.

Led by this mega cluster, British life-sciences firms raised £4.5bn in 2021, compared to £261m in 2012. With such impressive growth, the life-sciences industry will have an increasingly important role to play going forward in reviving Britain's currently sagging economy.

To fully realise its growth potential, investments will likely be required on multiple fronts from both private and public investors, on facilities such as laboratories and NHS data management infrastructure. This also needs to be supported by residential developments and transport infrastructure, which ensures the industry's growing workforce will have access to affordable housing and efficient transportation.

Cambridge's status as an internationally renowned life-sciences hub also makes it a key part of the UK employment strategy, the growth of which carries national significance. Hosting about 60% (206,600) of total

jobs in Cambridgeshire despite only taking about a quarter of its land area[23], Greater Cambridge is a net importer of workers and provides a key source of employment for an area extending far beyond its boundary.

Within Greater Cambridge itself, about 60% of the jobs are located in Cambridge City, which is reflected by its high job density shown by Figure 1-4. This is expected as the University of Cambridge, as well as most of the aforementioned science parks, research centres, hospitals and companies are established within the boundary of Cambridge City.

Figure 1-4 - Job density across Greater Cambridge and its surroundings

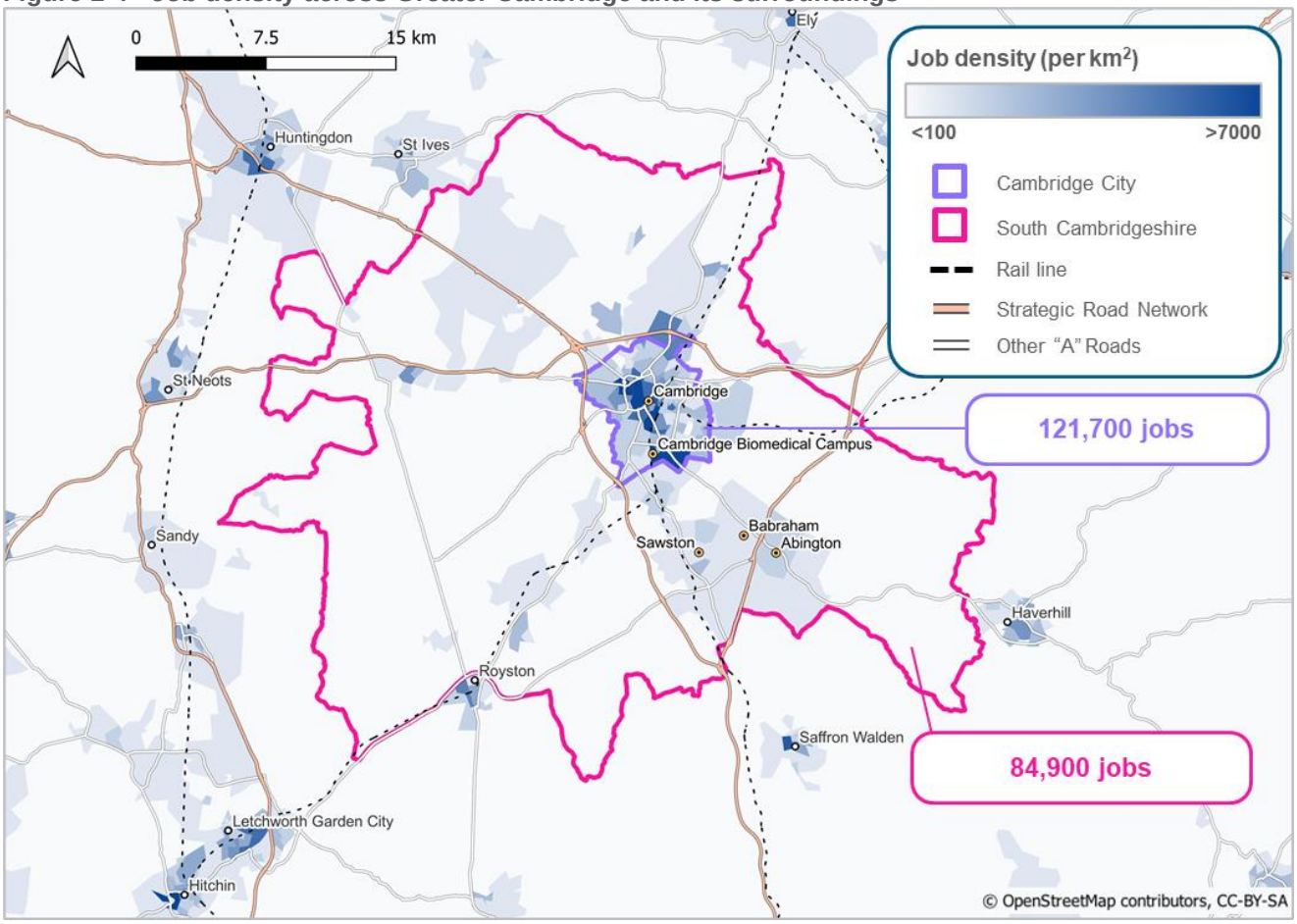


Table 1-8 outlines the last employment sectors within Greater Cambridge, all of which are knowledge-intensive industries which generate high values for the city region's economy and prosperity for its residents. These industries are also dominated by Greater Cambridge within the region. In Cambridgeshire, four out of every five jobs in these sectors are located in Greater Cambridge, with the exception of Health.

These are also growth sectors which are capable of delivering long-term sustained economic growth to the city region and the UK, once again highlighting the strategic role Great Cambridge plays in the development of the national economy.

Table 1-8 - Common industry groups across Greater Cambridge[24]

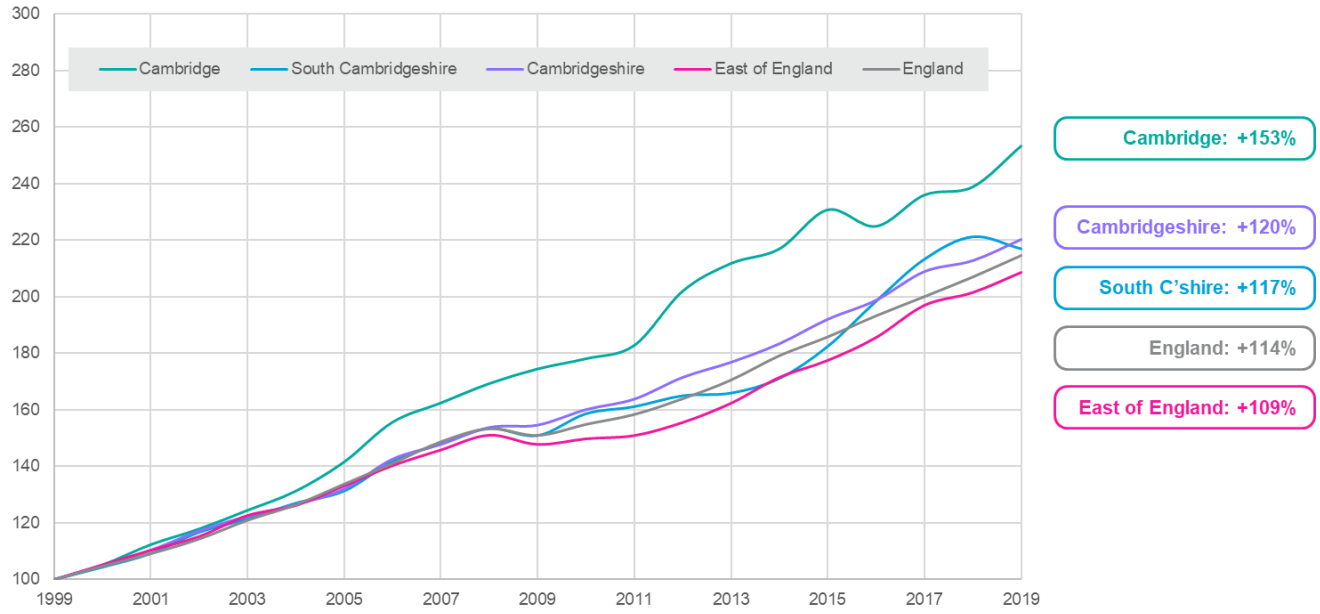
Rank	Cambridge		South Cambridgeshire		Greater Cambridge	
1	Education	29%	Professional, scientific & technical	24%	Education	20%
2	Health	16%	Manufacturing	12%	Professional, scientific & technical	19%

[23] Office for National Statistics – Business Register and Employment Survey 2020 (Broad Industrial Groups Employee Counts)
[24] Office for National Statistics – Business Register and Employment Survey (Broad Industrial Groups Employee Counts)

3	Professional, scientific & technical	15%	Information & communication	10%	Health	13%

The growing presence of high-tech industries and strong business creation have led to a sustained period of economic success in Greater Cambridge. As illustrated in over the last two decades, the growth of the city region's economy has outpaced both that of Cambridgeshire, East of England and England as a whole[25]. This is disproportionately driven by the growth in Cambridge City, where many of the larger businesses have established operations.

Figure 1-5 - Gross Value Added (GVA) in current prices – Index 1999 = 100 (1999 to 2019)[26]



Economy, industries and business – key points

- Cambridge is renowned for being a world-leading centre for research, innovation and technology. The Cambridge Biomedical Campus and other institutions in the city's south east makes Cambridge the heart of Britain's life-sciences industry. The industry has undergone incredible growth in the UK over the past decade and will play a nationally strategic role going forward in reviving Britain's currently sagging economy.
- Driven disproportionately by the booming economy in Cambridge City, the city region has experienced faster growth than the county, regional and national averages over the past 20 years.
- Anchored by the high-tech sectors and fuelled by strong businesses creation, Greater Cambridge now hosts about 60% (206,600) of total jobs in Cambridgeshire despite only taking about a quarter of its land area. The city region provides employment opportunities for an area extending far beyond its boundary.

1.5.2.3. Skills and employments

Accompanying and supporting its booming knowledge-intensive economy, Greater Cambridge also has a highly educated workforce. According to the Census, 44% of all residents in Greater Cambridge hold a level 4 qualification or above, significantly above the average in Cambridgeshire (33%), East of England (26%) and England (27%)[27].

[25] Office for National Statistics – Annual Subnational Gross Value Added (GVA) by MSOA
[26] Ibid.
[27] Census 2011 - Highest level of qualification

Greater Cambridge residents tend to work in occupations requiring high level of knowledge and skills, due to their higher education level. Combined with a high economic activity rate, resident prosperity across Greater Cambridge is higher than the county, regional and national averages, as shown by Table 1-9.

These measures also help to inform the employment dynamic within Greater Cambridge itself. Residents in South Cambridgeshire are more economically active but less skilled and prosperous compared to their counterparts in Cambridge City. In a local sense, measures should be considered and prioritised to improve their access to more highly paid and highly skilled employment opportunities.

Table 1-9 - Employment, economic activity and prosperity measures

Measures	Cambridge	South Cambridgeshire	Cambridgeshire CC	East of England	England
Employment by Standard Occupation Classification (SOC) Major Group 1-3[28]	70%	64%	53%	48%	50%
Economic activity rate (Aged 16-64)[29]	83%	87%	83%	81%	79%
GVA per head (2021)[30]	£51,241	£33,534	£32,009	£26,995	£31,138

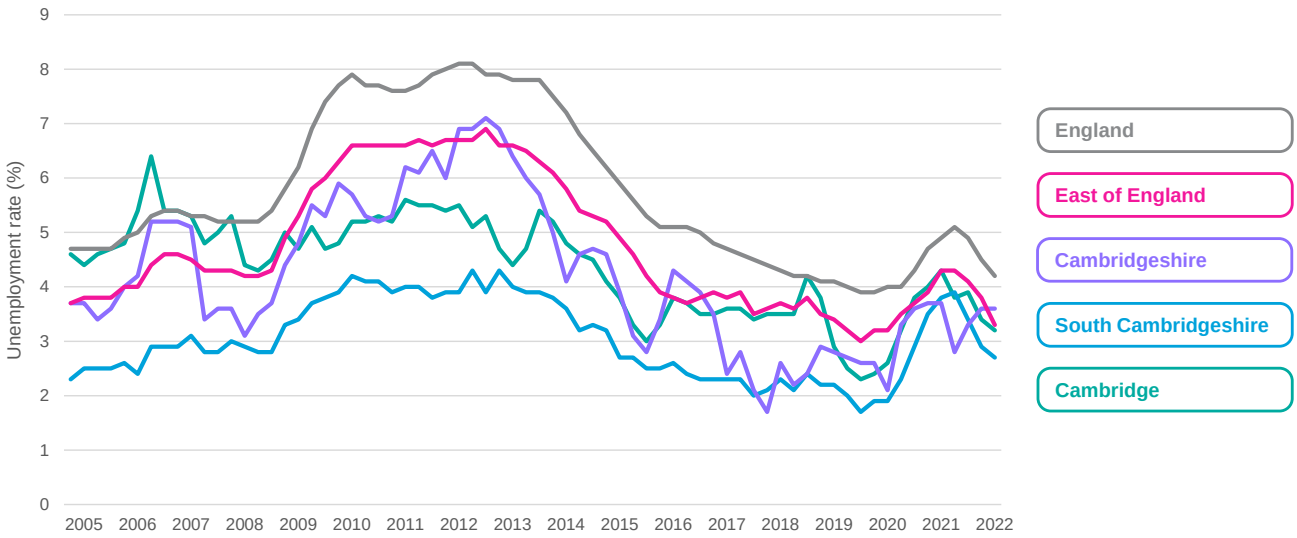
Figure 1-6 shows 12 months rolling unemployment rates among people aged 16 and above from 2005 to 2022. It suggests that despite the Global Financial Crisis of 2008, unemployment rate across Greater Cambridge has largely been below 5% since the mid-2000s, lower than the regional and national averages. South Cambridgeshire performed particularly strongly, with fewer than 2% of its adult population not in employment in 2019.

However, the COVID-19 pandemic has brought major challenges to the employment market across the nation, which has affected certain industries more than others. One of the impacted sectors has been higher education, on which Cambridge City's employment market has a significant dependency upon. As of 2021, GDP for the education sector across Cambridge and Peterborough was recorded to be 5% lower compared to that in January 2020[31], according to the Office for Budget Responsibility (OBR).

Going forward, it is especially important for Greater Cambridge and Cambridgeshire to be better connected internally, so those whose employment have been negatively affected by the pandemic are able to access more job opportunities. This will accelerate the recovery of the local employment markets and ensure that people across the county are able to benefit from it.

[28] Office for National Statistics – Annual Population Survey: Occupation (SOC10) Major Group by Employment (Dec 2021)
[29] Office for National Statistics – Annual Population Survey (March 2022)
[30] Office for National Statistics – Regional gross value added (balanced) per head and income components
[31] Assessing the Impact of Covid 19 in Cambridgeshire & Peterborough (July 2021)

Figure 1-6 - 12 months rolling unemployment rates among people aged 16 and above (2005 – 2022)[32]



Skills and employments – key points

- Residents of Greater Cambridge are more well-educated, highly skilled, economically active and generate higher GVA per capita than the county, regional and national averages. This is likely the result of being able to access the booming local employment market in Cambridge City.
- Within Greater Cambridge, despite being more economically active, those living in South Cambridgeshire are relatively less skilled and prosperous. Measures should be considered and prioritised to improve their access to employment opportunities with higher pay and skills, which are likely in the city.
- Despite the Global Financial Crisis of 2008, unemployment rate across Greater Cambridge has largely been below 5% since the mid-2000s. However, the COVID-19 pandemic has brought major challenges to the employment market to the region as certain sectors such as higher education are more heavily affected. As a result, the employment rate in Cambridge has not recovered at the same rate as the regional and national averages. It is therefore crucial for Greater Cambridge and Cambridgeshire to be better connected internally to ensure those whose employment have been negatively affected by the pandemic are able to access more job opportunities.

1.5.3. Travel demand and pattern

1.5.3.1. Travel demand & commuter flows

Figure 1-7 illustrates the indicative nature of land use within Greater Cambridge and its surrounding areas. Blue zones have more residents than jobs and are therefore more residential. Orange zones host more jobs than residents, which are likely the destinations of commuting trips.

The western and southern parts of Cambridge City's are where University of Cambridge, hospitals and multiple science parks (including CBC) are located and are therefore more commercial. Major employment hubs also exist elsewhere in Greater Cambridge, noticeably in the south-east and north-east of the city region.

[32] Office for National Statistics – Labour Force Survey: model-based unemployment data (Jan 2004 – March 2022)

Figure 1-7 - Land use (residential vs employment) in and around Greater Cambridge[33]

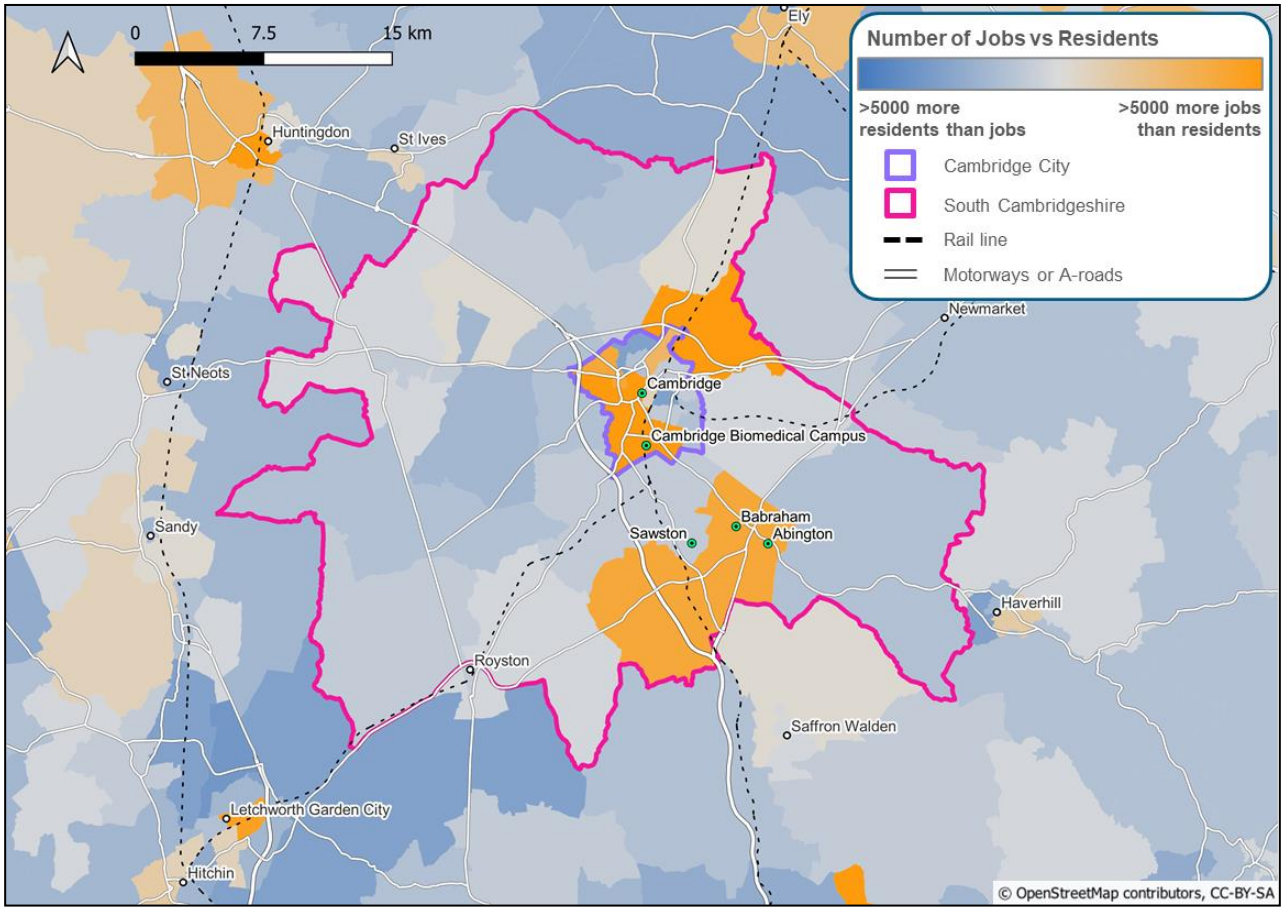
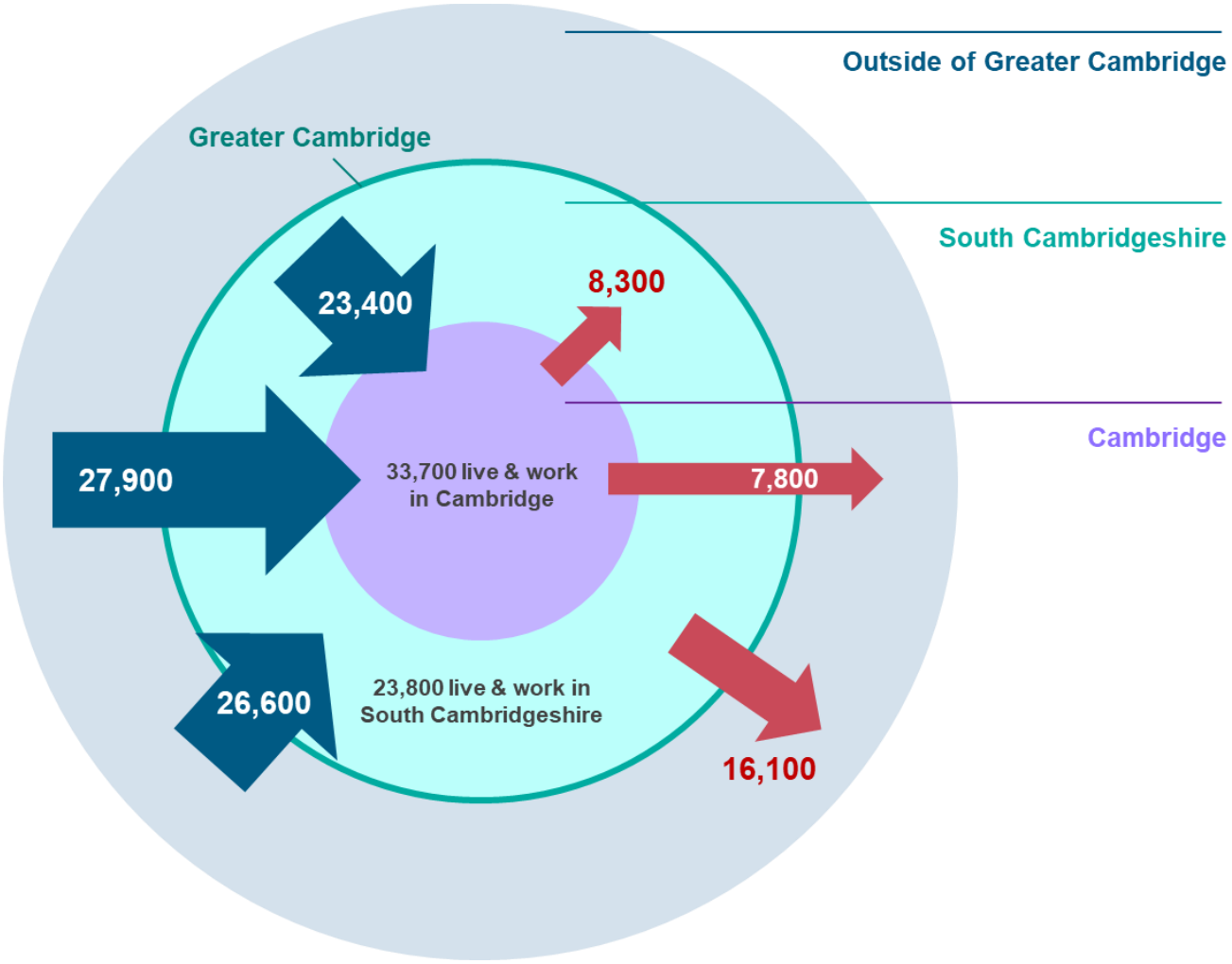


Figure 1-8 provides an overview of commuter flow to Greater Cambridge from outside and within the city region. With Cambridge being the economic and employment powerhouse within the region, the travel flow is largely radial in nature as more people choose to live in the surrounding areas and commute towards Cambridge and Greater Cambridge for employment.

[33] Census 2011 – Place of usual residence and place of work by MSOA

Figure 1-8 - Overview of commuter flow to and within Greater Cambridge[34]



To Greater Cambridge

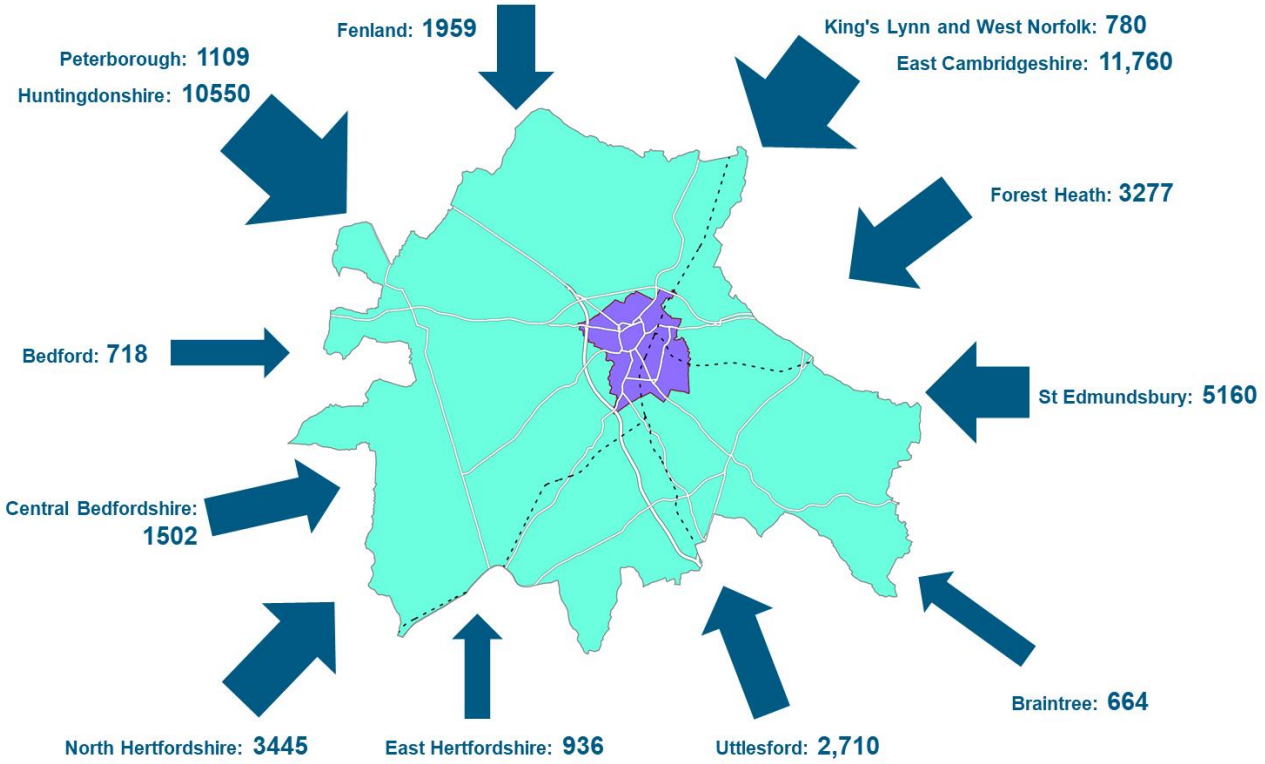
In total, approximately 54,500 people commuted to Greater Cambridge for work from outside of the city region, with slightly more than half of those working in Cambridge City. This makes Greater Cambridge a net importer for workers, as only about 23,900 Greater Cambridge residents leave the city region for work.

The arrows in Figure 1-9 show the popular highlights origin districts from which people commute into Greater Cambridge. The largest travel flows into the city region are from the north-west (mostly Huntingdonshire) and north-east (mostly East Cambridgeshire). There are also significantly inbound flows from the east (St Edmundsbury and Forest Heath, which now form one district of West Suffolk) and south-west (North Hertfordshire and Central Bedfordshire) and south (Uttlesford and East Hertfordshire).

While a significantly number of Greater Cambridge residents also travel the other way for work, none of these nearby districts attract a relatively larger inflow of workers from the Greater Cambridge region than conversely. Locations that match such descriptions are almost exclusively in London, which is not surprising given its economic significance.

[34] Census 2011 – Place of usual residence and place of work by district

Figure 1-9 - Inbound commuter flow (>500) to Greater Cambridge[35]



To employment centres within Greater Cambridge

Within Greater Cambridge, Cambridge City is the clear economic and employment centre, which is evident as:

- More than half of the people commuting to Greater Cambridge from outside of the city region work in Cambridge City; and
- More than 23,000 South Cambridgeshire residents commute inward for work in Cambridge City.

Overall, more than 50,000 people travel to Cambridge for work, showing the popularity of the city as an employment hub while also placing significant pressure on the transport network within Greater Cambridge.

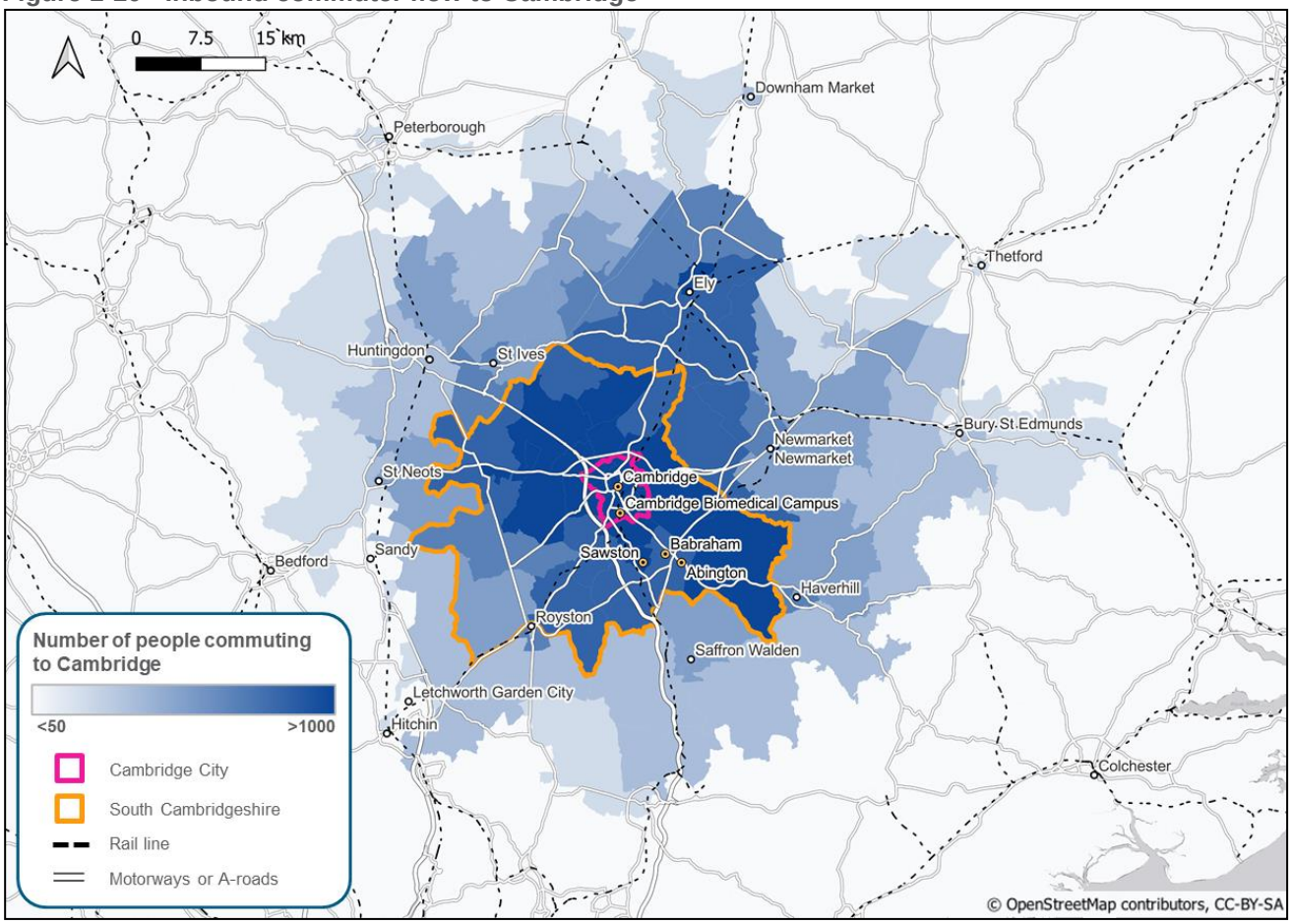
Figure 1-10 shows the attractiveness and the important role Cambridge plays as an employment hub in the region, as workers commute to the city from all directions. The distances of commute are also significant for many, as a large number of people travel more than 10 miles from towns outside of Greater Cambridge, including Haverhill, Saffron Walden, Royston, St Neots, St Ives, Ely and Newmarket.

As the result of high-quality public transport connections, the catchment area of Cambridge as an employment destination extends further to the east, north and north-west than other directions. Despite being more than 25 miles away, many people commute to Cambridge from Bury St Edmunds, Newmarket Market and Peterborough, all of which are linked with the city by rail.

From within Greater Cambridge, major city-bound demand can be observed in all directions, especially from the south-east and north-west of the city region.

[35] Census 2011 – Place of usual residence and place of work by district

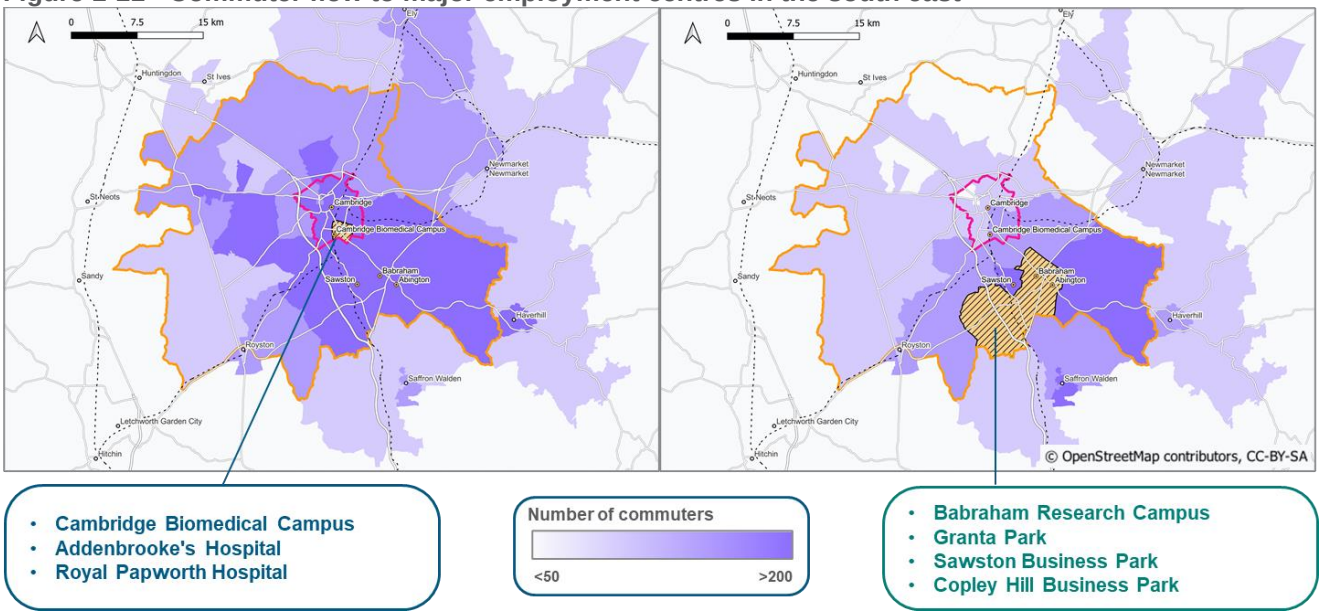
Figure 1-10 - Inbound commuter flow to Cambridge



As Figure 1-7 demonstrates, the presence of CBC and hospitals makes the south-eastern edge of Cambridge one of the city's main employment hubs. There is also a concentration of employment clusters further out towards the boundary of Greater Cambridge, including Babraham Research Campus, Grate Park, Sawston Business Park and Copley Hill Business Park.

Figure 1-11 demonstrates the considerable travel demand into these growing employment hubs, especially from towns and suburbs, in the south-east of Cambridge.

Figure 1-11 - Commuter flow to major employment centres in the south east



Travel demand & commuter flows – key points

- The western and southern parts of Cambridge City are where University of Cambridge, hospitals and multiple science parks are located, and are therefore more commercial. Major employment hubs also exist elsewhere in Greater Cambridge, noticeably in the south-east and north-east of the city region.
- With Cambridge being the economic and employment powerhouse within the region, the travel flow is largely radial in nature as more people choose to live in the surrounding areas and commute towards Cambridge and Greater Cambridge for employment.
- As the result of high-quality public transport connections, the catchment area of Cambridge as an employment destination extends further to the east, north and north-west than other directions. Despite being more than 25 miles away, many people commute to Cambridge from Bury St Edmunds, Newmarket Market and Peterborough, all of which are linked with the city by rail.
- There are also considerable travel demands into the growing employment hubs in the city region's south-east, especially from towns and suburbs south-east of Cambridge.

1.5.3.2. Car ownership

Car ownership is influenced by factors such as household income, size, composition as well as the proximity of jobs and public transport provision at the location where the household resides. Table 1-10 provides the key car ownership measures within Great Cambridge. Although car ownership level in Greater Cambridge as a whole (including both Cambridge City and South Cambridgeshire) is in line with the regional and national averages, the distribution is considerably different across its two districts.

As a key hub for employment and public transport, Cambridge is a city with low car ownership. With the city, fewer household own cars and those who do, own fewer vehicles on average, whilst in South Cambridgeshire, the level of car ownership is higher than both the regional and national average.

Table 1-10 - Key car ownership measures

Measures	Cambridge	South Cambridgeshire	Greater Cambridge	East of England	England
Average number of vehicles per household	0.91	1.55	1.27	1.33	1.16
% household with no vehicle	34%	11%	21%	19%	26%

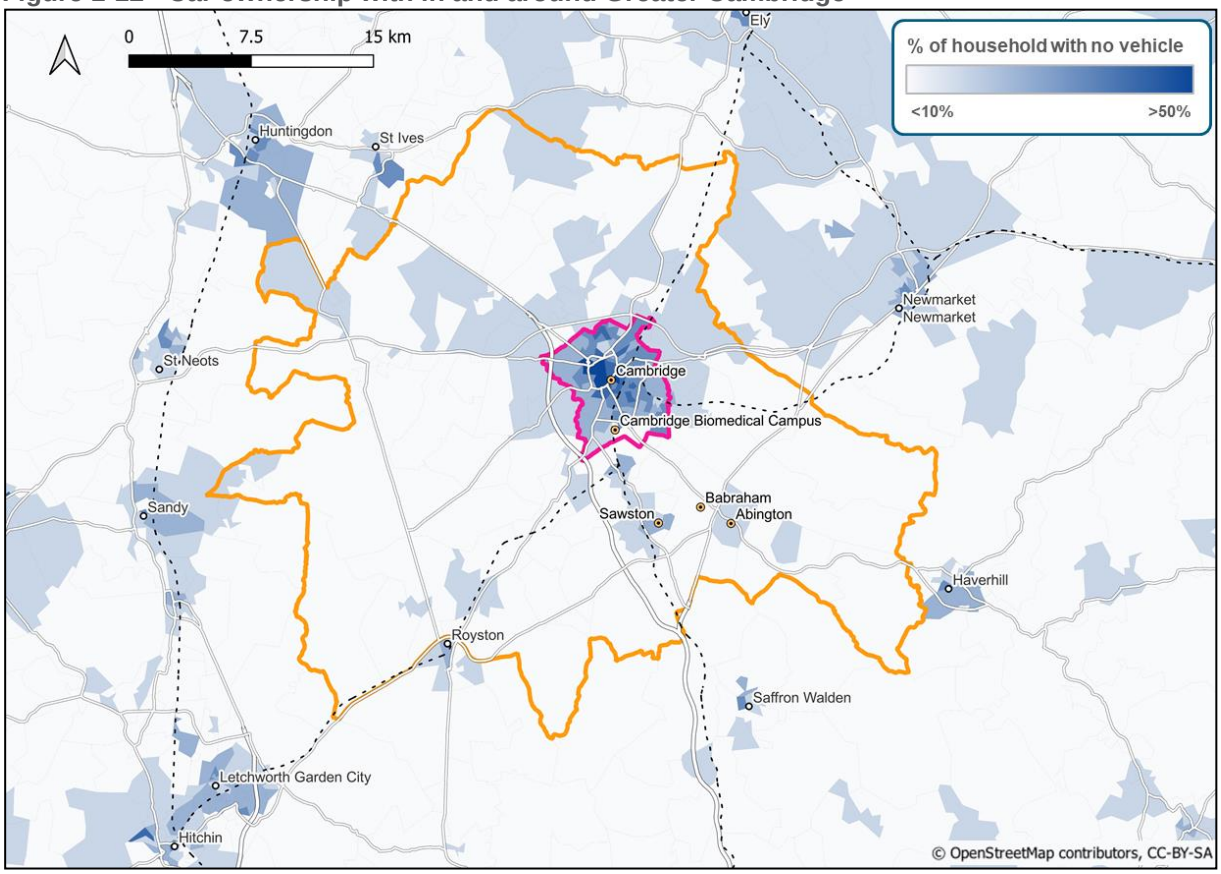
% household with no more than 1 vehicle	80%	51%	54%	61%	68%

Source: Census 2011

Figure 1-12 maps the percentage of household with no vehicle, across Greater Cambridge and its surrounding areas. The key observations are:

- Cambridge City stands out as an area with low car ownership, which is expected given the high population density and the number of job opportunities accessible locally without needing a car.
- Across South Cambridgeshire, car ownership is visibly higher in the western and south-eastern parts of the city region, which are not services by either rail or bus with dedicated bus lanes.
- Many towns outside of Greater Cambridge exhibit relatively low car ownership in the town centre, making the provision of public transport especially important for their residents. While most of these settlements are connected to Cambridge either by rail or the Cambridgeshire Guided Busway, towns in the south east are not, including Haverhill and Saffron Walden.

Figure 1-12 - Car ownership with in and around Greater Cambridge



Car ownership – key points

- Cambridge City stands out as an area with low car ownership in the region.
- Across South Cambridgeshire, car ownership is visibly higher in the western and south-eastern parts of the city region, which are not services by either rail or bus with dedicated bus lanes.
- Many towns outside of Greater Cambridge exhibit relatively low car ownership in the town centre, making the provision of public transport especially important for their residents.

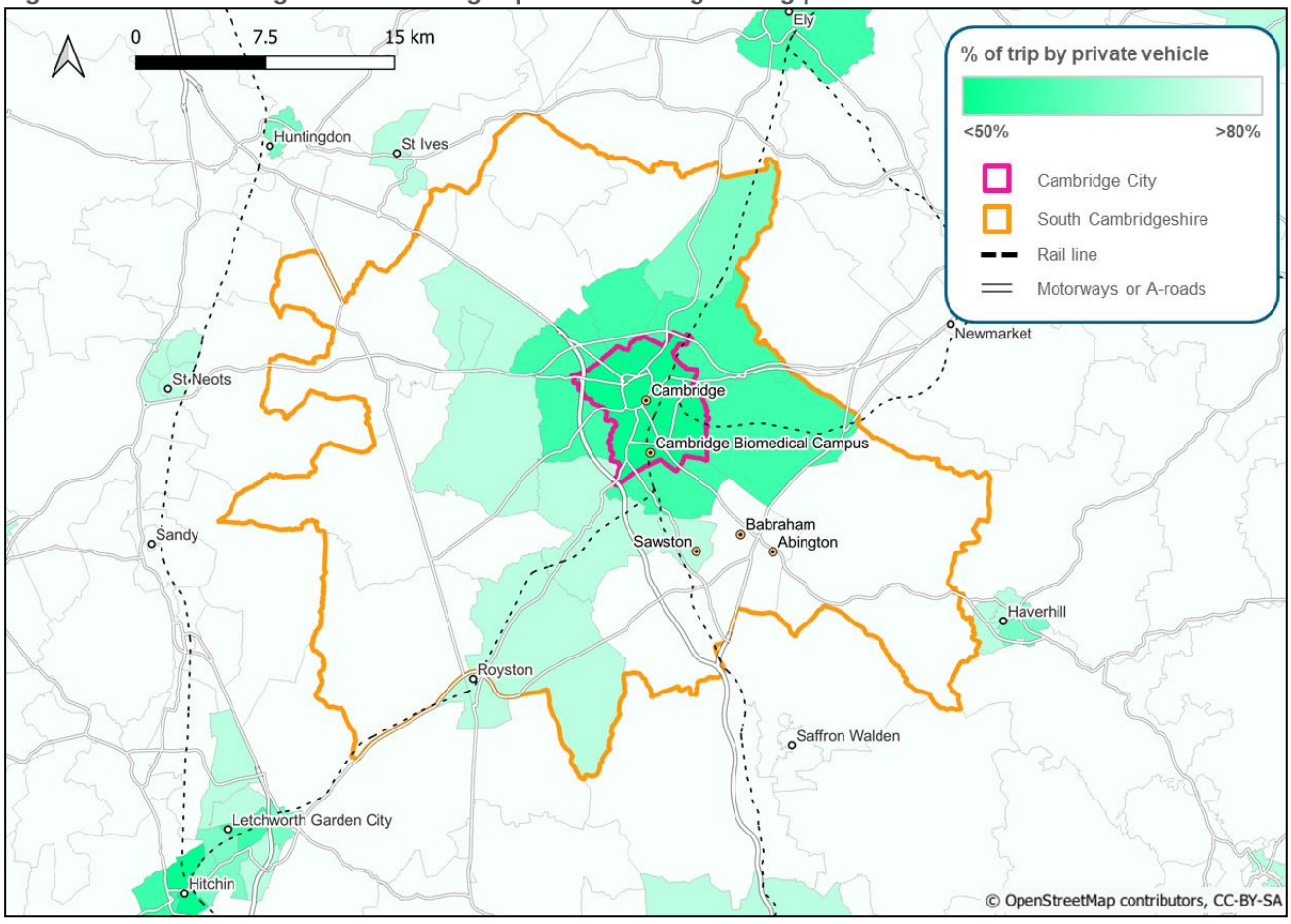
1.5.3.3. Travel behaviour

Like the level of car ownership, commuters' chosen method of travelling to work is also heavily influenced by the proximity to jobs and public transport provision at the location where they live. Figure 1-13 shows the percentage of car trips to Cambridge City in its surround area, with green highlighting the zones whose residents are less reliant on private vehicles as their method of accessing the employment centres within the city.

The key findings are:

- Residents of Cambridge city are not reliant on cars to access their places of work in the city.
- Within Greater Cambridge, private vehicle modes are still popular among residents of the south-eastern and south-western parts, as well as the western and north edges of the city region.
- Outside of Greater Cambridge, residents are less likely to choose driving as their mode of commute to Cambridge if the city can be accessed by public transport such as rail or the Guided Busway.

Figure 1-13 - Percentage of commuting trips to Cambridge using private vehicle



Residents of different parts of Greater Cambridge demonstrate distinct travel behaviours when accessing the central city, as shown by Figure 1-14 and Table 1-11.

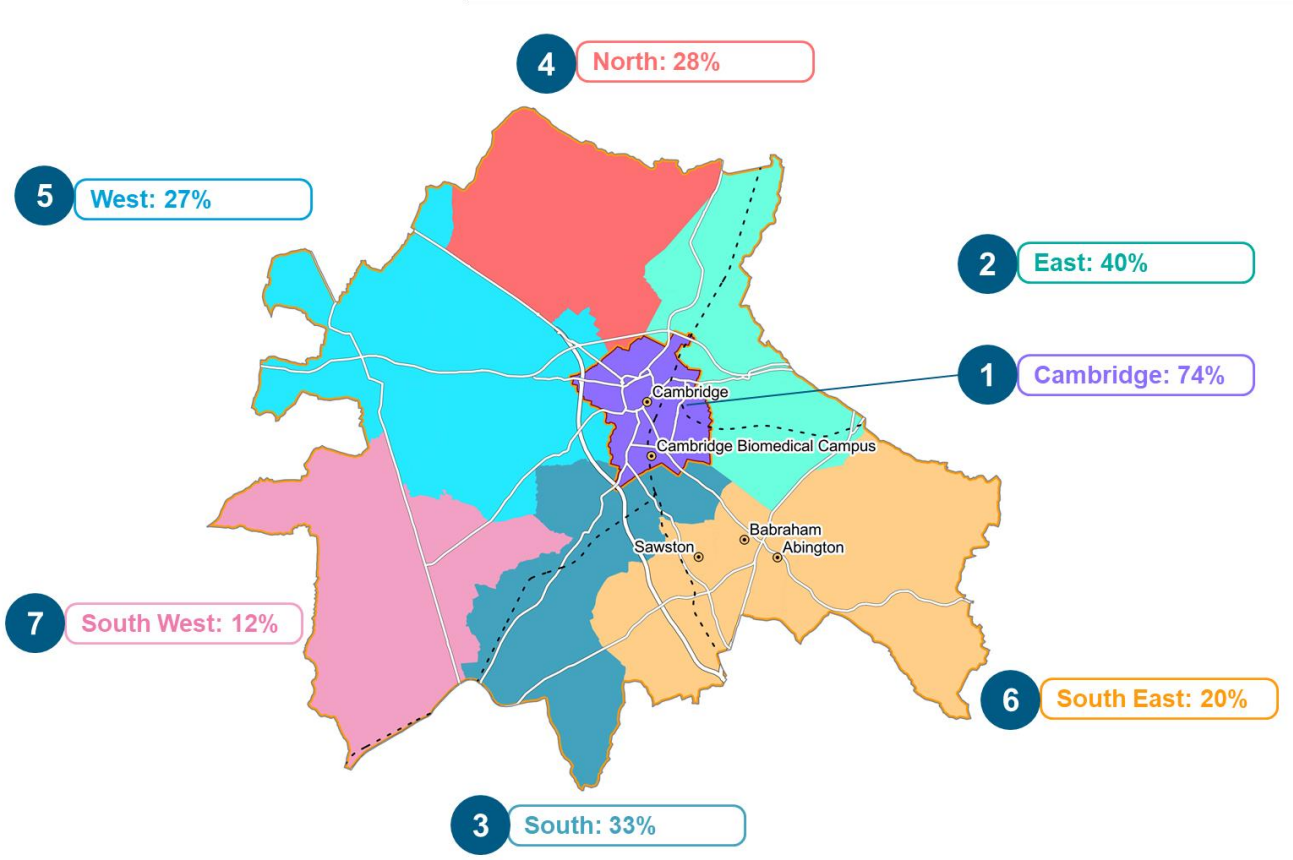
Given the proximity, almost two thirds of those living in central city commute by cycling or on foot, with only about a quarter driving to work. Active travel is also relatively popular for those travelling into the city, with the noticeable exceptions of the south-west and south-east. Public transport services (mostly buses) are used by a reasonable proportion of commuters from the east, north, west and south-east.

Residents in the south-west and south-east are the most reliant on private vehicle as their mode of commute to Cambridge City and the least likely to use public transport or active travel, reflecting the current lack of high-quality public transport options or active travel infrastructure connecting them with the city centre.

Table 1-11 - Commuting trips to Cambridge - modes of access by zones

Zones	Bus	Rail	Active Travel	Vehicle-based
Central	8%	0%	66%	26%
East	13%	3%	24%	60%
North	11%	0%	17%	72%
West	13%	0%	14%	73%
South West	4%	3%	5%	88%
South	7%	5%	20%	67%
South East	12%	2%	7%	80%

Figure 1-14 - Percentage of commuting trips to Cambridge done by public transport or active travel



Travel behaviour – key points

- Residents of different parts of Greater Cambridge demonstrate distinct travel behaviours when accessing the central city.
- Out of seven different parts of Greater Cambridge, residents in the south east are the second most reliant on private vehicle as their mode of commute to Cambridge City, reflecting the current lack of high-quality public transport options or active travel infrastructure connecting them with the city centre.

1.5.4. Highway network

As mentioned in the previous Section 1.5.3, a large majority of commuters into and within Cambridge from the south-east opt for private car travel. As a result, high volumes of traffic use the A1307 and A1301. The focus of this study is on the A1307 along which the CBC, Babraham Research Park and Granta Park are located, as shown in Figure 1-15.

Figure 1-15 - Highway Network in South East of Greater Cambridge

The A1307 is a secondary class and a key radial route connecting the centre of Cambridge with towns to its south east, including Haverhill, a regional centre and Linton, a significant dormitory village. Outside of the centre of Cambridge, the route is predominately rural and consists of a mixture of single lane and dual carriageways with varying speed limits throughout. The geographical scope of the A1307 corridor in its entirety is illustrated below in Figure 10.1. The extent of the Phase 2 works stretches from the A11/A1307/A505 junction north-west to the CBC at Francis Crick Avenue.

The next three sub-sections discuss the safety issues, traffic volume and delay along the A1307. The traffic volume section has been referred to the OBC 2020, while the section on safety issues, delays and congestion have been updates with the latest data.

1.5.4.1. Safety

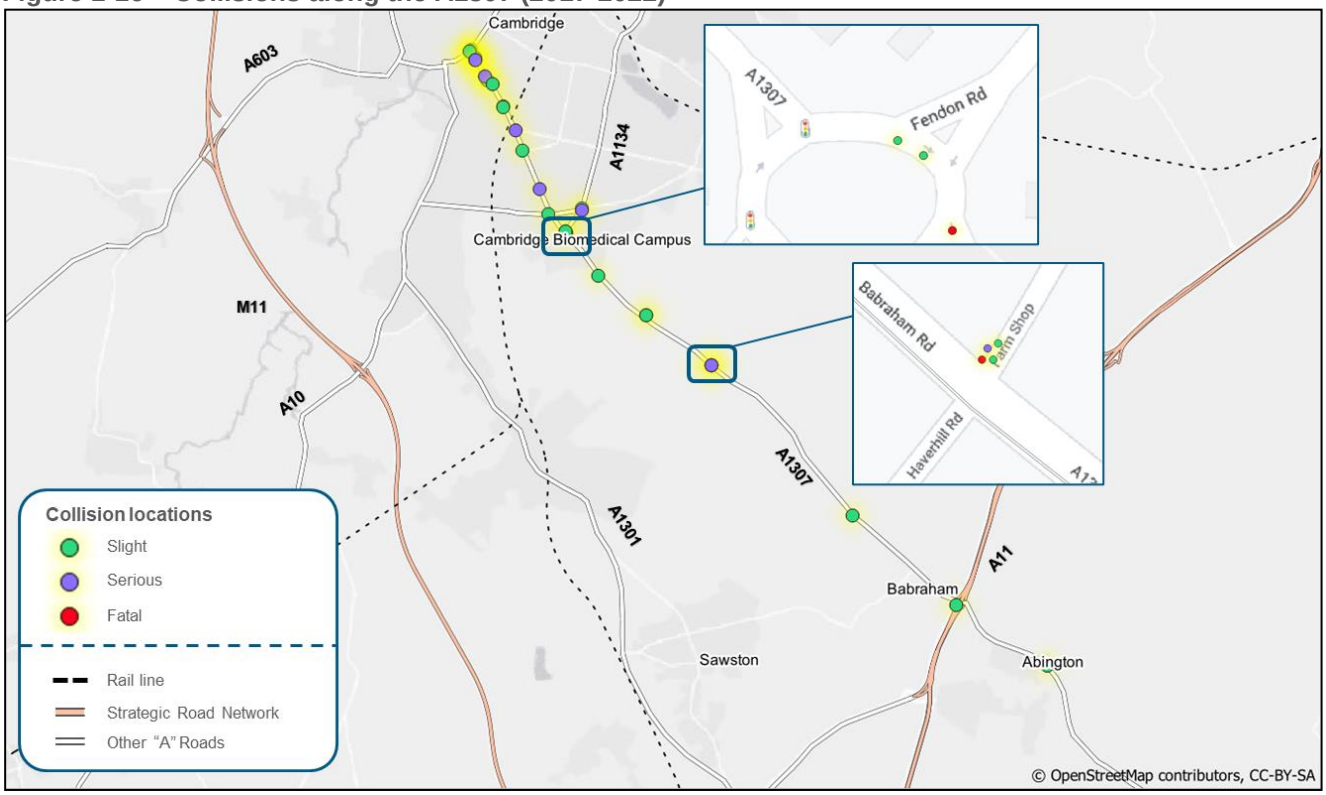
The high volumes of vehicles using the A1307 can lead to safety concerns for all road users, while also contributing to the perception that the route is not safe for pedestrians and cyclists.

A safety analysis has been undertaken based on STATS19 data recorded by the Police and cleansed and tabulated by the DfT, covering a six-year period between 2017 and 2022.

STATS19 and CrashMap provides data on injury collisions only, therefore damage collisions have not been reviewed as part of the analysis. General assumptions regarding collision contributory factors have been made based on the traffic flows, traffic speeds and the highway layout associated with the A1307 route.

A total of 33 personal injury collisions were recorded for the A1307 between Cambridge city centre and the A1307/A11 junction for the six-year analysis period. Figure 1-16 illustrates the locations of the recorded collisions for the full extent of the study area.

Figure 1-16 – Collisions along the A1307 (2017-2022)[36]



Source: STATS19

Table 1-12 provides a breakdown of the collision locations along the route and details the severity of the collisions recorded. The collision data demonstrates that of the 33 collisions recorded for the six-year period 2017 – 2022, a total of 7 collisions are recorded as serious in severity and 24 collisions are recorded as slight in severity. There were two fatal collisions in the six years reported.

The number of collisions recorded by severity by year is illustrated in Table 1-13.

[36] DfT STATS19 Data.

Table 1-12 - Personal injury collisions by location and severity (2017-2022)

Locations along the A1307	Severity			
	Slight	Serious	Fatal	Total
Lensfield Rd (A603) intersection	4	1	-	5
Harvey Rd & Union Rd intersections	4	1	-	5
Norwich St – Queen Edith's Way section	7	4	-	11
Fendon Rd roundabout	2	-	1	3
Fendon Rd – Hinton Way section	1	-	-	1
Hinton Way roundabout	2	-	-	2
Haverhill Rd intersection	2	1	1	4
Haverhill Rd – A11 section	1	-	-	1
A11 intersection	1	-	-	1
Total collisions in 5-year period	**24**	**7**	**2**	**33**

Source: STATS19

Table 1-13 - Breakdown of personal injury collisions by year

Year	Number of slight collisions	Number of serious collisions	Number of fatal collisions	Total number of collisions	Proportion of Total (%)
2017	2	1	-	3	9%
2018	4	1	-	5	15%
2019	5	1	1	7	21%
2020	5	-	-	5	15%
2021	6	2	1	9	27%
2022	2	2	-	4	12%
Total	**24**	**7**	**2**	**33**	**100%**

Source: STATS19

Based on the records above, and for the purpose of this study, clusters have been identified as three or more collisions recorded within close proximity. Four such cluster collision sites have been identified:

- Lensfield Rd (A603) intersection – includes 1 serious collision
- Harvey Rd & Union Rd intersections – includes 1 serious collision
- Fendon Rd roundabout – includes 1 fatal collision
- Haverhill Rd intersection – includes 1 fatal collision and 1 serious collision

Although the collision descriptions for each of the collisions have not been interrogated, the locations of the collision clusters suggest that collisions may have occurred due to conflicting vehicle movements, high volume of traffic on the A1307 or at junctions that suffer from significant congestion.

It should be noted that improvements undertaken on A1307 as a part of CSET1 could resolve the conflicting vehicle movements, while the CSET2 could help reduce congestion on the corridor.

1.5.4.2. Traffic volume

The traffic volumes along the A1307 are detailed in the OBC 2020.

1.5.4.3. Congestion and delay

In addition to the high daily volume, as an important road providing vital connection to Cambridge's growing employment hubs, the A1307 corridor is used predominantly during peak periods when commuters typically

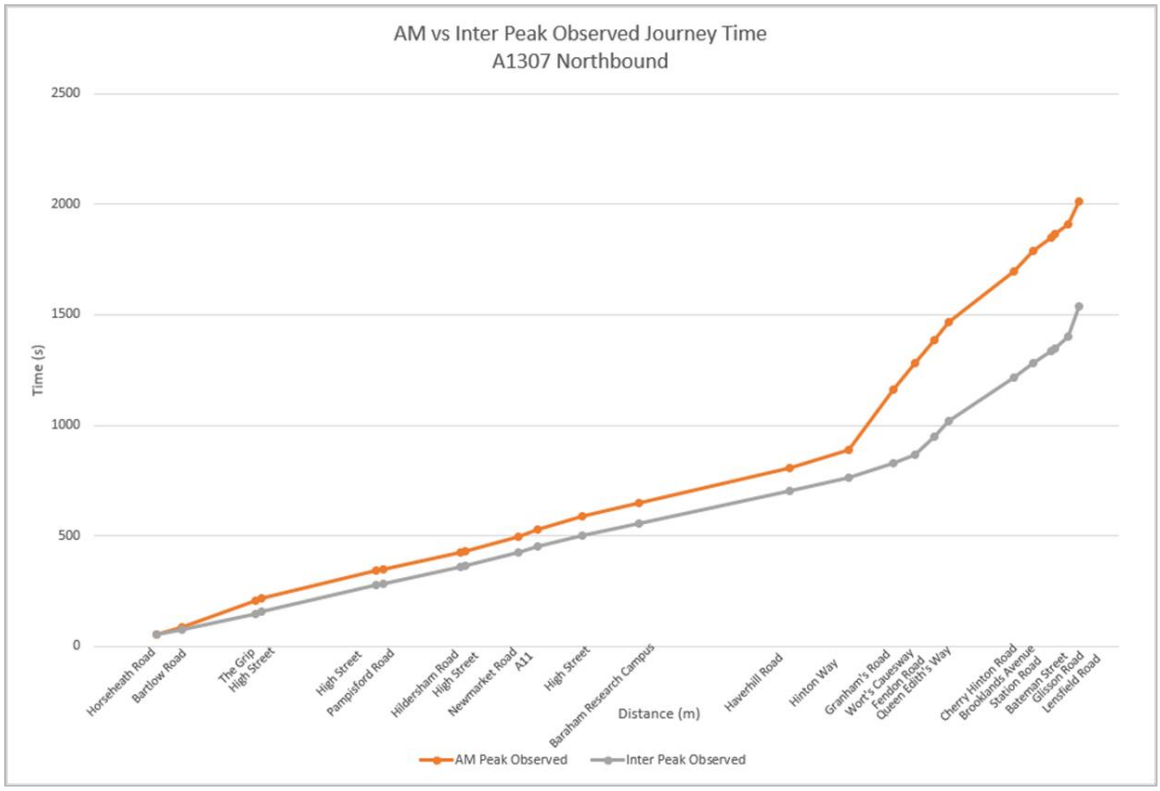
travel to and from work. Therefore, congestions and delays are expected along the corridor during peak periods when demand is the highest, which affects both private vehicle drivers and public transport users if bus and cars share the same lanes.

A traffic congestion and delay analysis has been conducted using TrafficMaster data collected on weekdays between April and November (except July and August) in 2019. July and August data are not used as they are the typical summer break periods for school and university in the UK, which would not adequately represent the true maximum delay given the prominence of the education sector in Cambridge.

The journey times during the morning (8-9 AM) and evening peak (5-6 PM) periods in their respective peak directions are compared to those of the inter periods and shown in Figure 1-17 and Figure 1-18. The key findings are:

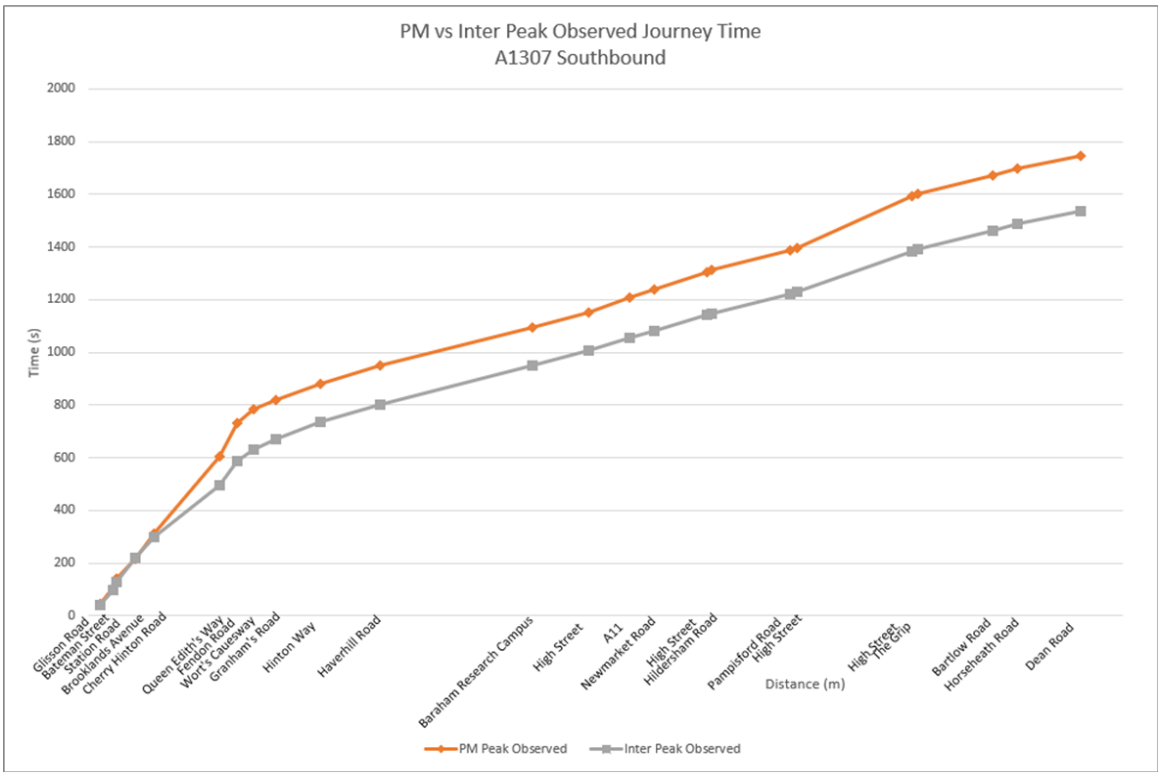
- In the morning peak, severe delay of the northbound traffic is not observed on the section of the A1307 between A11 and the Hinton Way roundabout. However, the entire section between Hinton Way and Cambridge city centre is highly congested, which is expected to result in about 7 minutes of delay.
- The 1.5 kms stretch between the Hinton Way roundabout and the CBC which usually takes about 3 minutes to drive during inter-peak would take more than 8 minutes during the morning peak.
- In the evening peak, major congestion can be expected for the southbound traffic between Cambridge city centre and Granham's Road, which is about 750 metres south of the Biomedical Campus. Drivers on average will take about 3.5 minutes longer to reach Granham's Road from the city centre, after which significant delays are not expected.

Figure 1-17 - Northbound journey time along the A1307 in AM peak (weekday 2019)[37]



[37] TrafficMaster Journey Time Data

Figure 1-18 - Northbound journey time along the A1307 in PM peak (weekday 2019)[38]



Highway – key points

- 52 personally injury collisions have been observed along the A1307 in the five years leading up to 2018, of which eight were serious. The locations of the collision cluster around junction intersections, suggesting that collisions may have occurred due to conflicting vehicle movements or at junctions that suffer from significant congestion. Improvements undertaken on A1307 as a part of CSET1 could resolve the conflicting vehicle movements, while the CSET2 could help reduce congestion on the corridor.
- The highest traffic counts along the A1307 are recorded just south of the Cambridge Biomedical Campus. The significantly lower traffic counts further into the city centre indicate the effectiveness of Babraham P&R as well the popularity of the Cambridge Biomedical Campus as an employment destination.
- Further out near Babraham Research Park, the traffic volume has increased considerably and has almost caught up to the same level at the CBC 3 years earlier.
- Between 8 and 9 AM, major delay of the northbound traffic has been observed for the entire section between Hinton Way and Cambridge city centre. The 1.5 kms stretch between the Hinton Way roundabout and the Cambridge Biomedical Campus which usually takes about 3 minutes to drive during inter-peak would take more than 8 minutes during the morning peak.
- In the evening peak, major congestions can be expected for the southbound traffic between Cambridge city centre and Granham's Road, which is about 750 metres south of the Biomedical Campus.

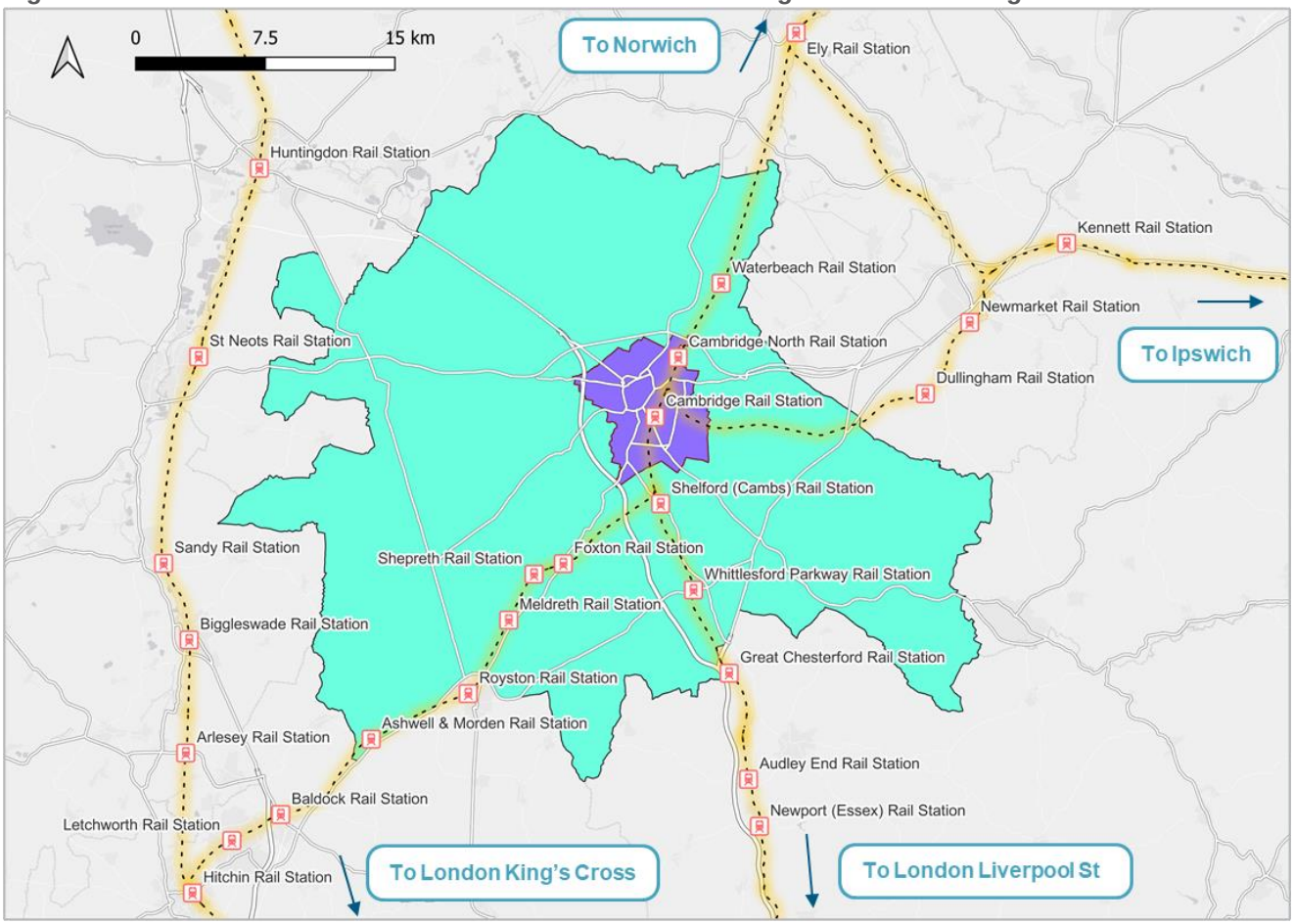
1.5.5. Rail services

Rail transport plays a critical role in modern mobility of people, goods and services from one place to another. Figure 1-19 maps the rail network and stations within Greater Cambridge and its surrounding areas.

The existing rail services and estimates of the usage based on Office of Rail and Road from the OBC 2020 is presented in this section.

[38] Ibid.

Figure 1-19 - Rail network and stations within Greater Cambridge and surrounding areas



Cambridge Rail Station is served by the Greater Anglia and Great Northern Train Operating Companies (TOC), that connects Cambridge with the rest of East Anglia and London. London routes are typically into either King's Cross or Liverpool Street stations, whilst regional destinations include Ipswich, Ely and Norwich. The CrossCountry Train Operating Companies also provides a service, which travels southeast to Stansted Airport and Northwest to Birmingham via Peterborough.

In summary, the rail network in the region provides efficient public transport connections to Cambridge City from the north, east, south and south-west. However, the network does not currently extend in the western or south-eastern direction. As a result, residents in the west and south-east do not have efficient rail access to the city, including those along the A1307 corridor. Whilst the delivery of East West Rail will address poor access from the west, there will still be a rail service gap in the south-east of Greater Cambridge and beyond.

Stations along the Cambridge to London Liverpool Street line are the closest to the towns along the A1307 and are more difficult to access for those further away from Cambridge. For example, Whittlesford Parkway Station is more than 4kms away from Babraham and The Abingtons, whilst Haverhill is about 17kms away from Great Chesterford Railway Station.

Rail has become an increasingly popular mode for people to access Cambridge City and its employment centres. There was a substantial growth in rail usage between 2011 and 2018 along the southern corridor, reflected by an increase in station patronage both at Cambridge and the stations south of Cambridge (shown in Table 1-14). However, given the poor rail access in the south-east of Greater Cambridge and beyond, the growing demand for efficient public transport along the A1307 corridor are likely not being met.

Table 1-14 - Estimates of Number of Passenger Entries and Exits based on Office of Rail and Road data

Station	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	6-year change
Cambridge	8,823,236	9,168,938	9,824,859	10,420,178	10,954,212	11,424,902	11,530,238	**+31%**
Shelford	145,900	154,060	152,976	159,920	174,920	182,138	204,618	**+40%**
Whittlesford Parkway	343,772	396,622	431,544	454,734,	493,004	509,744	538,972	**+56%**

Source: OBC 2020

Rail services – key points

- The rail network in the region provides efficient public transport connection to Cambridge City from the north, east, south and south-west. However, the network does not currently extend in the western or south-eastern direction. As a result, residents in the west and south-east do not have efficient rail access to the city, including those along the A1307 corridor.
- The substantial growth in rail patronage at Cambridge Rail Stations in recent years demonstrates increasing demand for rail travel in the region. This growing demand for efficient high-quality public transport services likely also exist in the south-east along the A1307 corridor but are not currently being met.

1.5.6. Bus services

The existing bus services in the area including the existing Busway network and Park & Ride facilities have been summarised from the OBC 2020. The performance of these bus services discussed later in this section are based on the latest 2019 data analysis undertaken by Atkins.

The bus network servicing Greater Cambridge and beyond is primarily composed of:

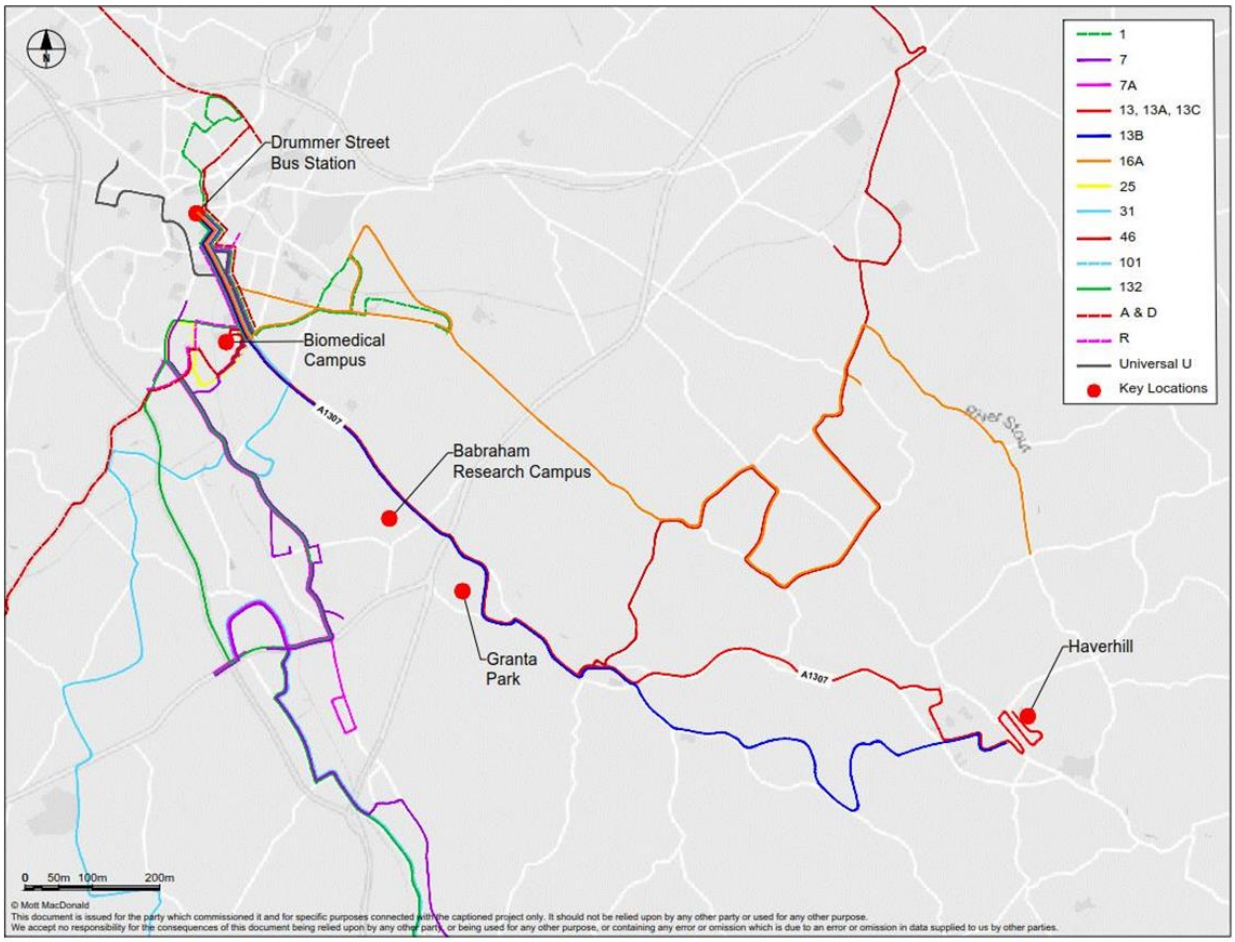
- A wide-reaching traditional bus network;
- Cambridgeshire's Guided Busway which is referred to simply as 'The Busway'; and
- Services connecting the city centre with various Park and Ride facilities.

Collectively three categories of services provide good bus coverage across Greater Cambridge. Cambridge's bus station located on Drummer Street acts as a hub for bus activity with most buses to and from destinations outside the city starting and terminating at this interchange or adjacent on-street bus stops.

There are also privately operated bus services by employers in the area.

1.5.6.1. Regular bus services

Figure 1-20 - Bus routes within the study area



Source: OBC 2020

Figure 1-20 displays the bus routes within Great Cambridge which either run along the A1307, run parallel to the A1307 or intercept with the A1307. The details of the regular bus services are provided in Table 1-15.

Table 1-15 - Regular bus services on A1307 and A1301

Routes	Main Stops	Cambridge-bound services frequency on weekdays	
		AM Peak	Non-Peak
13	• Haverhill • Linton • The Abingtons • Addenbrooke's Hospital • Cambridge	1 per hour	
13A		1 per hour	
13C		1 service in AM peak	-
13B		1 service in AM peak	-
X13		4 services in the AM peak Approximately 2 per hour	-
13 service group		**Up to 6 per hour**	**2 per hour**
7	• Saffron Waldon • Pampisford • Sawston • Stapleford • Shelford • Trumpington	**2 per hour** (1 per hour from Saffron Walden + 1 per hour from Pampisford)	

	• Addenbrooke's Hospital • Cambridge	

The Stagecoach 13 service group is comprised of five separate services, which travel along the A1307 corridor though with slight variations in route alignments and stopping patterns. When combined, the service group offers up to six services per hour in the morning peak providing access to Cambridge and CBC for residents of Haverhill, Linton and The Abingtons and Babraham.

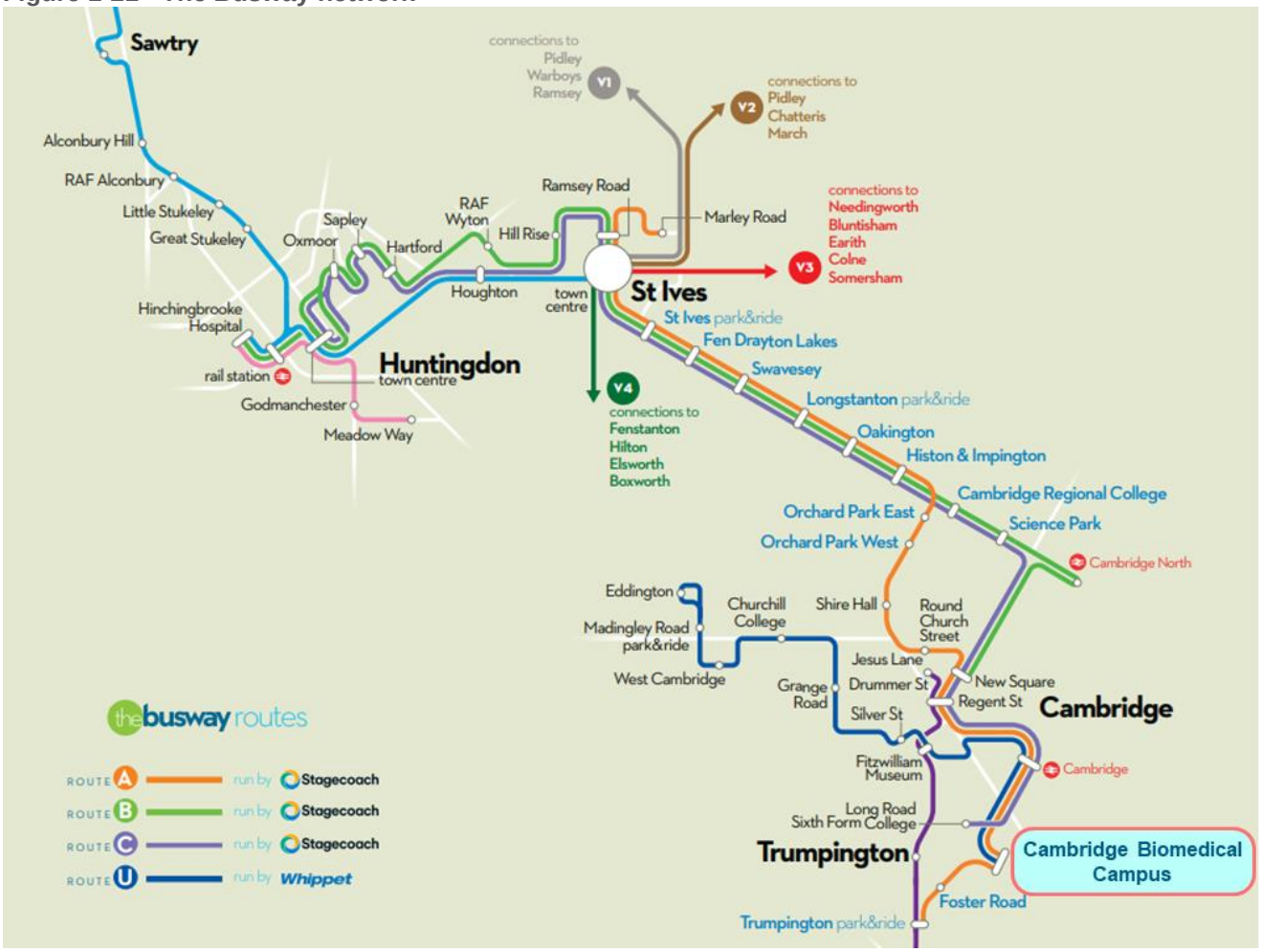
Stagecoach also runs a half-hourly service (Route 7) from Saffron Walden and Sawston/Pampisford in the south east to Cambridge via Stapleford, Shelford, Trumpington and CBC. This service mostly runs along the A1301 west of the A1307, before joining the A1307 via Addenbrooke's Road / Dame Mary Archer Way.

1.5.6.2. The Busway

Greater Cambridge is also served by the Busway, with three routes (A, B and C) connecting Huntingdon and St Ives to Cambridge as shown in Figure 1-21. One of the services (Route A) extends further towards the southern fringe of the city where the CBC is located. Route U provides an additional connection to the CBC from Eddington in west Cambridge, via Madingley Road P&R, University of Cambridge, Cambridge City Centre and Railway Station. The details of the Busway routes A and U are provided in Table 1-16.

These Busway services are expected to be more reliable than traditional buses as they run along routes with sections of guided operation, supplemented by bus-only roads and conventional bus lanes. However, the current services mainly serve the suburbs and towns to the city's north-west and do not extend any further south east beyond the CBC. There is therefore no busway connectivity between settlements and other employment hubs along the A1307 or A1301 corridors such as Great Shelford, Stapleford, Sawston, Babraham and its research campus, Granta Park, Linton and Haverhill.

Figure 1-21 - The Busway network



Source: OBC 2020

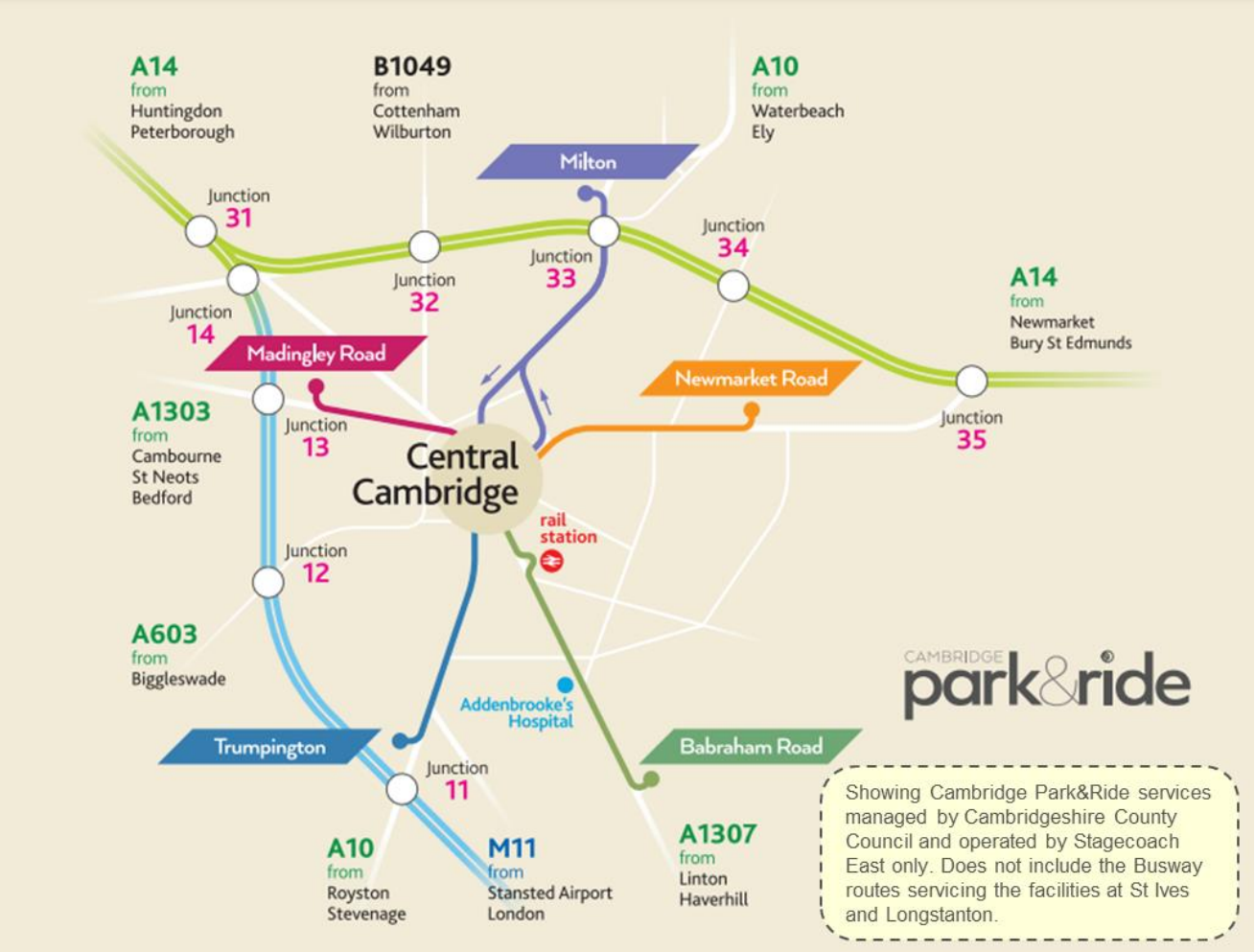
Table 1-16 - The Busway services connecting to CBC

Routes	Main Stops	Cambridge-bound services frequency on weekdays	
		AM Peak	Non-Peak
Busway A	• Cambridge Biomedical Campus • Cambridge Railway Station • Cambridge centre • Orchard Park • St Ives	20 minutes	
Busway U	• Cambridge Biomedical Campus • Cambridge Railway Station • Cambridge centre • University of Cambridge • West Cambridge • Madingley Road P&R • Eddington	15 minutes	

1.5.6.3. Existing Park & Ride bus services

To encourage a more efficient and sustainable mode to access Cambridge city centre and ease traffic congestion in the inner sections of the city, Cambridgeshire County Council has also set up five Park and Ride facilities near the city boundary. The locations of these five sites are illustrated in Figure 1-22.

Figure 1-22 - Park and Ride facilities in Cambridge



Source: Cambridge Park & Ride

Regular bus services (every 10-15 minutes) connect these P&R sites to the city centre and various employment hubs along the route. The Babraham Road P&R services the A1307 corridor as travellers from locations further out such as Babraham, Granta Park, Linton and Haverhill are able to drive along the 1307 and park at the site, before boarding bus services which departs every 12 minutes on workdays. Other key locations the Babraham Road P&R services provides connection to include CBC, Cambridge Railway Station and Cambridge Leisure Park.

1.5.6.4. Employer operated bus services

Granta Park, a business estate located south east of the A11/A1307 junction, operates 9 daily services[39] between 7:15 and 10:00, carrying commuters from Cambridge Train Station to Granta Park via the A1307 corridor, with stops at Marque Apartments and Addenbrookes' Hospital. 8 daily services operate in the reverse direction between 16:00 and 18:50 in the evening. Tickets for the Granta Park commuter bus cost £1.50 for a single journey.

1.5.6.5. Performances of key bus services

With journey time data collected by Open Data Service (BODS) between February and April 2019, a comprehensive analysis has been carried out to understand the performances of two key bus services relevant to the study area:

- Stagecoach East **Route 13** along the A1307 corridor

[39] Granta Park: Commuter Bus Timetable, available online: https://www.grantapark.co.uk/lib/uploads/2022/06/June-Rev-1.-Cambridge-Commuter-Bus-Timetable-2022-1.pdf

- Stagecoach East **Route 7** along the A1301 corridor

The analysis focuses on the journey time and variability of Cambridge-bound services in the morning peak period and non-peak period. It only considers data on weekdays during school and university semesters, which is expected to generate the highest possible travel demand in the morning peak and lead to the worst traffic congestions.

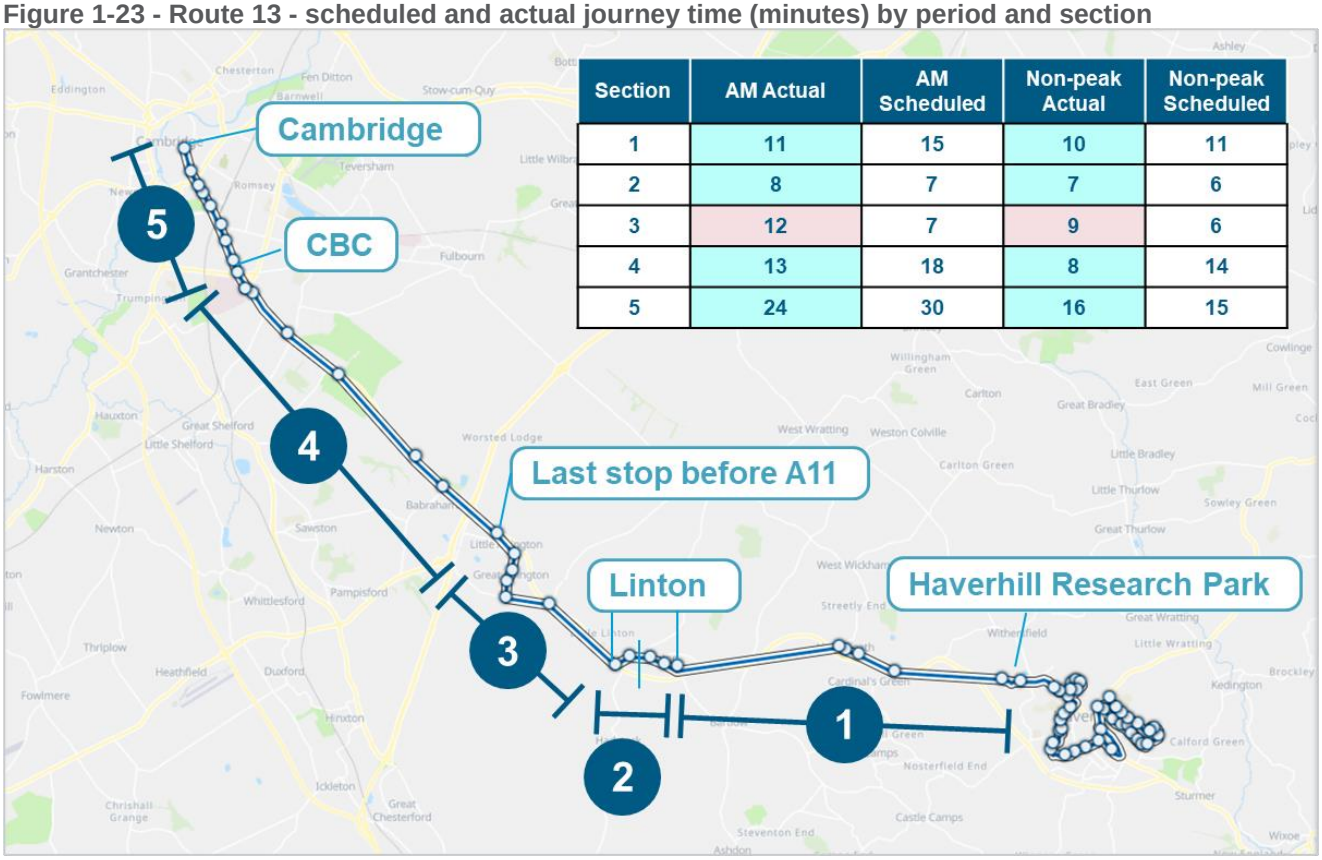
Route 13

The timetable scheduling of Route 13 has already taken into consideration the expected congestion along the A1307. For the service arriving in Cambridge Bus Station at 8:45, the Haverhill Research Park – Linton section is scheduled to take 15 minutes, 4 minutes longer than non-peak services. The A11 – CBC section is also expected to take 18 minutes during AM peak, 4 minutes longer. However, the most significant congestion-induced adjustment is between CBC and central Cambridge, which is expected to take half an hour to complete during the AM peak, doubling the scheduled time in non-congested conditions.

The key findings of the analysis are:

- **Timetable adherence**: As shown in Figure 1-23 and Figure 1-24 with the exception of the Linton – Little Abington section, Route 13 services on average adhere to schedules both during AM peak and non-peak periods.
- **Delay during AM peak**: Although Route services run reliably according to the schedules, it is worth noting that the timetable has already been adjusted to take into considerations the expected congestions along the A1307, especially in the inner sections. Figure 1-24 and Figure 1-25 demonstrate that journey time between 8 and 9 AM is longer than non-peak periods as the result of traffic congestions and delay along the A1307 in the AM peak, as previously discussed in Section 1.5.4. This variability by hour is not observed for the Busway A services, which largely run on dedicated lanes.

Figure 1-23 - Route 13 - scheduled and actual journey time (minutes) by period and section



Section	AM Actual	AM Scheduled	Non-peak Actual	Non-peak Scheduled
1	11	15	10	11
2	8	7	7	6
3	12	7	9	6
4	13	18	8	14
5	24	30	16	15

Figure 1-24 - Route 13 – scheduled and actual cumulative journey time

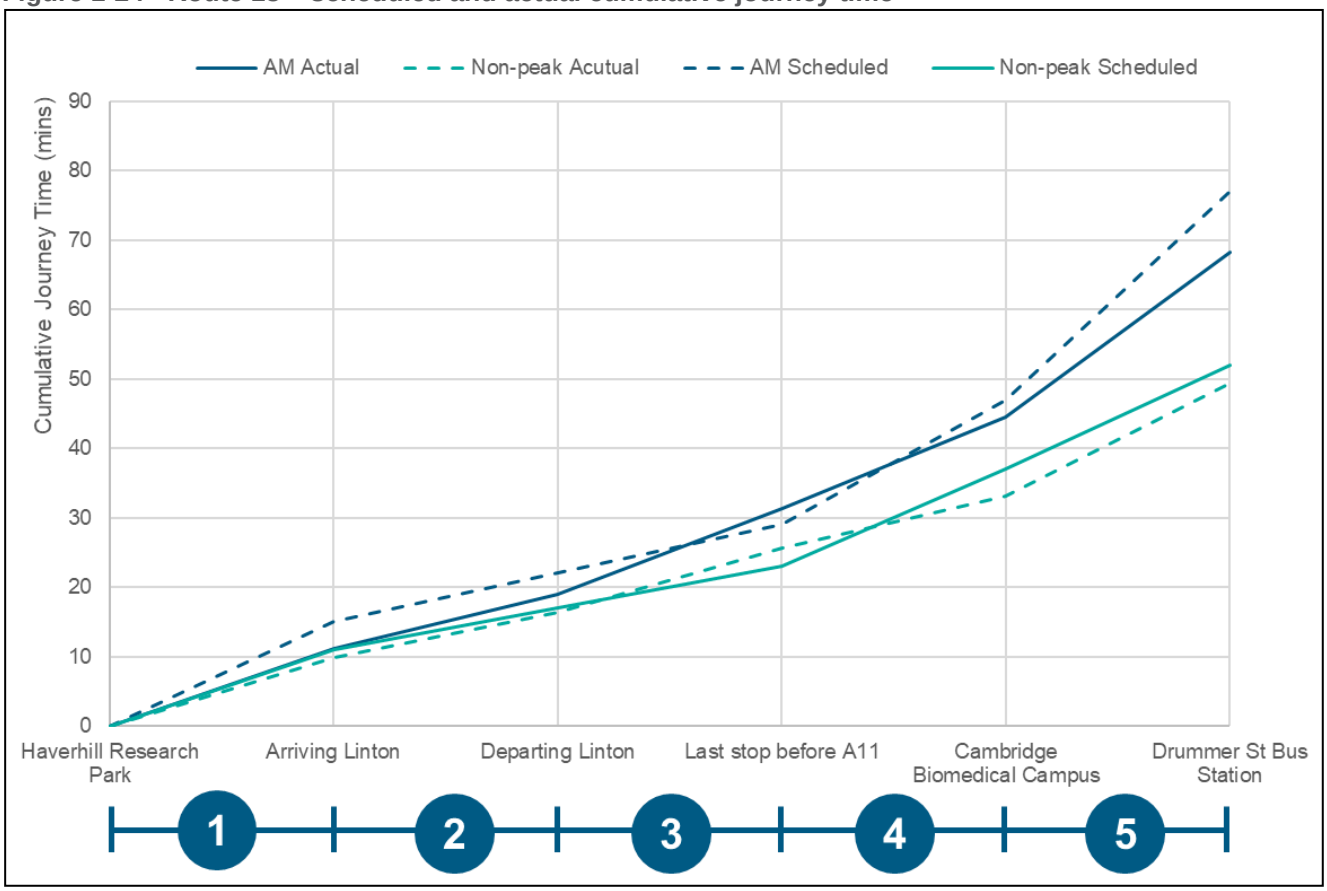
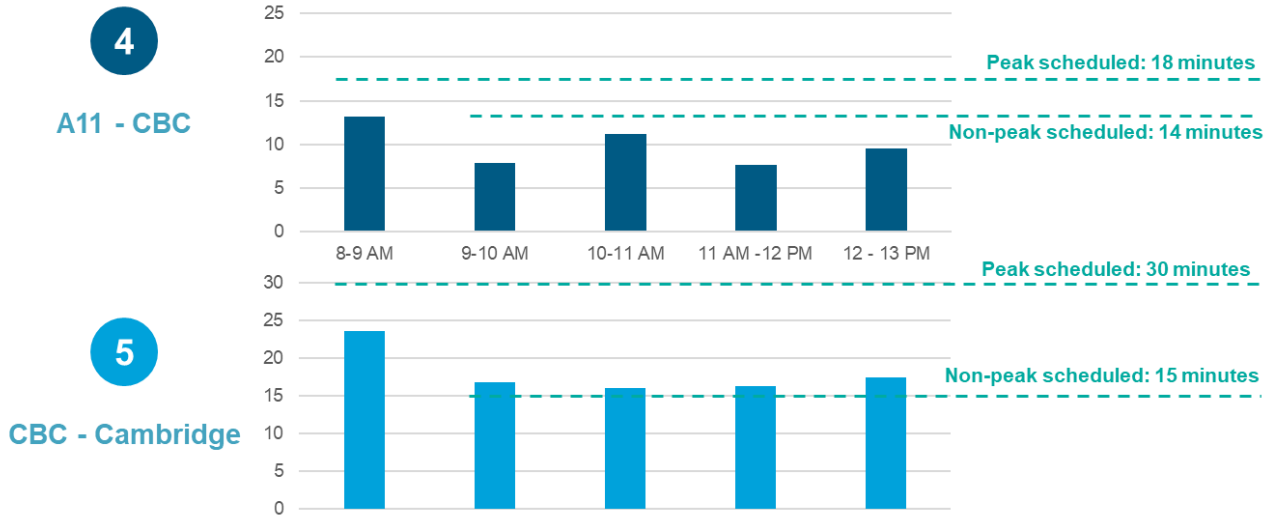


Figure 1-25 - Route 13 – journey time by hours (selected sections only)



Route 7

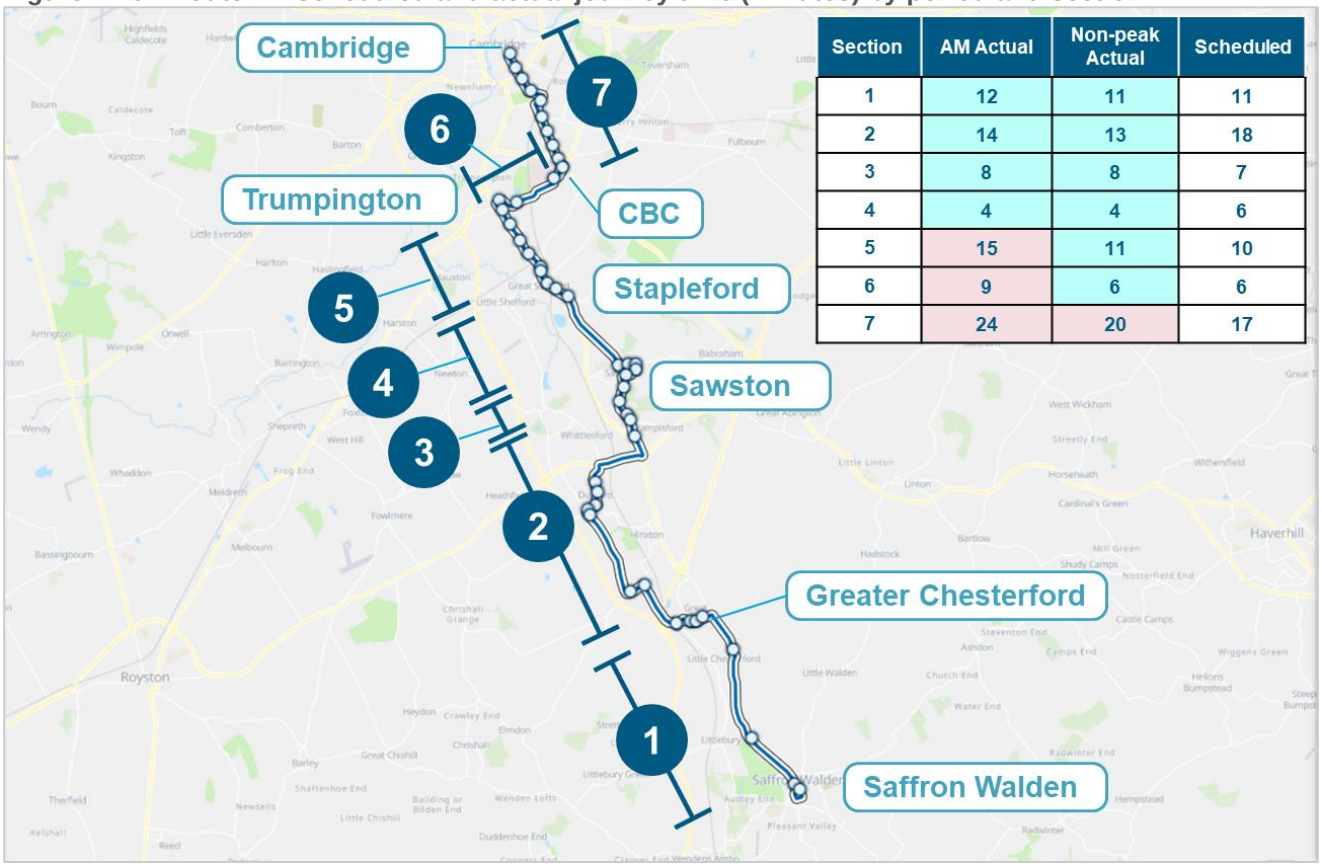
Unlike Route 13, the timetable scheduling of Route 7 does not include any provision for additional time in the peak periods. Services are scheduled to have the same journey time throughout the day. The key findings of the analysis are:

- **Timetable adherence**: As shown in Figure 1-26, the three inner sections (between Stapleford and Cambridge) each takes 50% longer to complete in the morning peak compared to the scheduled run time.

This suggests significant delays along the A1301 (north of Stapleford) and A1307 (between CBC and Cambridge centre). The schedule journey of the CBC – Cambridge section (17 minutes) are constantly being exceeded even during non-peak periods. This is likely a scheduling issue given the journey time of Route 7 in that section is comparable with that of Route 13.

- Shown by Figure 1-27, the overall timetable adherence is being achieved during non-peak period, while scheduled run time is on averaged being exceeded in the morning peak.
- **Delay during AM peak**: Figure 1-28 shows a spike in journey time in the three inner sections between 8 and 9 AM, which together contributes to a poor timetable adherence during the morning peak, as demonstrated by Figure 1-27Figure 1-27. Unlike the Busway A services which have little journey time variability by hour, Route 7 services are prone to on-road traffic congestions and delays as they largely do not operate on dedicated lanes.

Figure 1-26 - Route 7 – scheduled and actual journey time (minutes) by period and section



Section	AM Actual	Non-peak Actual	Scheduled
1	12	11	11
2	14	13	18
3	8	8	7
4	4	4	6
5	15	11	10
6	9	6	6
7	24	20	17

Figure 1-27 - Route 7 – scheduled and actual cumulative journey time

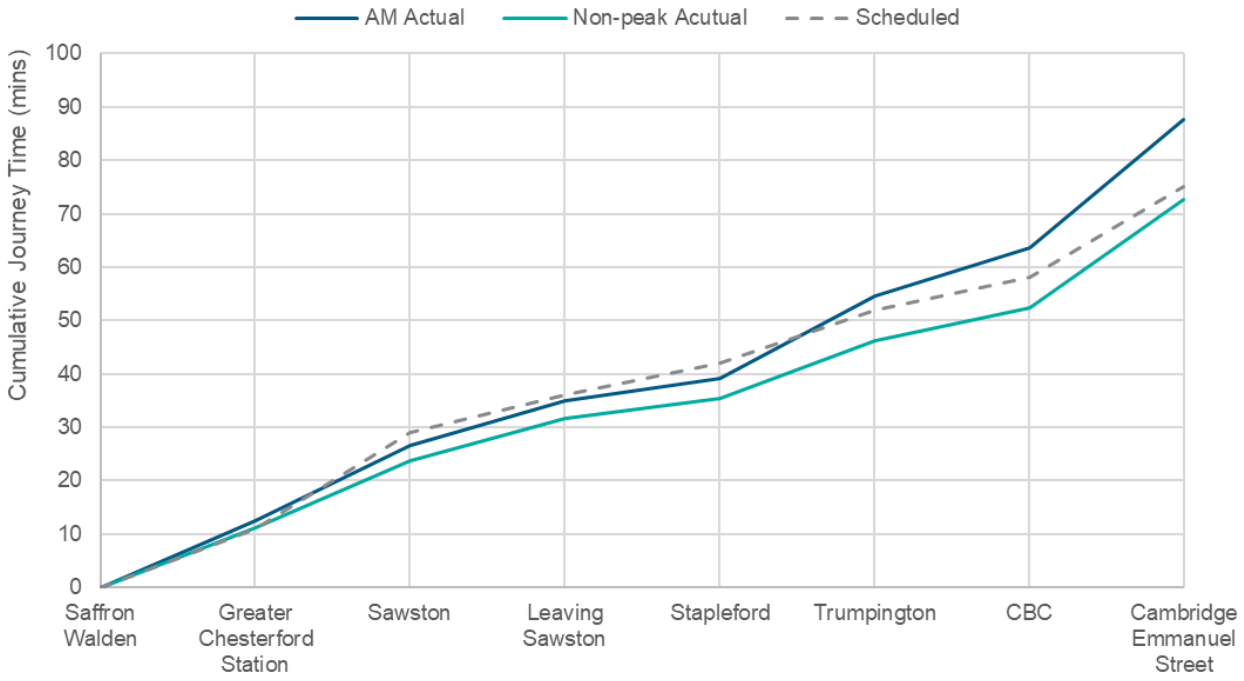
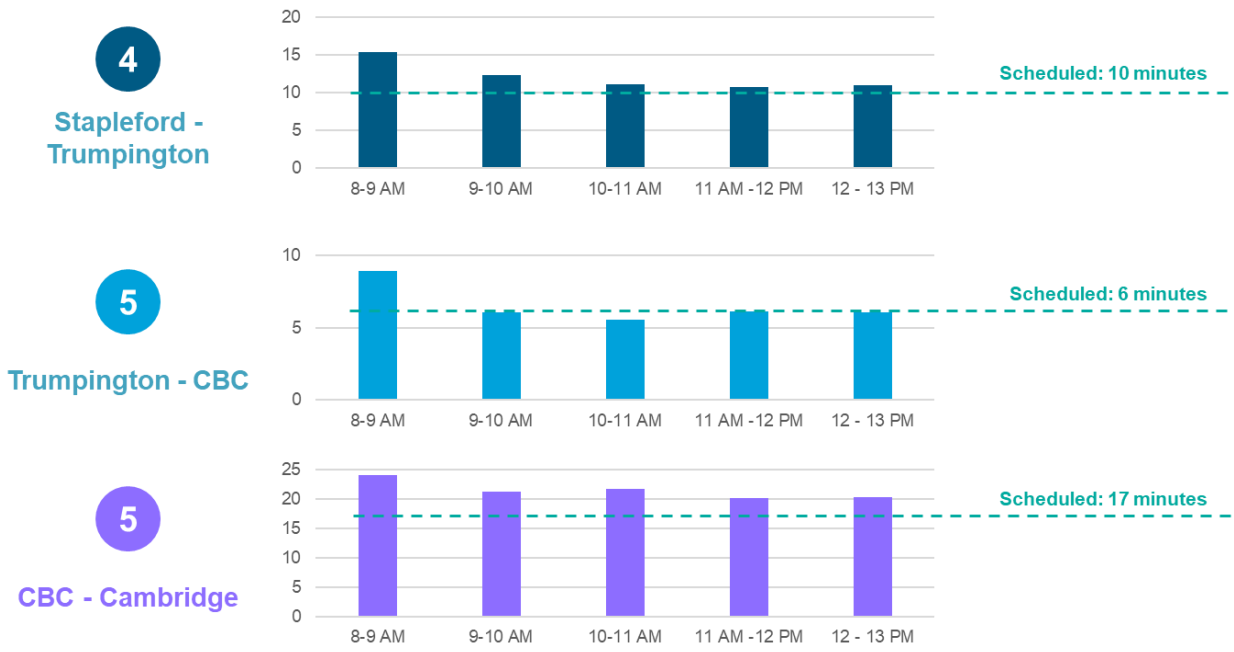


Figure 1-28 - Route 7 – journey time by hours (selected sections only)



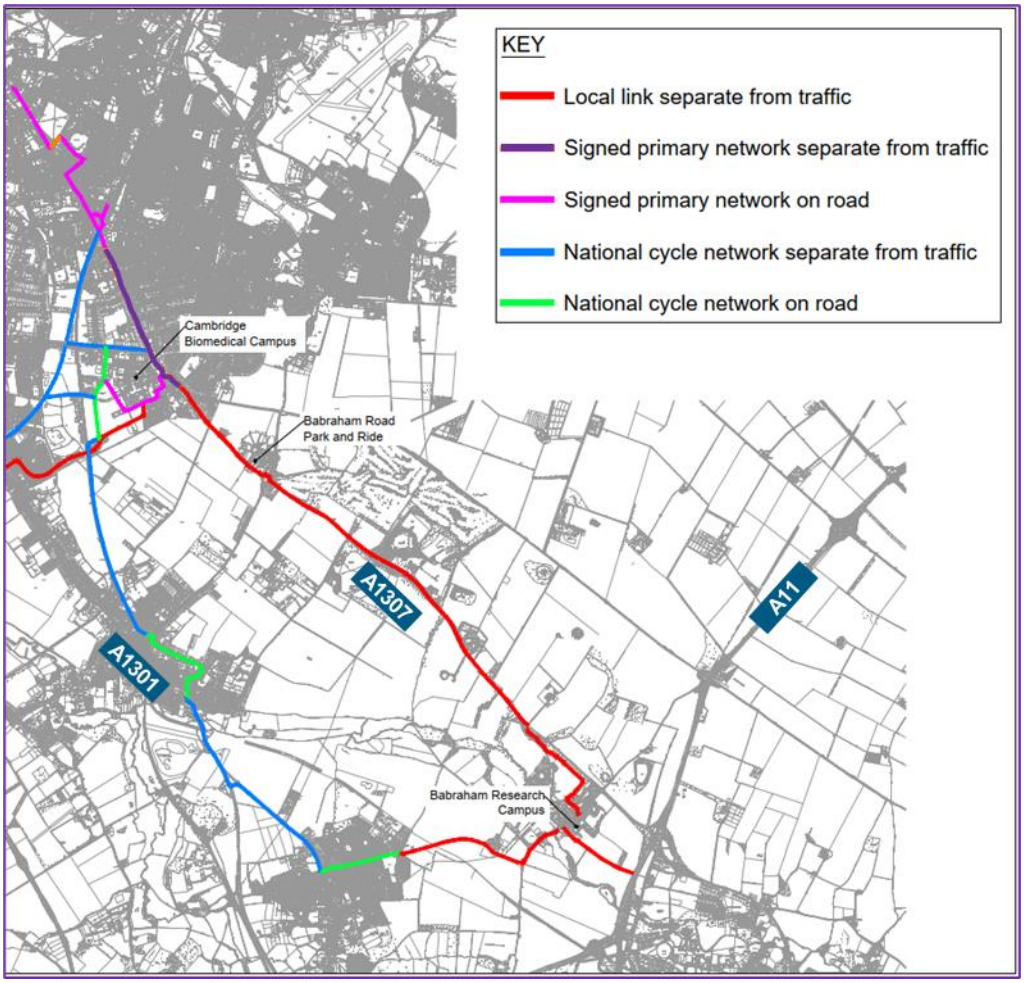
Bus services – key points

- The bus network servicing Greater Cambridge and beyond is primarily composed of a wide-reaching traditional bus network, the Busway and five P&R bus services. CSET2 will complement the existing bus services and improve connectivity to Greater Cambridge and beyond.
- The key bus services to the South East are Stagecoach service group 13 along the A1307 corridor and route 7 along the A1301 corridor.
- Compared to non-peak periods, Route 13 services on average takes 5 additional minutes to travel from A11 to the CBC in the morning peak and are delayed for a further 8 minutes between the CBC and the city centre. This reflects the traffic congestions along the A1307 in the morning peak as buses do not operate on dedicated lanes. Delays on these sections of the road are consistent and well-known, as the schedule timetable of the Route 13 have been adjusted to allow for additional travel time in the morning peak. CSET2 will provide improved journey times between CBC to and the city centre.
- The three inner sections of Route 7 (between Stapleford and Cambridge) each takes 50% longer to complete in the morning peak compared to the scheduled run time, suggests significant delays along the A1301 (north of Stapleford) and A1307 (between CBC and Cambridge centre).

1.5.7. Active Travel

1.5.7.1. Cycling and Walking

Figure 1-29 - Cycling links in South East Greater Cambridge



Source: OBC 2020

As shown in Figure 1-29, there is a cycle path along entire section of the A1307 between CBC and Babraham Research Campus that is classified as “local cycle link separate from road traffic”. In reality, this is a combined foot/cycleway that runs alongside the road with the separation provided by raised kerb. Towns along the A1301 are also integrated into the local cycle network of the study area, such as Shelford, Stapleford and Sawston. Overall, the cycling infrastructure in the south-east of Greater Cambridge is of a relatively high standard and provides good connection to the CBC.

However, it takes about 30 minutes for cycling the 5 miles along the A1307 between the CBC and the A11. The distance associated with such trip means cycling, as a daily mode of commute may not be an attractive or feasible option for most travellers from the south-east to provide an attractive corridor for safe cycling.

1.5.7.2. Walking

The walking facilities in the area analysed within the OBC 2020 are summarised in this section.

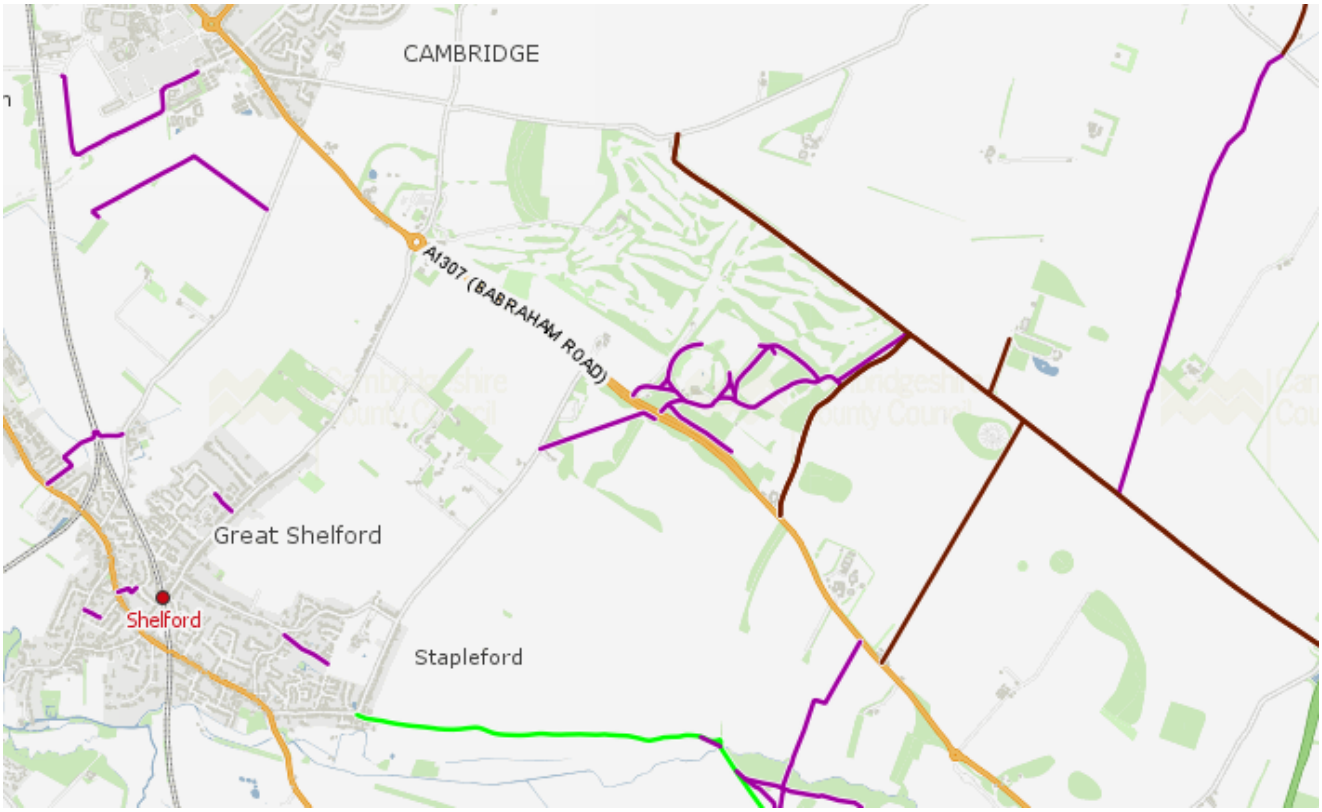
For distances under 2km, walking is a quick, sustainable and effective way to travel. For this reason, walking trips often form at least one leg of a multi-modal journey. Walking is also a form of active transport and presents limited impacts to the environment, thereby a preferred transport mode as it offers benefits to the user, the environment and the transport network.

There are a number of fragmented Public Rights of Way (PRoW) within the study area, routes either run alongside the A1307, intersect the A1307 or run parallel to the A1307.

Figure 1-30 and Figure 1-31 shows a lack of continuous route along the A1307 that is dedicated to pedestrians only. The other option would be to walk along on the active travel lane along the A1307 which is shared with cyclists, which may be unattractive for some pedestrians for safety concerns.

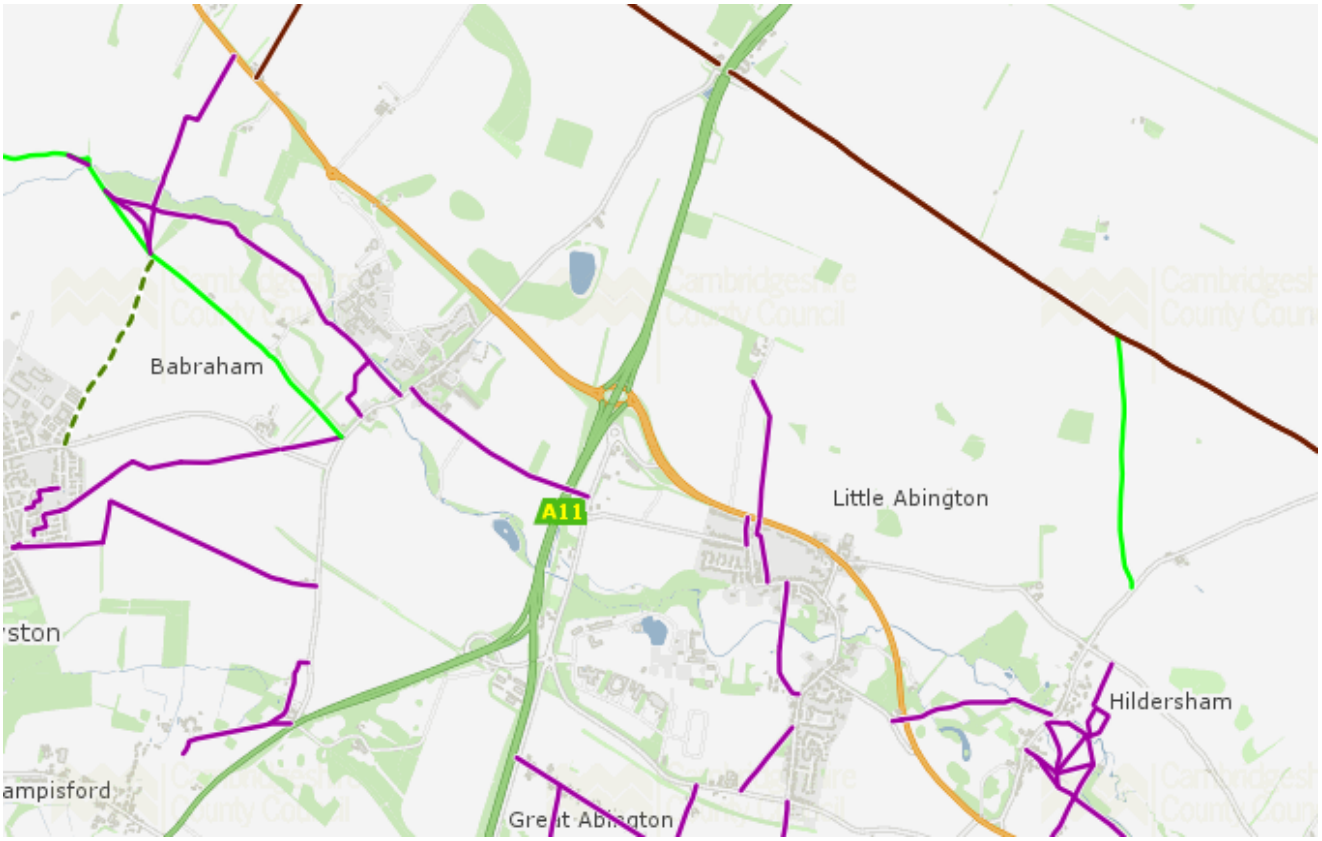
However, the key reason that walking may not be a feasible travel option for people from the south-east is the travel distance. It would take more than 1.5 hours to walk from A11 to the CBC even along the most efficient path, which very few people would choose as their main mode of commute to the CBC.

Figure 1-30 - PRoW (Addenbrooke’s Hospital to Babraham)



Source: OBC 2020

Figure 1-31 - PRoW (Babraham to Hildersham)



Source: OBC 2020

Active travel – key points

- The cycling infrastructure in the south east of Greater Cambridge is of a relatively high standard and provides good connection to the CBC. However, it takes about 30 minutes to cycle the 5 miles along the A1307 between the CBC and the A11, which may not be an attractive or feasible option for all travellers from the south-east**.**
- Although walking links do exist along the A1307 connecting to the CBC, it would take more than 1.5 hours to walk from A11 to the CBC even along the most efficient path, which very few people would choose as their main mode of commute.

1.5.8. Environment

The environment is a very critical factor considered in new infrastructure developments. In this section, the environmental constraints such as air quality, noise and other environmental issues, landscape, biodiversity, flood risks, and GHG identified within the OBC 2020 are summarised in this section.

1.5.8.1. Air quality, Noise and Historic Built Environment

The environmental concerns presented in OBC 2020 are as below:

- Given the world-famous historic built and natural environment that made Cambridge city centre a tourist destination, it is vital to preserve the setting of the historic buildings and open spaces. At the same time, it is important to manage traffic levels in the area to preserve its character and appearance.
- The scheme will help to reduce noise level and air pollution;
- CSET2 would encourage fewer private vehicles by providing high-quality public transport alternative, including new non-motorised user routes into the city centre;

- The scheme also presents an opportunity for decarbonise transport systems – to electric or other non-fossil powered public transport vehicles; and
- There are known archaeological remains of regional and potentially national significance within
- the footprint of the proposed public transport route corridor. While they likely will not threaten the feasibility of the scheme, further investigations are required to better understand them.

1.5.8.2. Landscape

The landscape surrounding the proposed scheme is detailed in OBC 2020 and captures the issues that could impact project and pointed at supplementary application enhancement measures that could be considered in CSET2.

The landscape of the route corridor is mainly open, with an undulating landform which slopes gently down the River Granta valley to the south and Cambridge city to the west. Little Tree Hill, Wandlebury and Fox Hill are highpoints. Large arable fields are separated by ditches and occasional low hedgerows. Views tend to be long, except where woodland belts frame or screen views. The landscape is more intimate around the villages of Babraham, Stapleford, Sawston and Great Shelford, where streets and garden boundaries tend to be tree lined. The designed landscapes of Babraham Hall, Wandlebury Country Park, Granta Park and The Gog Magog Golf Club gives part of the proposed route a more intimate wooded quality.

The districts design guide Supplementary Planning Document (SPD) and the Landscape in new developments SPD have a number of landscape enhancement measures identified for the East Anglian Chalk landscape which would be taken into account when delivering the CSET2 scheme.

1.5.8.3. Biodiversity

There are several biodiversity interests in Cambridge within close proximity to the project that requires careful attention in the planning and execution. These are detailed in the OBC 2020 and include Sites of Special Scientific Interest (SSSI), Local Nature Reserves (LNR) and County Wildlife Sites (CWS).

1.5.8.4. Water and Flood Risk

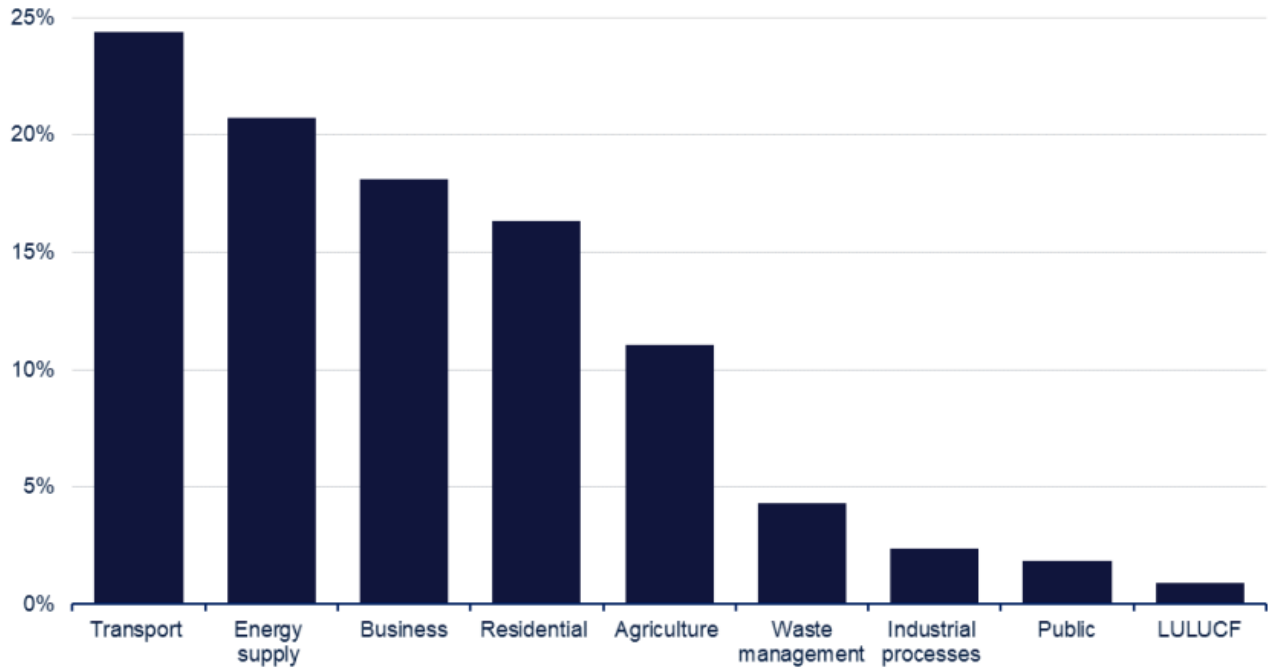
Water and flood risks within the OBC 2020 highlight that there is potential for the CSET2 scheme to enhance biodiversity by creating water related habitats to compensate for lost flood storage in the River Granta flood plain. There are numerous policies at national and local level relating to the protection of water resources. The general theme of all the policies is that the development and day to day activities must avoid any negative impacts on the quality of water bodies (surface or groundwater) from any anthropological and anthropogenic activities, including from transport schemes where the greatest risks are from road drainage and accidents.

- National and local policies on flooding have a common basis to prevent development in flood prone zones that are not flood resilient. The proposed design of the scheme aimed to consider the potential impact of flood risk on flood plains and on all land adjacent to the scheme.
- The scheme will ensure the quality of runoff discharged to infiltrate into the ground does not affect groundwater quality used for public and commercial water supplies.

1.5.8.5. Greenhouse Gases

In 2020, transport account for the highest emission by sector in the UK with about 24% more than emissions from agriculture, waste management, industrial processes and the public sectors combine (Figure 1-32). The UK government is committed to reduce national emission by 78% in 2035 using 2019/20 emission baseline and aim to achieve Net-zero target by 2050. Transport schemes present both risks and opportunity for reducing greenhouse gas emissions and lead the way to national emission reduction and net-zero targets. Further details about greenhouse gas reduction opportunities associated with the scheme is contained in OBC 2020.

Figure 1-32 - 2020 UK Greenhouse gas Emission by Sector (source: ONS)



Environment – key points

- The proposed route is in an environmentally sensitive area, as the majority of the route is within the Cambridgeshire Green Belt which is protected at both local and national level. There are also known archaeological remains of regional and potentially national significance within the footprint of the proposed route corridor.
- Despite environmental challenges, the scheme offers the opportunity to enhance biodiversity within the area, by prioritising linking areas of existing habitats to create wildlife corridors and creating new habitats in other areas, both contributing to a positive biodiversity net gain. Landscape mitigation to effectively screen the Travel Hub and proposed route will also add to biodiversity net gain and could enhance the landscape character of the area with sensitive, community friendly planting schemes.
- The major environmental benefit the scheme offers is to sustainable transport options into Cambridge city centre, reducing the number of private vehicles on the road and reducing congestion. This will help to reduce emissions, be beneficial to local air quality within the Cambridge city AQMA and contribute to reducing carbon emissions from vehicular transport**.**

1.6. Future growth and development context

The future growth and development context for the scheme consists of below sections:

- Growth identified in the adopted and emerging Local Plans
- Growth identified beyond the Local Plans period
- Planned transport infrastructure initiatives
- Impact of above-mentioned future growth and transport initiatives.

1.6.1. Growth identified in adopted and emerging Local Plans

Growth within Cambridgeshire

Significant level of new developments are planned across Cambridgeshire over the adopted Cambridge Local Plan and South Cambridgeshire Local Plan period (2018 - 2031). Some of the major planned new developments are concentrated in the inner Cambridge and along the A1307 South East Cambridge with a majority of them indicated as certain to be developed.

The committed growth identified in these adopted Local Plans presented in Table 1-17 and Table 1-18 has been used to develop a baseline scenario within the Cambridge Sub-Regional Model 2 (CSRM2). This scenario has been used for to appraise the CSET2 scheme, and 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.

Table 1-17 - Population growth

District	2015 Total	Change in population		Percentage Growth	
		2015-2026	2026-2041	2015-2026	2026-2041
Cambridge	125,105	7,020	-3,419	6%	-3%
South Cambridgeshire	154,488	21,198	21,426	14%	12%
Huntingdonshire	175,334	18,357	13,927	10%	7%
East Cambridgeshire	87,783	12,455	1,209	14%	1%
Total	**542,710**	**59,031**	**33,143**	**11%**	**6%**

Table 1-18 - Job growth

District	2015 Total	Number of additional Jobs		Percentage Growth	
		2015-2026	2026-2041	2015-2026	2026-2041
Cambridge	98,160	14,998	12,149	15%	11%
South Cambridgeshire	81,193	18,750	18,073	23%	18%
Huntingdonshire	81,207	4,567	5,129	6%	6%
East Cambridgeshire	35,508	2,216	5,153	6%	14%
Total	**296,068**	**40,531**	**40,505**	**14%**	**12%**

The CSRM2 forecasts a reduction of Cambridge's population by 3,419 between 2026 and 2041, and shows that committed growth in adopted Local Plans and committed growth to date will increase the population by 46,225 between 2020 and 2041 within Greater Cambridge. It should be noted that these baseline forecasts developed in alignment with DfT TAG guidance are based only on committed growth from adopted Local Plans, and they provide a conservative growth forecast for the region.

In addition to the growth identified by adopted Local Plans, an emerging Local Plan is being prepared for Greater Cambridge as detailed in Section 1.4.3.1 which indicates significantly higher growth than the adopted Local Plans. Although the emerging Local Plan is at an early stage of development, the Greater Cambridge Shared Planning Service has acknowledged a housing need of 51,733 dwellings between 2020-2041 rather than 44,400 dwellings as previously identified in adopted Local Plans, population increase of 126,204, and increased employment need from 58,500 jobs to 66,600. This increase in housing and employment provision is accounted through a high growth scenario modelled in CSRM2 which includes the developments from the emerging Local Plans, but this scenario is not reported in the Economic Dimension Addendum (5212868-ATK-GEB-WHL_AL_SCHME-RP-TB-000002) or the Transport Assessment.

The emerging Greater Cambridge Local Plan and CBC Masterplan 2050 both anticipate growth at CBC, but the level of ambition around and plans for growth are currently not aligned:

- CBC's Vision 2050[40] - assumes total employment increase based on an earlier study from 17,250 (in 2017) to 26,000 (by 2031) with 25,100 visitors (up from 14,500 in 2017).
- Emerging Local Plan - allocation for CBC with 9,510 new jobs (by 2041); this implies that there will be limited or no growth at CBC beyond 2031.

CBC is a key location for employment growth in the UK and is predicted to accommodate 30% of life-sciences growth within Greater Cambridgeshire in the short term (to 2031). CBC identify the delivery of the CSET guided bus scheme as a critical part of their overall strategy to facilitate this growth in the medium and long term. The emerging Local Plan includes an allocation to expand the CBC with additional 9,510 jobs created by 2041. However, the allocation does not align fully align with the CBC's growth and aspirations, and implies that there will be limited or no growth at CBC beyond the local plan period.

A High Growth Assumptions Technical Note 2023[41] (attached as Appendix B, and hereafter referred to as High Growth note) has been produced by Strutt & Parker makes a strong case based on trends, policies and studies, that the level of growth is likely to be substantially higher than the growth identified in the adopted and emerging Local Plans. The note highlights the lack of space for CBC to grow as identified within the CBC's Vision 2050. The note details that CBC estimates the undeveloped spaces on the Campus could deliver circa 220,000 sqm, which will be used up by 2032, and further growth is expected beyond that in line with the CBC's Vision 2050.

Using job creation data from 2017 to 2023 (that includes a period of restrained growth due to the global pandemic), the High Growth note project at least 134,400 new jobs in Greater Cambridge. The note highlights that assumed annual growth rate in the emerging Local Plan, although substantially higher than in the adopted Local Plan and the earlier draft, is less than half the rate at which jobs were created in Greater Cambridge Area between 2016-2022 (32,259 jobs). Based on past trends in inward investment and job creation, potential future employment and population growth will be substantially higher than that planned for in both the Adopted and emerging Local Plans.

The High Growth note highlights the findings of CPIER 2018 that between 1997-2016, the employment levels in Greater Cambridge have significantly outstripped the rate of housing growth. The Housing Dashboard published by Cambridge Ahead in January 2023 shows that this trend has continued between 2016-2022 despite the COVID-19 pandemic. If this trend continues, it will put further pressure on increasing the quantum of housing required to be built in and around the Greater Cambridge Area within the medium to longer term. This shortfall will be significant if the recent employment growth trajectory is maintained but will be even greater if there is an upturn in investment and employment, as Cambridge maintains and strengthens its position as a leading centre. This housing crisis is particularly acute and likely to worsen as a Cambridge's population has a very high proportion of young people (16-29) who have lower incomes and for whom affordability is a greater issue and a high and increasing proportion of the population of retirement age / not working.

The High Growth note highlights that major growth sites are in the process of being built out within Cambridge and South Cambridgeshire which will result in 1000s of new dwellings. The note also highlights that the committed growth in adopted Local Plans and committed growth to date will increase the population by 46,225 between 2020 and 2041 within Greater Cambridge, which is 79,979 less people than proposed in the emerging Local Plan, and the future population figures will be substantially higher than predicted by the adopted Local Plans.

The note highlights that based on the past trends and given the international importance of Cambridge, the employment growth within Cambridge will out-pace the allocated growth identified within the adopted Local Plans. Therefore, additional housing growth will be needed in the medium to long term (post 2041) to resolve the existing acute housing shortage within the area and support the employment growth.

The growth levels of areas outside of the Cambridge sub-region area[42] in CSRM2 are assumed at the county wide level. However, the High Growth note details that settlements such as Haverhill and Bury St Edmunds in commuting proximity of CSET2 have an allocation for over 19,000 new houses within the adopted/emerging West Suffolk Local Plan, and could lead to a higher patronage than identified within the CSRM2.

[40] CBC+Vision+2050+-+Autumn+2021+update (squarespace.com)
[41] Cambridge South East Transport Technical Note, High Growth Assumptions, Prepared by Strutt & Parker on behalf of Greater Cambridge Partnership, July 2023
[42] Cambridge Sub-Region consists of the administrative areas of Cambridge City, South Cambridgeshire, Huntingdonshire and East Cambridgeshire for the purpose of CSRM2

This projected housing and employment opportunities would bring about a significant amount of pressure on the transport network and demand in the area, hence the compelling need for a corresponding effective and sustainable transport system which the CSET2 aim to provide.

Growth outside the county

Some of the other relevant larger settlements outside of Cambridgeshire that are most accessible to and stand a great opportunity of benefiting from CSET2 are listed below. Without the CSET2 scheme, these settlements could struggle to access the biomedical campus by pressurising alternative roads:

- Haverhill- Suffolk
- Newmarket- Suffolk
- Red Lodge- Suffolk
- Bury St Edmunds- Suffolk
- Barrow- Suffolk
- Saffron Walden- Essex
- Great Chesterford- Essex
- Newport- Essex
- Stansted Mountfitchet, Essex
- Bishop's Stortford- Hertfordshire
- Royston- Hertfordshire
- Baldock- Hertfordshire
- Letchworth GC- Hertfordshire
- Hitchin- Hertfordshire

A list of committed development and likely future developments outside of the county can be found within the High Growth Assumptions Technical Note 2023[43].

Table 1-19 - Consented and likely future developments in surrounding counties south or east of Cambridgeshire

	Existing planning consents		Likely additional future developments (Draft Allocations or current planning applications)	
	Residential (homes)	**Commercial**	**Residential (homes)**	**Commercial**
Suffolk				
Haverhill	3,765	-	741	5.03 ha
Newmarket	284	-	895	10 ha
Red Lodge	-	-	713	-
Bury St Edmunds	918 + (363 under appeal)	-	13,375	13 ha
Barrow	75	-	170	2.1 ha
Essex				
Saffron Walden	1835 + (502 under appeal)	150,000 sqm	-	-
Great Chesterford	76	-	-	-
Newport	89	-	-	-
Hertfordshire				
Bishop's Stortford	3,536	25,005 sqm	-	-

[43] Cambridge South East Transport Technical Note, High Growth Assumptions, Prepared by Strutt & Parker on behalf of Greater Cambridge Partnership, July 2023

Royston	523	-	331	10.9 ha
Baldock	-	-	3,386	19.6 ha
Letchworth Garden City	-	-	1,523	1.5 ha + 9,500 sqm
Hitchin	-	-	1,009	-

In addition to the consented and likely future developments presented in Table 1-19, emerging Local Plans for West Suffolk, Uttlesford, East Hertfordshire and North Hertfordshire are under development. The High growth note details that the Uttlesford Local Plan is likely to include at least one new garden settlement and this settlement is likely to be situated to the north of Uttlesford with ease of access to the CSET route.

The implications therefore are that the adopted and emerging Local Plan developments would attract settlement of people and create employment opportunity, which would further increase the population growth. This growth would add further pressure on transport infrastructure within the area.

1.6.2. Growth identified beyond the adopted Local Plan period

The High Growth note provides an assessment of the likely long term future development up to 2080 within settlements in proximity to CSET2 that have not been considered by the CSRM2. The note acknowledges the difficulty in assessing the growth beyond the adopted and emerging Local Plan. The growth assumptions are based on review of past trends, evidence-based research within the CPIER 2018[44] and work undertaken by Cambridge Ahead and local employment bases such as CBC.

The High Growth note details that the latest growth figures within the Housing Strategy Paper January 2023 identifies a significant under-estimation of the housing and employment demand, which has resulted in an increase in the growth figures for the emerging Local Plan. The level of employment growth has also substantially outstripped the housing growth, and this trend is likely to continue based upon the figures set out within the emerging Local Plan for Greater Cambridge. The report adds that the trend of workers moving to areas with lower house prices like East Cambridgeshire, West Suffolk and Uttlesford to commute to Cambridge is also observed. Hence, it is likely that additional housing will be needed post 2041 to meet the severe under-supply as compared to the employment growth.

Furthermore, the CBC's Vision 2050 sets out their future plans to grow extending beyond the plan period for the emerging Local Plan, which does not fully capture the growth aspirations of the CBC.

The report also provides details of the six development sites submitted as part of the emerging Local Plan for Greater Cambridge and Uttlesford Local Plan as potential new settlements within close proximity to the Travel Hub. These developments could further add to the congestion identified in CSRM2.

Hence, the overall growth within the Local Plan period and beyond that is expected to be substantially higher than forecasted based on above trends and aspirations.

1.6.3. Planned transport infrastructure initiatives

This section details proposed and planned transport infrastructure initiatives in the vicinity of CSET2.

1.6.3.1. East-West Rail

Whilst at present there are no direct rail links along the A1307 corridor, there are plans for rail improvements to the west of Cambridge along the Oxford to Cambridge Arc in the form of the East West Rail proposal. The East West Rail is a new rail link under development which would connect communities between Oxford, Milton Keynes, Bedford and Cambridge. Phase 1 of the western section between Oxford and the Chiltern Mainline junction has been operational since 2016, and DFT have made the Transport and Works Act Order (TWAC) for Phase 2 of the western section between Bicester and Bletchley.

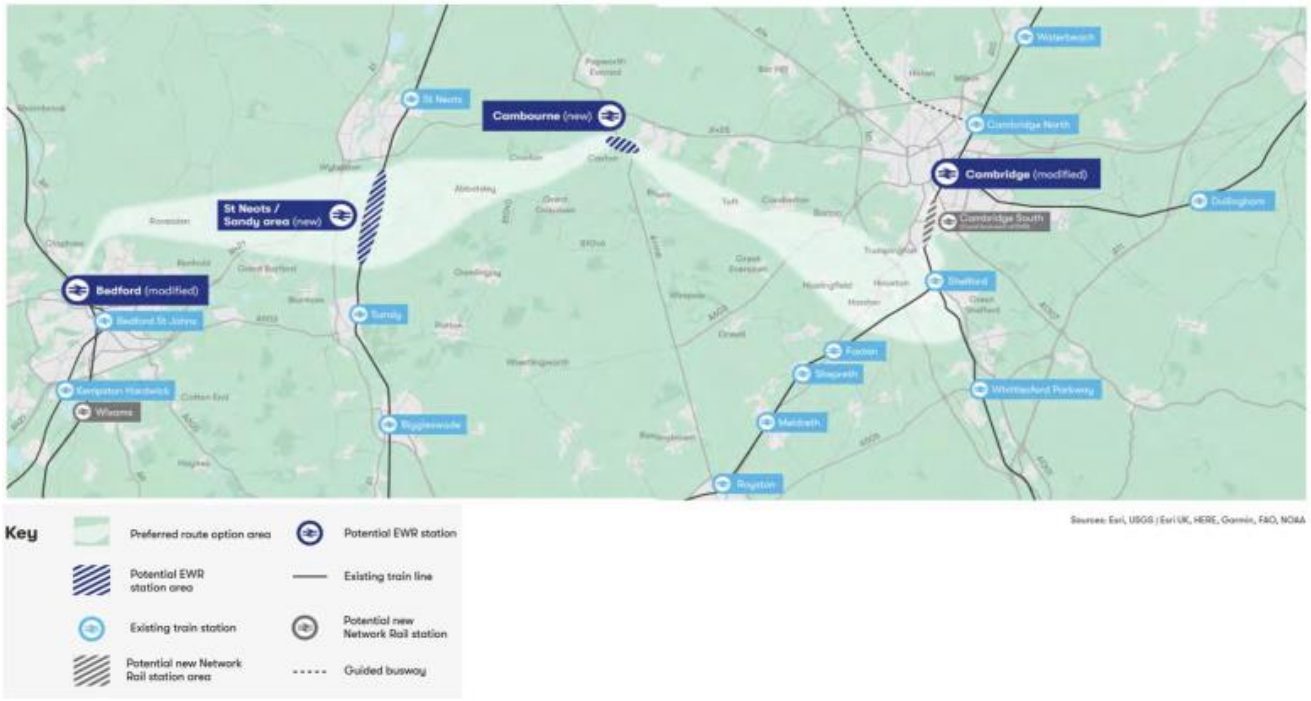
Between Bletchley and Cambridge, the project proposes bringing back into use a section of railway that was closed to passengers in the 1960s, refurbishing existing railway lines between Bletchley and Bedford, and building brand new railway infrastructure between Bedford and Cambridge, defined as the "central section".

Options were developed for the Bedford to Cambridge section and consultation was held between January and March 2019 where the public were presented with a shortlist of five broad route alignments. The results of that

[44] Cambridgeshire and Peterborough Independent Economic Review 2018, website at: CPIER - CPIER

consultation were published in January 2020, and based on the results of 2020 public consultation, the preferred route corridor (shown in Figure 1-33) between Bedford and Cambridge was identified and will link existing stations in Bedford and Cambridge with communities in Cambourne and the area north of Sandy, south of St. Neots. The preferred corridor envisages joining the London to Cambridge Main Line railway in the vicinity of Great Shelford; the actual point of joining being either south or north of Great Shelford, but yet to be determined.

Figure 1-33 - Preferred Route Corridor: Bedford to Cambridge



Source: East West Rail Preferred Consultation Option Executive Summary, January 2020

1.6.3.2. A505 Royston to Granta Park Strategic Transport Study

A strategic transport study for the A505 corridor between Royston and the A11 at Granta Park has been commissioned by Cambridgeshire County Council on behalf of Cambridgeshire & Peterborough Combined Authority (CPCA). This study will assess the current traffic problems and potential future demand on the A505 between Royston and the A11; a corridor which skirts the southern edge of the scope of the CSET2 scheme, and will investigate options for better provision for cyclists, pedestrians and public transport users.

The Stage 1 of the study started in 2019 and factors in plans for the new housing and development opportunities in the wider region. A pre-Strategic Outline Business Case has been recently developed for Stage 1 and the plans are aligned with the GCP's programme for the area. The following interventions[45] are recommended for further analysis and development as part of Stage 2:

- Linked improvements for walking and cycling including boosting bike parking; north-south and east-west cycle connectivity linking Travel Hubs with local employment centres and growth areas; and addressing barriers to active travel.
- Behavioural change measures to encourage sustainable travel and walking and cycling.
- Public transport improvements including the consequences/outcomes of the re-structure of public and private bus services in the eastern end of the study area as well as bus priority.
- Mass Rapid Transit (MRT) – an extension of the CSET from the proposed Travel Hub near the A11 to continue south and parallel to the A11 terminating at a new Travel Hub close to the Stump Cross Roundabout.

[45] A505 Royston to Granta Park Strategic Growth and Transport Study - Cambridgeshire & Peterborough Combined Authority (cambridgeshirepeterborough-ca.gov.uk)

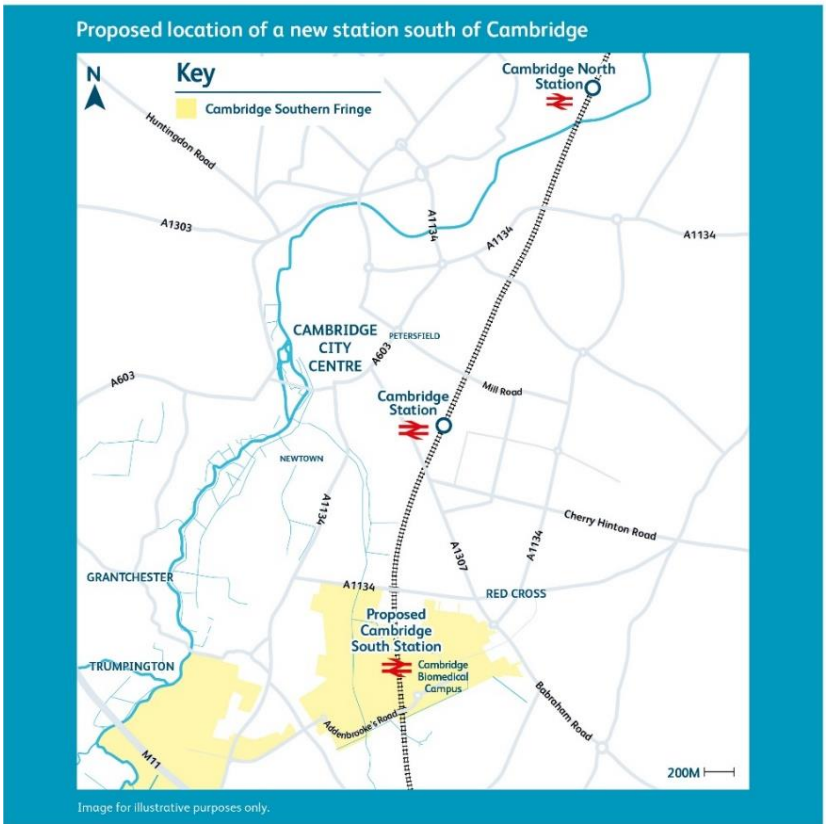
- Highway improvements including: local pinch point improvements at junctions with severe congestion; and major highway carriageway and junction improvements where necessary to meet the study objectives.
- Safety improvements involving on-carriageway enhancements between Royston and to the east of Flint Cross junction either for motorised vehicles and active mode travellers; and safety improvements at key junction hotspots in Sawston.

1.6.3.3. Cambridge South Station

The proposed new rail station at Cambridge South aims to improve connectivity between the growing Biomedical Campus and international gateways, to reduce reliance on Cambridge station and improve sustainable transport access into the Southern Fringe of Cambridge.

An Outline Business Case has been developed in 2021 and the proposed location of the Cambridge South Station is presented in Figure 1-34. Network Rail has developed three station location options (Northern, Southern and Central location) positioned between Addenbrooke's Bridge which carries the Guided Busway, and Addenbrooke's Road. Network Rail also undertook an initial round of consultation where it was established that more consultees preferred the Northern location, followed by the Southern location and then the Central location.

Figure 1-34 - Proposed Location of Cambridge South Station



Source: Strategic Case Outline Business Case - Cambridge South Rail Station

A Transport and Works Act order application and a request for deemed planning permission to build the station has been submitted to the Secretary of State for Transport in 2021. Subject to the approval timelines, the work is estimated to begin in 2023 at similar times as CSET2, and the station is expected to be fully open in 2025. As the construction timelines for both projects overlap to deliver infrastructure in adjacent areas, the Outline Business Case acknowledge that construction programmes and logistics will need to be coordinated in order to reduce the likelihood of delay to one or both projects.

1.6.3.4. Cambridge Greenways

The Cambridge Greenways project comprises of a network of 12 radial greenway routes into Cambridge from surrounding towns and villages as shown in Figure 1-35. The project intents to make travel into and out of

Cambridge easier and sustainable through its greenway routes. The Linton Greenway and Sawston Greenway are both located within the same geographic area where the CSET2 project is proposed.

Figure 1-35 - Proposed Cambridge Greenways Network

Source: Greater Cambridge Partnership, https://www.greatercambridge.org.uk/sustainable-transport-programme/active-travel-projects/greater-cambridge-greenways

1.6.4. Impact of future growth and transport initiatives

Significant level of new developments is planned across Cambridgeshire over the Local Plan period, with some of the major planned developments are concentrated in the inner Cambridge and along the A1307 South East Cambridge.

In addition to the committed growth identified in the adopted Local Plans, the emerging Greater Cambridgeshire Local Plan indicates significantly higher housing and employment need. This growth would bring about a significant amount of pressure on the transport network and demand in the area, hence the compelling need for a corresponding effective and sustainable transport system which the CSET2 aim to provide. Without intervention, the productivity, connectivity and liveability of Cambridge and its south-east can be at risk:

- Productivity: The CBC and other employment hubs along the A1307 will be increasingly more difficult to access by car from the south-east as the result of worsening traffic conditions along the A1307. Public transport users will also be impacted to the same traffic delay as private vehicles. Access constraints (both by car and public transport) from the south-east can limit the workforce catchment of these employment centres and ultimately their growth potential, which can in turn have impact the productivity growth of the wider region.
- Connectivity: Without fast and reliable access to the dominant employment centres in the region such as Cambridge city centre and the CBC, the south-eastern part of Greater Cambridge and beyond will continue to suffer from sub-standard connectivity compared to other parts of the city region. As a result, these areas will struggle to attract new residents while transport may increasingly become a barrier for existing residents to access employment, education and other opportunities, leading to further economic inactivity and deprivation in certain pockets.
- Liveability: High traffic volume often leads to increase in noise level, air pollution and collision numbers, all of which will impact the attractiveness of Cambridge's south east as a place to live and work.

Currently, there are about 35 bus services connecting to the CBC each hour during peak periods, 28 of which are from the north-west and only seven from the south-east. Almost all these services are on-road, with the exception of seven Busway services from the north-west and do not extend beyond the CBC. This means there are only 7 services per hour connecting Cambridge's south-east to the CBC, all of which are exposed to on-road traffic delay. This level of service is simply not enough for the commuters from the south-east.

Further growth beyond that originally identified in the emerging Greater Cambridge Local Plan is now being proposed. More land for housing and employment development will be needed if Cambridge is to support the Government's objective of significantly boost the supply of new homes and to support economic growth and productivity, particularly to continue to strengthen Greater Cambridge's economy, and provide sufficient new homes that are affordable to the growing and predominantly young workforce.

In summary, the level of expected future growth in terms of population and employment in Cambridge and South Cambridgeshire suggest that existing transport systems does not have the resilient to cope with travel demand and forecast growth across South East and Central Cambridgeshire. Hence, there is need for a prompt step-up actions in providing adequate and sustainable transport to would evade overstretching and travel infrastructure deficit. These deficits could potentially lead to congestion and carbon emissions, delay of travel time and road safety concerns. CSET2 would not only deliver marginal infrastructure support that absorbs future travel demand but would provide contemporary sustainable systems that meets aesthetics needs of Cambridgeshire and travel taste of new generation of transport users.

Implications of future population and employment growth for CSET2:

- Further growth beyond that originally identified in the emerging Greater Cambridge Local Plan is now being proposed. More land for housing and employment development will be needed if Cambridge is to support the Government's objective of significantly boost the supply of new homes and to support economic growth and productivity, particularly to continue to strengthen Greater Cambridge's economy, and provide sufficient new homes that are affordable to the growing and predominantly young workforce.
- The population growth will impact congestion along the A1307 corridor, increasing ambient GHG emissions and general pollution. The pressure on mainly A1307, which connects several settlements between Cambridge city centre and south-east Cambridgeshire, explains the crucial need for a transformational improvement of existing transport infrastructure and other travel options to improve road travel.
- Existing transport infrastructure is not equipped to cope with the expected travel demand associated with the scale of economic progress and employment growth forecast across South East Cambridge and Central Cambridge.
- A delay or failure to improve infrastructure adequately may impede the rate at which employment opportunities are unraveled and slow down economic growth in the region. Inadequate sustainable transport may ultimately result in existing transport network capacity being stretched and if exceeded, could reach a deficit resulting in delay, unreliable journey times, greater road safety concerns and increased greenhouse gas emissions.

1.7. Stakeholders' views and requirements

The Stakeholder Engagement and Communications Plan (MMDBCA-00-RP-BC-0371) outlines the planned approach to stakeholder engagement and communications to support the scheme development through Transport and Works Act Order (TWAO) preparation and Full Business Case.

Since inception of the CSET project in 2015, the community and stakeholder engagement process has produced a number of outcomes. Table 1-20 summarises the public consultation undertaken by GCP and gives an overview of the key decisions steering the CSET's development. The summary has been prepared using direct material from the Consultation Report (December 2021)[46] and Statement of Community Involvement (April 2021)[47] produced by Mott MacDonald; past meeting minutes provided for the Local Liaison Forum (LLF)[48] and GCP Project Board[49]; and previous presentation slide decks prepared by both WSP and Mott MacDonald. Where required, independent commentary has been provided by Atkins in pink text to offer context to the existing information available on the route's development and to highlight key observations/gaps in the evidence base.

Table 1-20 provides a timeline of key decisions in the evolution of the CSET scheme between 2015 and July 2021 – adapted from a similar table available in the Mott MacDonald Consultation Report (December 2021).

Table 1-20 - Key development decision timeline for CSET

Timeline	Consultation / Event	Purpose	Key Outcomes
2015	Early stakeholder engagement and workshops	A range of different scheme options were proposed including: • Re-opening the Haverhill to Cambridge railway line; • A bypass for Linton; • Creating dual carriageway along A1307. Initial technical work helped to determine and compare the benefits of the options.	Benefits and costs of scheme options were considered against their ability to meet objectives of GCP scheme programme. Rail and road dualling concepts were found not to be affordable/deliverable within the scope of GCP.
June to August 2016	2016 public consultation	Public consultation to consider initial strategic concept options for public transport improvements along A1307 corridor.	Key 2016 consultation findings: • Majority supported bus link from Babraham Road Park & Ride to Addenbrooke's CBC, with slightly more support for the on-highway option (49.9%) than off-highway (44.9%). • Greater number of people opposed off-highway option (16% strongly opposed, compared to 8.5% strongly opposed to on-highway). Primarily due to environmental concerns, including link's proximity to assets like Nine Wells LNR and Gog Magog Hills. • Additional Park & Ride capacity was generally well supported, with both options supported by over 60% respondents. Option to expand existing Babraham Road site marginally more popular (2%) than creating new site close to A11 junction. Following the consultation, preferred options were developed for an on-highway inbound bus lane.

[46] Mott MacDonald (December 2021) *Cambridge South East Transport Phase 2: Consultation Report*
[47] Mott MacDonald (April 2021) *Cambridge South East Transport Phase 2: Statement of Community Involvement*
[48] Local Liaison Forum Meeting Minutes (2017-2021)
[49] GCP Project Board Meeting Minutes (2016-2017)

Timeline	Consultation / Event	Purpose	Key Outcomes
February 2017	LLF Meeting	2016 consultation findings and preferred options were presented to the newly established LLF.	LLF members raised concerns with proposed preferred options. LLF Chair reported back to GCP Joint Assembly meeting on 1st March 2017 and GCP Executive Board meeting on 8th March 2017. During GCP Executive Board meeting on 8th March 2019, additional workshops with LLF groups were arranged for before next consultation.
April to November 2017	LLF Group Workshops	The LLF groups proposed a number of bus, road safety and active travel improvements for the Haverhill to Cambridge corridor. These were ranked by the LLF and developed into: • Short-term, bus, road safety, walking and cycling improvements for the A1307 between Haverhill and Cambridge (CSETS Phase 1). • Three long-term strategies for Cambridge South East Transport Study area (CSETS Phase 2); Long term strategies: • A new off-road, segregated public transport route from the A11 to the CBC; • Two further strategies involving bus lanes along A1307 between A11 and Addenbrooke's Hospital.	Three strategies developed by LLF were presented to GCP Joint Assembly on 2nd November 2017 and to GCP Executive Board on 22nd November 2017. Executive Board agreed unanimously to: • Note revised options and strategies resulting from work with LLF; • Note increased cost of strategies, more than the £39m previously estimated, as a result of additional options; • Approve withdrawal of existing park and ride proposals at Babraham Village and Wild Country Organics, pending new larger sites being identified; • Undertake public consultation on the three strategies, subject to Strategy 1 being considered as an off-road public transport corridor; with most appropriate being subject to further consideration at a later stage of scheme development following outcome of this consultation; • Aim to begin additional public consultation in February 2018 following discussion with Mayor and Combined Authority on content; • Authorise officers to progress design and planning of lower cost works within public highway not requiring consents for early delivery, subject to consultation.
February to April 2018	2018 public consultation	Public consultation to consider three high-level public transport options along A1307 corridor. 17 shorter-term proposals for bus priority, junction improvements, walking and cycling measures and road safety improvements also presented.	Key 2018 consultation findings: • Strategy 1 was most supported of the three Phase 2 strategies. • Strategy 1 had highest percentage (29.3%) of respondents who felt it would encourage them to switch transport mode away from a car. • Most Phase 1 elements were supported by majority of respondents except the signalisation and right-turn ban (except buses) from Linton High Street, measures to ease bus movements in Linton, westbound bus lanes on the approach to the B1052 and closing the central reserve at Dean Road crossroads.

Timeline	Consultation / Event	Purpose	Key Outcomes
			Consultation results were presented during the GCP Executive Board meeting on 4th July 2018. Decision on the strategy approach was deferred until October 2018 due to a pause requested in the Mayoral Interim Transport Strategy Statement. Decision made by GCP Executive Board on 4th July 2018: • Note results of public consultation.
11th October 2018	GCP Executive Board Meeting	GCP Executive Board meeting to consider 2018 public consultation results (see above).	Decisions made by GCP Executive Board: • Note outcome of public consultation and final consultation report; • Agree adoption of Strategy 1, the off-road strategy, as preferred strategy for A1307 corridor and request that officers develop detailed proposals for delivery of scheme including detailed route alignment, park and ride and review of environmental impact; • Request that officers draw up landscaping and ecological design proposals which would add enhancements to area, maximising potential of the off-road option including considering possibility of a linear park alongside development of the off-line solution; • Note updated programme for project.
27th June 2019	GCP Executive Board Meeting	GCP Executive Board meeting to consider project's next steps.	Decisions made by GCP Executive Board: • Note further work undertaken on identifying potential route alignments and travel hub locations for CSETS; • Agree to undertake public consultation on shortlisted routes; • Receive report in early 2020 outlining consultation response, OBC and final proposals for scheme.
September to November 2019	2019 public consultation	Public consultation to consider travel hub options, proposed stops and shortlisted CSET route alignments.	Key findings of 2019 consultation: • Over half of respondents indicated they support proposals for a scheme to improve public transport in south-east of Cambridge; • No majority of support for any of the three Travel Hub locations; • No majority of support for any of the five routes for accessing the Travel Hub sites. Post consultation, the GCP Executive Board approved the Brown route as the preferred option.
25th June 2020	GCP Executive Board Meeting	GCP Executive Board meeting to consider project's next steps.	Decisions made by GCP Executive Board: • Note results of 2019 public consultation; • Endorse key conclusions of OBC presenting a preferred high quality public transport, walking and cycling route;

Timeline	Consultation / Event	Purpose	Key Outcomes
			• Endorse key conclusions of OBC in relation to a travel hub location; • Request that officers undertake an Environmental Impact Assessment (EIA) for route and prepare a Transport and Works Act Order (TWAO) application; • Approve procurement of legal services to support preparation of a TWAO; • Approve revised budget for CSET Phase 2 project; • Require officers to keep scheme details and business case under review to ensure that Full Business Case and final design reflects any changes arising from LTP sub-strategy consultation, as well as emerging proposals from EWR and the CAM tunnelled and regional route sections; • Require officers to develop a strategy for sustainable and carbon neutral solutions, and environmental improvements – including protection/enhancement of Nine Wells nature reserve.
October to December 2020	Public consultation	EIA public consultation to consider two route options, identify environmental impacts and proposed mitigation measures of adverse impacts.	Key findings of 2020 consultation: • Highest proportion of respondents (33.6%) strongly opposed proposed route realignment between Babraham and Sawston. 11.8% strongly supported and 15.5% supported the proposed realignment; • 54.3% respondents agreed with proposed segregation of cycling/pedestrian path along western side of Francis Crick Avenue (FCA), compared with 4.9% respondents that opposed. • Highest proportion of respondents answered either 'No opinion' (28.6%) or strongly supported (27.6%) an active travel route between the Travel Hub and Granta Park (Active Travel Route A). Post consultation, the GCP Executive Board reaffirmed the Brown route as the preferred option for the scheme.
10th June 2021	GCP Joint Assembly Meeting	Quarterly meeting of GCP Joint Assembly.	No objections raised to Brown route alignment and Joint Assembly supported project proceeding to next step. Following this, GCP progressed with Brown route as preferred route option.
1st July 2021	GCP Executive Board Meeting	GCP Executive Board meeting to consider project's next steps.	Decisions made by GCP Executive Board: • Note response to EIA consultation; • Note a non-technical summary of the Environmental Statement; • Agree submission of a TWAO application to secure necessary planning and consents for scheme.

Appendix A expands on the key decisions outlined in Table 1-20 and provides further narrative as to how the preferred route was initially devised and subsequently evolved throughout the development of CSET2.

Summary of project milestones from 2015 to 2021

- Early stakeholder engagement and workshops in 2015 indicated that rail and road dualling concepts were found not to be affordable/deliverable within the scope of GCP.
- Following the 2016 public consultation, preferred options were developed for an on-highway inbound bus lane.
- Three strategies developed by LLF were presented to GCP Joint Assembly in 2017 and it was agreed to undertake public consultation on the three strategies, subject to Strategy 1 (devised by LLF) being considered as an off-road public transport corridor; with most appropriate strategy being subject to further consideration at a later stage of scheme development following outcome of this consultation.
- 2018 public consultation indicated that Strategy 1 was most supported of the three Phase 2 strategies. 29.3% stakeholders felt this strategy would encourage them to switch transport mode away from a car.
- In 2019, it was agreed that no further work was to be done on identifying route alignment and travel hub locations for CSET.

1.8. Business needs and service gaps

The current and future problems outlined in in Section 1.9 compromise GCP's ability to deliver its vision to support and sustain Greater Cambridge as a place to live and work by provision of integrated transport with public transport routes and active travel options offering a viable alternative to driving. This is reflected within the logic map in Figure 1-36, and therefore GCP needs to deliver a solution to facilitate its continued growth and support the continuation of the 'Cambridge Phenomenon'. The scheme aligns strongly with GCP's vision to transform the way people move in Cambridge and travel with greener transport links and its commitments to shift to zero carbon.

1.9. Key problems and case for change

In this section, the key concerns around the scheme such as five minutes delay along Hinton Way, unequal availability of travel options into Cambridge, limited public transport access from around the south east, leading economic growth including employments growth potential arising from the Biomedical Campus, etc. are discussed with the view of providing cases for change. An argument for relying on emission ladened road could challenge Net-zero ambitions and environmental targets. The table below contain the illustrations and cases for change. Nonetheless, these key issues from OBC 2020 are found credible with some modifications.

The availability of public transport into Cambridge is not equal from all directions. Due to the lack of high standard public transport options, such as rail and bus travel with dedicated lanes, towns to the south-east of the city are not connected to Cambridge and its key employment sites.

- Although there is a comprehensive public transport system within Greater Cambridge mainly primarily composed of rail, the Busway, five P&R services and a wide-reaching traditional bus network, the quality of these public transport provisions are not equal from all directions.
- The rail network in the region provides efficient public transport connection to Cambridge City from the north, east, south and south -west, while the Busway is a reliable option for the north-west. However, the western and south-eastern parts of the city region are not serviced by high-quality public transport options.
- Following the full delivery of East West Rail which will establish new rail connection from the west, the south-east will likely be the only remaining corridor that has substandard public transport linkage to Cambridge and its key employment sites.

Limited public transport options from the south-east to key destinations in Greater Cambridge constrains access to employment, educational and leisure opportunities for its current and future residents.

- The south-east is currently serviced by only two regular bus routes (13 and 7), both of which experience severe delays during peak periods along the A1307 and A1301 when travelling in Cambridge's inner areas.
- Such delays are not experienced when using higher quality public transport options such as rail or the Busway, meaning commuters from other parts of the city region (where these services are available) can travel into Cambridge more efficiently than those from the south-east.
- For example, it takes 50 minutes to travel to Cambridge from Haverhill by public transport, 5 minutes more than the journey time from Bury St Edmunds in the east, which is almost twice as far away from the city. This means residents in the south-east have access to fewer employment, educational and leisure opportunities when spending the same time travelling on public transport.
- As a result, about 80% of existing commuters from the southeast drive to work in Cambridge City, making them the second most reliant on private vehicle out of seven segments of Greater Cambridge. Without intervention, residents in the southeast will continue to be reliant on cars as their main method of transport.
- Further, without improved access to jobs, education and services, Greater Cambridge's south -east area may struggle to attract future residents nor contribute to Cambridgeshire's population growth ambition.

The economic growth ambition of Greater Cambridge and its status as a world-leading centre for research, innovation and technology may be compromised if it is not supported by sufficient investment in transport infrastructure

- Cambridge is renowned for being a world-leading centre for research, innovation and technology. The CBC and other institutions in the city's south-east makes Cambridge the heart of Britain's life-sciences industry, which will play a nationally strategic role going forward in reviving Britain's currently sagging economy. This industry is key to the UK's competitiveness in the world market and is vital to the "UK PLC" brand.
- One of the key contributing factors to economic growth is access to the largest possible workforce. If workers from the south-east cannot travel to Cambridge and its growing employment centres

efficiently, the companies and nationally important industries in the city will be missing out on a large pool of employee talent and may therefore be unable to fulfil their maximum growth potential.

Roads in central and South East Cambridge are already experiencing congestion, limiting journey times and reliability for both car and bus.

- Major congestions are already being observed along the A1307 during peak periods. Between 8 and 9 AM, northbound traffic experiences severe delays for the entire section between Hinton Way and Cambridge city centre. This is more than doubling the journey time between the Hinton Way roundabout and the Biomedical Campus, affecting the journey time and reliability for drivers along the A1307.
- Unlike the Busway services which run on dedicated lanes, regular bus services along the A1307 (Routes 13 and 7) share the same lanes with car traffic. They are therefore exposed to the same traffic congestions and taking a noticeably longer time to run during peak periods.
- With the projected population growth along the A1307 corridor in the next two decades and the expansion of the CBC and other institutions in South East Cambridge, travel demand along the A1307 is expected to increase going forward. Without attractive and reliable alternative options, this increase in travel demand will likely lead to higher private vehicle volumes and worsening congestions

Without adequate alternative options, dependency on emission-intensive modes makes it challenging to achieve net-zero and other environmental targets.

- The proportion of commuter trips to Cambridge undertaken by car or van is higher in the south-east than almost all other parts of the city region. Car ownership level is also higher in the south-east when compared to other parts of Greater Cambridge.
- The lack of adequate alternative options highlights a significant dependency on private vehicles and high car usage, which contribute to environmental impacts, including carbon and other GHG emissions, noise and air pollution.
- Unless significant improvements are made to the existing public transport provision in the south-east to make it more attractive and reliable, it will be hugely challenging to generate a meaningful shift away from private vehicle modes and overcome the high car dependency and usage in the area.

1.10. Scheme objectives

Scheme objectives established at OBC Stage were revisited in light of the updates to the problems identified and the need for intervention in Section 1.9. The scheme objectives were found relevant and address the updated transport problems and the case for change and were renumbered to align with the transport problems in the logic map (Figure 1-36).

Scheme objectives were developed by Mott MacDonald in consultation with GCP and apply to CSET as a while, both Phase 2 and Phase 1. The scheme objectives set out below have been designed to be Specific, Measurable, Achievable, Realistic and Time Bound (SMART).

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

- Provide improved access to the Granta Park, Addenbrooke's Hospital, Cambridge Biomedical Campus and a number of other employment sites in South East Cambridge.
- Increase modal options for commuters travelling to and from employment sites in South East Cambridge and central Cambridge by delivering a high quality public transport network and improved active travel routes for users.

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

- Deliver journey time savings for commuters travelling by public transport to job opportunities in South East Cambridge and central Cambridge.
- Improve journey time reliability for users of the A1307 corridor.
- Provide the transport infrastructure necessary to sustain economic growth.

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

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

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

- Encourage use of sustainable transport modes for journeys through South East Cambridge and into central Cambridge.
- Enhance quality of life by relieving congestion and improving air quality in South East Cambridge.
- Relieve pressure at network pinch points.

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

- Deliver a High Quality Public Transport offer between Cambridge and Haverhill.
- Increase frequency of public transport services during peak periods.
- Reduce severance for cyclists, pedestrians and equestrians.
- Increase uptake of sustainable transport modes for commuter journeys.

1.11. Logic map

The logic mapping has been updated by Atkins to illustrate the relationship between the opportunity and barriers, objectives, scheme inputs / outputs, outcomes and wider impacts. The logic presented in Figure 1-36 flows throughout this Strategic Dimension and comprises the elements described below.

1.11.1. Opportunity and barriers

The current context and future growth and development detailed in Section 1.5 and 1.6 present an opportunity to support the 'Cambridge Phenomena' with growth and technological advancements, and planned expansion of the Cambridge Biomedical Campus by 2031.

However, the current quality of public transport access to Cambridge is not equal from all directions, with towns and areas in south-east of the city are not as well connected to Cambridge and its key employment sites. Congestion is observed along stretches of A1307, which is severe in and around the CBC, particularly during peak periods. The limited public transport options from the south-east to key destinations in Greater Cambridge and delays on A1307 constrains access to employment, educational and leisure opportunities for its current

and future residents. The residents in the south-east have access to fewer employment, educational and leisure opportunities when spending the same time travelling on public transport. Constrains to a larger workforce with relevant skill base means that economic growth ambition of Greater Cambridge and its status as a world-leading centre for research, innovation and technology may be compromised if it is not supported by sufficient investment in transport infrastructure. Without adequate sustainable alternative options, dependency on emission-intensive modes will make it challenging for GCP to achieve its net-zero and other environmental targets.

1.11.2. Scheme specific objectives

The scheme objectives relating to the problems faced are detailed in Section 1.10.

The objective of improving connectivity to employment sites in South East Cambridge and central Cambridge will address the problems of quality of public transport access in south east and reduce barriers and constrains to employment, educational and leisure opportunities for its current and future residents. The improved connectivity and access to employment hubs will support the continued growth of Cambridge and south Cambridge's economy, as well as support the growth ambitions of Greater Cambridge to be a world-leading center for research, innovation and technology.

CSET2 will provide an attractive and reliable public transport route connecting to Cambridge city centre, which can potentially attract modal shift from road users of A1307 to the scheme who experience delays on their journeys. This in turn will contribute to reduced congestion on the A1307 corridor. The Travel Hub will provide an interchange for modes and travel facilities like covered cycle parking, changing rooms and waiting room with toilets, and positively impact the uptake of walking and cycling in the area while improving safety for all users.

Measures of success have been defined to illustrate how each scheme objective tackles the identified transport problems. These measures of success are detailed in Section 1.15.

1.11.3. Inputs

Inputs to the scheme include the policy context in Section 1.4, funding in the Financial Dimension chapter, and inputs from stakeholders and partners in Section 1.7.

1.11.4. Outputs

The outputs delivered by the scheme are outlined include the below:

- New public transport route between the A11 and the CBC;
- A new travel hub near the A11/A1307/A505, to provide further opportunity for sustainable travel in addition to the existing Babraham Road Park & Ride. The Travel Hub will also provide an easy interchange between different modes of transport such as walking, cycling, existing bus services, and access to the new public transport route by car; and
- New active travel facilities at new Travel Hub including secured and covered cycle parking and waiting room with toilets.

1.11.5. Outcomes

The inputs and outputs lead to outcomes of the scheme, which define what the scheme aims to achieve. These outcomes present the overall impacts of the intervention in short and medium term. Key impacts and benefits streams have been identified from the outcomes which are broader themes to assess the benefits delivered by the scheme.

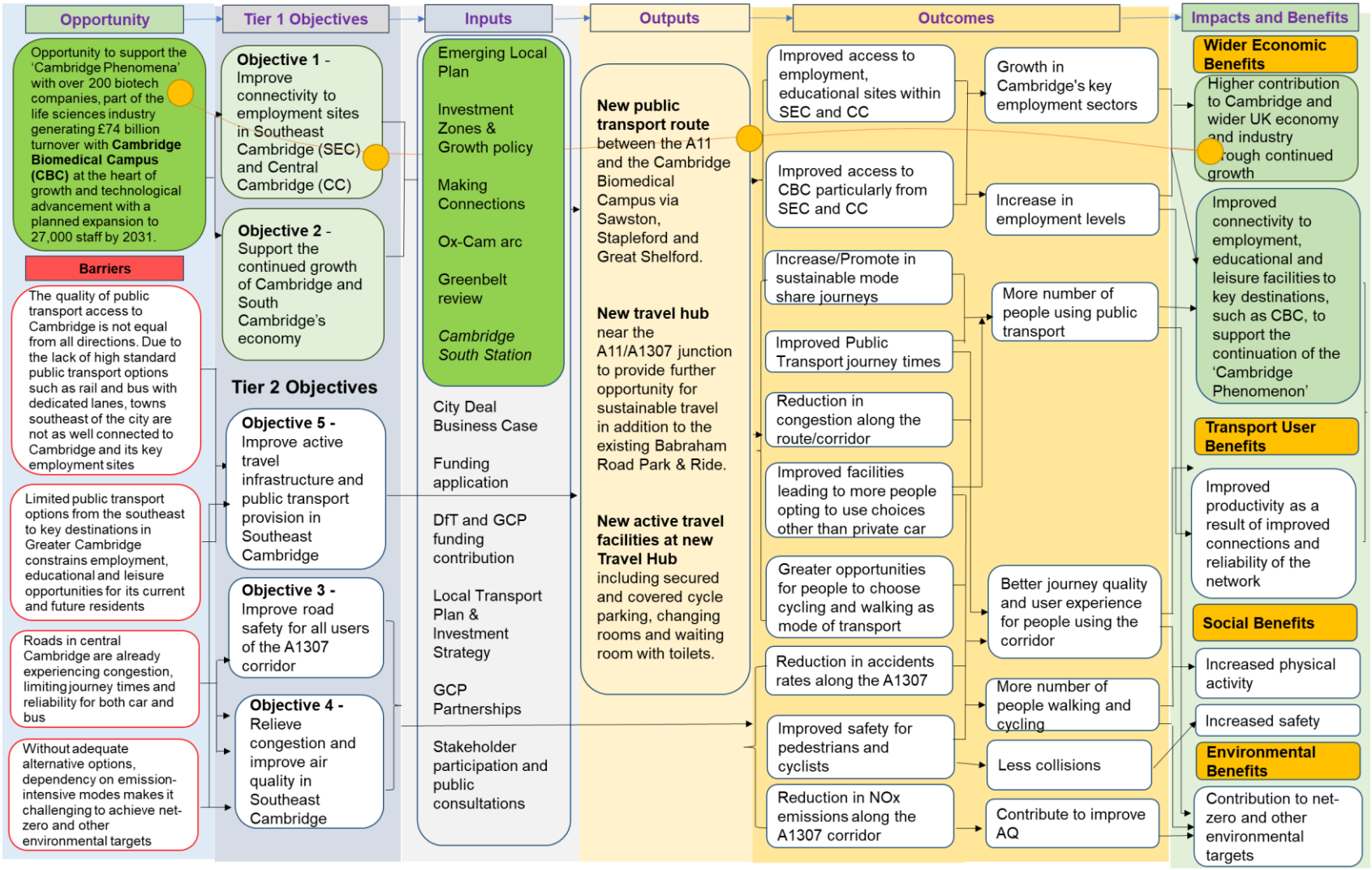
The CSET2 scheme will improve public transport access from the South East Cambridge to the Central Cambridge and key employment sites. The improved access and connectivity will support the growth aspirations of CBC and support the growth in Cambridge's key employment sectors and continuation of the 'Cambridge Phenomenon'. The scheme will support the growth of the Cambridge and South Cambridge's economy through the improved access to key employment sites, providing employers and employees access to a wider labor pool.

The new public transport route will increase the sustainable mode share journeys, and in turn improve safety for the users of the A1307 corridor. The improved public transport journey times could lead to more people using public transport and the potential modal shift could improve air quality in South East Cambridge. The scheme will support GCP's vision and contribute to the shift to net zero carbon by facilitating the sustainable transport movements in the South East Cambridge.

1.11.6. Impacts and benefit streams

The outcomes have directly informed the key impacts and benefit streams, which are broader themes to assess the outcomes delivered by the scheme. These impacts and benefit streams have been further developed to form potential measures of success aligned with the scheme objectives to assess the performance of the scheme after its opening. These measures of success are presented in Section 1.15.

Figure 1-36 - Logic Map for CSET2 scheme



1.12. Strategic links and interdependencies

The CSET2 is not dependent on any specific proposal to be delivered, however, there the scheme has strategic links and interdependencies with other proposed projects in proximity. These strategic links and interdependencies with their indicative timelines are detailed below.

City Access

The City Access project includes measures to reduce congestion on routes into the city centre which will be key to reducing public transport journey times on sections of route where high quality public transport services are sharing road space with general traffic, therefore making the CSET Travel Hub more attractive and successful. In addition, the removal of traffic from the city centre will help create additional demand for the facility.

In order to provide improved end to end connectivity between settlements and employment sites along the A1307 corridor and the city centre, CSET2 will depend on the City Access Strategy and measures to tackle the issues of congestion within the city centre and enhance the ability for people to get into, out of and around the city.

CSET1

The bus priority measures, junction improvements and road safety enhancements along the A1307 delivered as a part of CSET1 will complement the public transport route and Travel Hub proposed for CSET2.

CSET1 includes Linton Greenway improvement, which is a new multi-user path for cyclists, pedestrians and horse riders connecting Linton to Cambridge. The route alignment links with the proposed Travel Hub and public transport route of CSET2 and continues alongside the A1307 between the Babraham Research Campus to the CBC. Linton Greenway's connectivity to the proposed Travel Hub and public transport route complements the CSET2 and provides further multi-modal opportunities on A1307 corridor.

East West Rail

The preferred East West Rail route alignment (shown in Figure 1-33 in Section 1.6.3.1) currently has the potential to connect to the existing Shelford station which sits firmly within the CSET2 corridor. While there are risks to the route alignment due to Shelford being included in both proposals, the close proximity of the proposals also mean that the provision of new public transport infrastructure will be extended much beyond South East Cambridge. Due to the close proximity, the proposals need to be developed to complement each other and enhance overall connectivity within the area.

Key risks and constraints relating to East West Rail are detailed in Section 1.17.1.1.

A505 Royston to Granta Park Strategic Transport Study

The A505 Royston to Granta Park Strategic Transport Study will assess the current traffic problems and potential future demand on the A505 between Royston and the A11; a corridor which skirts the southern edge of the scope of the CSET2 scheme, and will investigate options for better provision for cyclists, pedestrians and public transport users.

Details of interventions included within this Strategic Transport Study are in Section 1.6.3.2.

The MRT recommended as a part of the Stage 2 could be an extension of the CSET2 from the proposed Travel Hub near the A11. Hence, the proposals put forward will need to be aligned to the CSET2 proposals, just as the development of CSET will need to take into account any emerging findings from this study to ensure a joined-up approach to infrastructure delivery.

Whittlesford Rural Travel Hub (RTH)

Rural Travel Hubs are small, flexible transport interchanges at key locations in Cambridgeshire, allowing more people to access sustainable transport networks. Whittlesford was identified as one of the locations for a pilot RTH following a feasibility study of potential sites across Cambridgeshire in 2017. The Whittlesford RTH would include a larger car park at Whittlesford Parkway station which is highlighted in red in Figure 1-37

Improvements to connectivity along the A1307 corridor as a result of CSET2 could encourage demand at Whittlesford RTH as well as at the new CSET Travel Hub as individuals travelling to Cambridge from the south-east could utilise parking facilities at either location. It is possible that the Whittlesford site may attract some of the potential users of the CSET Travel Hub and route and negatively impact utilisation.

Figure 1-37 - Location of Whittlesford Rural Travel Hub

Source: Rural Travel Hubs Feasibility Study Report, Cambridgeshire County Council, November 2017

Cambridge South Station

The proposed new Cambridge South Station will improve connectivity between the growing Biomedical Campus and international gateways and reduce reliance on Cambridge station. The proposed Cambridge South Station would be located to the west of the A1307 with appropriate provision of linkage between CSET2 and Cambridge South. Map of proposed station is presented in Figure 1-34 in Section 1.6.3.3.

A Transport and Works Act order application and a request for deemed planning permission to build the station has been submitted to the Secretary of State for Transport in 2021. Subject to the approval timelines, the work is estimated to begin in 2023 at similar times as CSET2, and the station is expected to be fully open in 2025. As the construction timelines for both projects overlap to deliver infrastructure in adjacent areas, the Outline Business Case acknowledge that construction programmes and logistics will need to be coordinated in order to reduce the likelihood of delay to one or both projects.

The delivery of Cambridge South Station and CSET2 could provide complimentary sustainable transport improvements to the Biomedical Campus and promote access to a growing area of high-quality employment.

Cambridge Greenways

The Cambridge Greenways project comprises of a network of 12 radial greenway routes into Cambridge from surrounding towns and villages. The proposed Cambridge Greenways Network is presented in Figure 1-35 in Section 1.6.3.4.

The Linton Greenway and Sawston Greenway are both located within the same geographic area where the CSET2 project is proposed.

The Linton Greenway is proposed to be an active travel route for walkers, cyclists and horse riders to travel from Linton into Cambridge. The route is being delivered as part of CSET Phase 1 and this includes providing access to the upgraded footbridge crossing over the A11. Although it has been determined that delivery of CSET2 should not be constrained by the Linton Greenway, and the development of the Greenway and its route/features will be adapted to accommodate CSET2. As both the schemes are being delivered in close vicinity, provision needs to be made to ensure that the schemes are developed to complement each other and enhance overall connectivity within the area.

The Sawston Greenway is proposed to be an active travel route for walkers, cyclists and horse riders to travel from Sawston into Cambridge. The proposed route would be built around the successful path that runs between CBC and Great Shelford, which is now so popular that it needs to be widened. The initial development of the Sawston Greenway proposals acknowledge that should CSET2 include an off-road cycle/pedestrian route, work undertaken to date could help the development of this element of the CSET2 scheme. Any off-road provision delivered through CSET2 will need to consider how it can address the need for intervention established by the Sawston Greenway whilst ensuring that there is no redundant duplication of infrastructure, gaps in provision or misaligned links between the two schemes. Table 1-21 summarises the strategic links and interdependencies with CSET2.

Table 1-21 - Summary of strategic links and interdependencies

Proposed projects	Strategic links and interdependencies with CSET2
City Access	City Access measures to improve congestion and reduce public transport journey times will support the CSET2 and proposed Travel Hub.
CSET1	Linton Greenway to be delivered as a part of CSET1 connects to the proposed Travel Hub and public transport route and complements the CSET2, and provides further multi-modal opportunities ion A1307 corridor.
East West Rail	The preferred East West Rail route alignment currently has the potential to connect to the existing Shelford station which sits firmly within the CSET2 corridor. Due to the close proximity, the proposals need to be developed to complement each other and enhance overall connectivity within the area.
A505 Royston to Granta Park Strategic Transport Study	CSET development needs to consider emerging proposals from Stage 1 to ensure a linked-up approach to infrastructure delivery. Stage 2 includes MRT as an extension of CSET from the proposed Travel Hub near the A11 to continue south and parallel to the A11 terminating at a new Travel Hub close to the Stump Cross Roundabout. The Stage 2 proposals and CSET2 will need to be aligned to ensure a joined-up approach to infrastructure delivery.
Whittlesford Rural Travel Hub	No potential impact toon delivery of CSET2. Potential users of the CSET facility may use Whittlesford instead, adversely affecting demand.
Cambridge South Station	Potential users of the CSET2 may use Cambridge South Station instead, adversely affecting demand. Construction work for the station is estimated to begin in 2023 (subject to approval times), similar to CSET2. As the construction timelines for both projects overlap to deliver infrastructure in adjacent areas, the construction programmes and logistics will need to be coordinated in order to reduce the likelihood of delay to one or both projects.
Cambridge Greenways	Linton Greenways are being delivered as part of CSET1. Sawston Greenway proposals acknowledge that should CSET2 include an off-road cycle/pedestrian route, work undertaken to date could help the development of this element of the CSET2 scheme. Any off-road provision delivered through CSET2 will need to consider how it can address the need for intervention established by the Sawston Greenway whilst ensuring that there is no redundant duplication of infrastructure, gaps in provision or misaligned links between the two schemes. As the schemes are being delivered in close vicinity, provision needs to be made to ensure that the schemes are developed to complement each other and enhance overall connectivity within the area.

1.13. Option selection

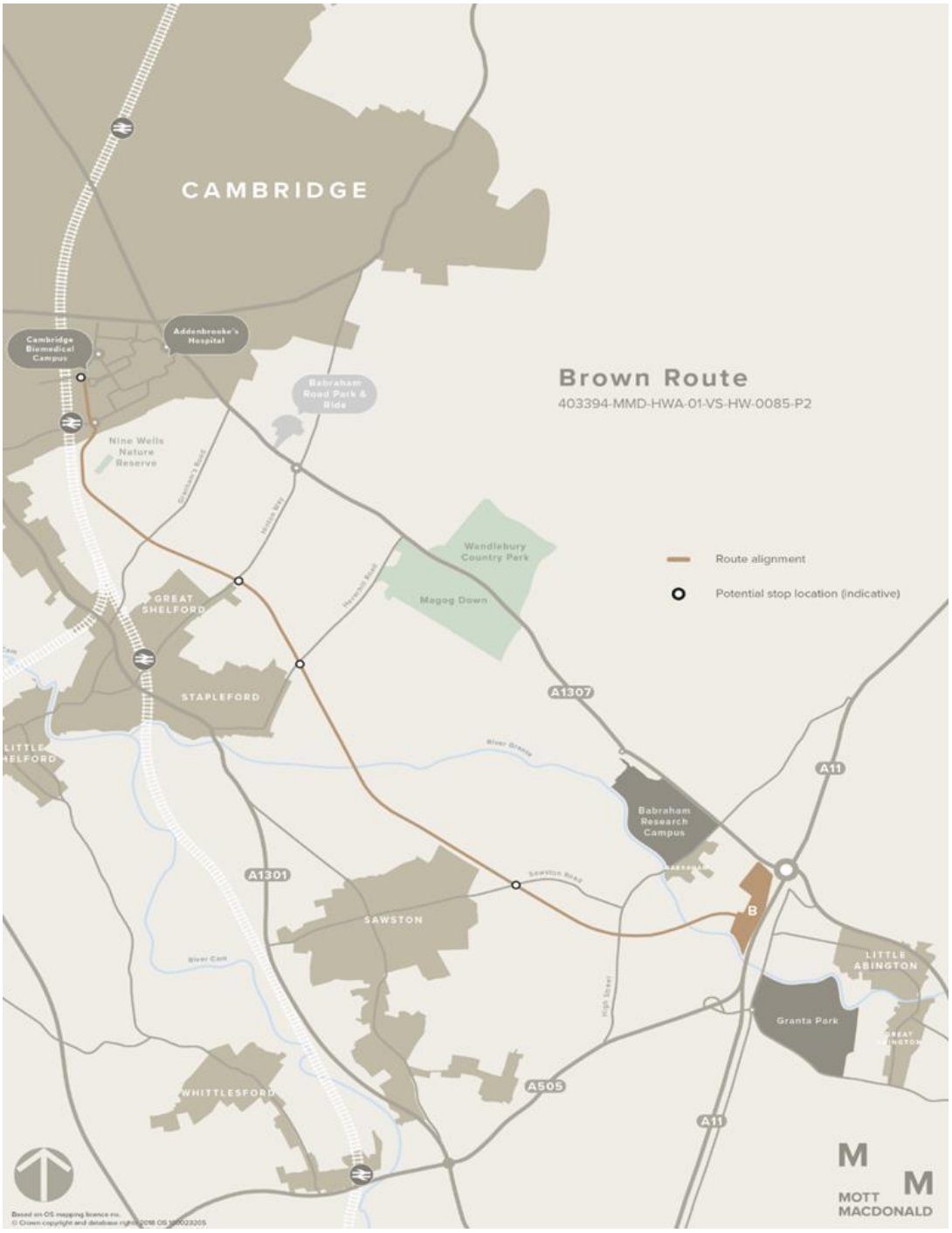
The optioneering to arrive at a preferred option for the proposed public transport route and Travel Hub facility can be found in OBC 2020. A detailed assessment of options appraisal undertaken by Mott MacDonald can be found in Options Appraisal Report (OAR), document reference number 403394-MMD-BCA-00-RE-BC-0024-C.

1.14. Preferred option

Following consideration of all appraisal perspectives and mechanisms outlined in OBC 2020, **Mott MacDonald concluded that the Brown option was the best performing option in terms of both route alignment and Travel Hub site**. Further details of modelling and assessments undertaken to arrive at a preferred option by Mott MacDonald can be found in Options Appraisal Report (OAR), document reference number 403394-MMD-BCA-00-RE-BC-0024-C.

Figure 1-38 illustrates the alignment of the Brown option.

Figure 1-38 - Preferred Option – Brown Option

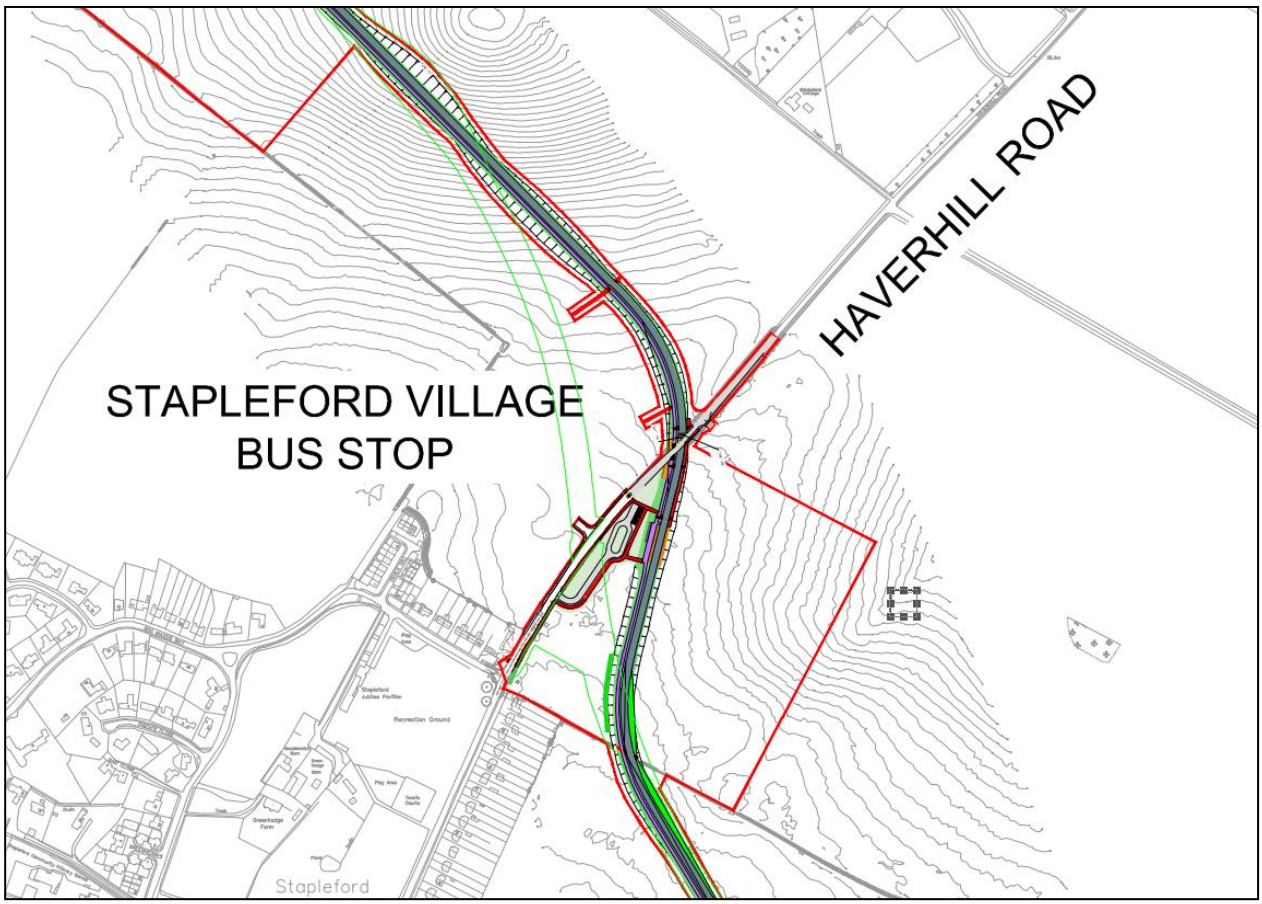


Source: OBC 2020

It should be noted that since the conclusion of route options, the Planning Inspectorate approved a planning application for a retirement village on land adjacent to Haverhill Road. This proposal sits upon the footprint of the brown route and the CSET2 alignment now deviates around the proposed development. Options for

avoiding the development were consulted upon in June 2022. The Figure 1-39 illustrates the change in the alignment of the Brown Option (shown in green colour) post consultation.

Figure 1-39 - Alignment changes in Brown Option post consultation



1.15. Measures of success

Table 1-22 presents a set of measurable performance indicators from OBC 2020 aligned to the scheme objectives and would be assessed after scheme opening. These performance indicators were reviewed and found relevant in line with the scheme objectives and logic map (Figure 1-36). A Monitoring and Evaluation Plan was developed by Mott MacDonald and is included as part of the Management Case. This sets out how outcomes associated with successful achievement of objectives will be measured. The key performance indicators are categorised at two levels - ones which will be monitored at project level and those which will be monitored at programme level as part of the wider City Deal delivery of infrastructure schemes.

The key measures of success relate to improved access to public transport services and journey time reliability on these services, reduction in journey times and congestion, improved safety, higher uptake of walking/cycling and economic growth.

Table 1-22 - Measures of Success

Scheme Sub-Objectives	Performance Indicator	Level at which the benefits are measured	
		Project	Programme
Deliver journey time savings for commuters travelling by public transport to job opportunities in South East Cambridge and central Cambridge.	Reduction in journey times for commuter journeys.	✓	
Improve journey time reliability for public transport users along the A1307 corridor.	Improved journey time reliability for journeys undertaken by public transport.	✓	
Provide the transport infrastructure necessary to sustain economic growth.	Economic growth across South East Cambridge.		✓
Encourage use of sustainable transport modes for journeys through South East Cambridge and into central Cambridge.	Increased uptake of sustainable transport modes; reduced private car usage.	✓	
Enhance quality of life by relieving congestion and improving air quality in South East Cambridge.	Reduction in cases of reported health problems associated with traffic congestion, including respiratory and heart related illnesses.		✓
Relieve pressure at network pinch points.	Reduced pressure at identified network pinch points.	✓	
Deliver a High-Quality Public Transport offer between Cambridge and Haverhill.	Increase uptake in public transport, reduced private car usage.	✓	
Increase frequency of public transport services during peak periods.	Number of public transport services during peak periods.	✓	

Scheme Sub-Objectives	Performance Indicator	Level at which the benefits are measured	
		Project	Programme
Reduce severance for cyclists, pedestrians and equestrians.	Increased number of cyclists, pedestrians and equestrians across the study area.	✓	
Increase uptake of sustainable transport modes for commuter journeys.	Increased number of travel to work journeys undertaken by active travel modes.	✓	
Reduce the number of incidents at identified incidents cluster sites along the corridor.	Reduction in the numbers Killed or Seriously Injured (KSI) along the A1307 corridor.	✓	
Reduce the number of speed related incidents along the corridor.	Reduced number of speed related incidents recorded.	✓	
Improve the safety of crossing movements for cyclists, pedestrians and equestrians to encourage use of these modes.	Increased number of cyclists, pedestrians and equestrians across the study area.	✓	

Source: OBC 2020

1.16. Strategic benefits

The scheme objectives and desired outcomes are outlined in the logic map in Figure 1-36. This sets out the 'theory of change' showing how the scheme will deliver against the desired outcomes. The benefits stream in the logic map (Figure 1-36) represents the wider themes of strategic benefits of the scheme.

CSET2 will alleviate congestion on the A1307 corridor and lead to transport benefits and wider impacts to the area. The scheme will improve access to Cambridge city centre and medical campuses, thus supporting the growth of a space for innovation as well as supporting the objective of accelerating business growth by supporting an internationally competitive growth hub. The scheme will also improve links between key employment centres and housing development along the corridor, and in turn increase the size of the labour market available for employers and employees.

1.17. Risks and constraints

In the design and delivery of the CSET2 works, the project team will need to consider how best to overcome, incorporate or mitigate impacts relating to the constraints set out below.

1.17.1. Route Alignment

1.17.1.1. East West Rail

The preferred East West Rail route alignment is shown in Figure 1-33 in Section 1.6.3.1. The residents of Great Shelford may raise objections to the delivery of both a new major rail scheme (East West Rail) and a new public transport route (CSET2) in their immediate environment within a relatively short space of time. This may have planning implications and cause delays to delivery. Furthermore, in terms of the delivery of CSET, there may be physical or environmental constraints surrounding the delivery of both schemes in what could be an overlapping time frame.

On the basis of consultation, the East West Railway Company are now beginning to develop alignment options within the preferred route corridor. Consideration will be given to station sites, land and connections with local transport networks and the CSET development team is liaising with the East West Railway Company to ensure synergies between the schemes. In this manner the benefits of both schemes can be maximised in a holistic manner that addresses the wider strategic objectives of economic growth and improved transport connectivity in the area.

1.17.1.2. Potential Conflict with Non-Motorised Users

There has been one fatality and one serious incident on Cambridge's existing guided busway between 2019 and 2020. One of these involved a cyclist who, in order to avoid pedestrians swerved and collided with the kerb of the busway. This caused him to be thrown into the path of the oncoming vehicle, which had no ability to manoeuvre to avoid the cyclist. In June of 2019 a bus did leave the tracks in order to avoid a group of cyclists. Collisions with cyclists were also recorded in 2012, 2014 and 2017.

A pedestrian was hit in a collision once in 2015 and another in 2016, whilst in June 2018 a pedestrian was found unconscious on the busway tracks. Such incidents have raised concerns over safety with increasing arguments that cyclist and pedestrian provision should be segregated by barriers or a greater separation distance from the busway as vehicles on the busway reach up to speeds of 60mph, comparable with the speed of a train. These incidents have the potential to constrain the scheme unless solutions for ensuring the safety of non-motorised users can be included in any designs, which may impact land take and potentially cost.

1.17.2. Lack of alternative providers of Optical Guidance Technology

Siemens is the only established provider of optical guidance technology at present providing optically-guided bus operations in other countries. Hence, GCP could be constrained by the lack of competition and this could impact the procurement prices and may reduce any incentive for the single supplier to provide any service enhancements or speciality modifications. However, this constraint could be mitigated by ongoing developments in the vehicle technology and could lead to the availability of alternatives to the Siemens system.

1.17.3. Travel Hub facility

1.17.3.1. Location of Utilities Infrastructure

There is a high-pressure gas main which runs to the west of the A11, in the general area within which the Travel Hub facility is proposed. The pipeline is classified by the Health and Safety Executive as a hazardous installation and is therefore subject to Planning Advice for Developments near Hazardous Installations. This may rule out consideration of some options and narrow the possibilities for the scheme.

1.18. Summary of case for change

1.18.1. Problems, policy fit and objectives

The availability and quality of public transport access in South East Cambridge including connections to city centre, CBC and other key employment sites needs to be improved. In the absence of frequent public transport services, A1307 is the key corridor connecting the South East Cambridge to CBC, city centre and Greater Cambridge. Evidence suggest congestion is observed along stretches of A1307, which is severe in and around the CBC, particularly during peak periods. The **limited public transport options and delays on A1307 constrains access to employment, educational and leisure opportunities** for its current and future residents. The residents in the south-east have access to fewer employment, educational and leisure opportunities when spending the same time travelling on public transport. Constraints to a larger workforce with relevant skill base means that economic growth ambition of Greater Cambridge and its status as a world-leading centre for research, innovation and technology may be compromised if it is not supported by sufficient investment in sustainable transport infrastructure such as the CSET2. Without adequate sustainable alternative options, dependency on emission-intensive modes, such as private cars, will make it challenging for GCP to achieve its net-zero and other environmental targets.

Local Plans and policies show that significant growth is planned in South East Cambridge, South Cambridgeshire and Greater Cambridge, and the current situation is expected to further deteriorate without any intervention. The proposed allocation for major expansion of CBC within the Local Plans is just one of the planned investments, and there are high aspirations and potential for growth of other hi-tech and biotech clusters in Greater Cambridge.

These current and future problems **compromise GCP's ability to deliver its vision** to support and sustain Greater Cambridge as a place to live and work, and therefore GCP needs to deliver a solution to facilitate its continued growth and support the continuation of the 'Cambridge Phenomenon'.

CSET2's scheme objectives align closely with the identified problems and **support GCP's objectives** and policies, and the **wider aspirations of South Cambridgeshire and Greater Cambridge**. This is reflected within the logic map, which illustrates the relationship between the problems, objectives, scheme inputs and outputs, and outcomes of the scheme.

The scheme has a **strong strategic fit with national, regional and local policies** and holds the potential to unlock further undeveloped land across South East Cambridge and beyond, encouraging investment and sustained economic growth.

1.18.2. Scheme options

Following consideration of all of the appraisal perspectives and mechanisms outlined in OBC 2020, **Mott MacDonald concluded that the Brown option was the best performing option in terms of both route alignment and Travel Hub site**.

It should be noted that since the conclusion of route options, the Planning Inspectorate approved a planning application for a retirement village on land adjacent to Haverhill Road. This proposal sits upon the footprint of the brown route and the CSET2 alignment now deviates around the proposed development. Options for avoiding the development were consulted upon in June 2022.

1.18.3. Overall conclusion

There is a clear alignment between the problem of the current transport network in the area: availability, quality, reliability, frequency and pollution; to the objective for economic growth aspirations for the locality, the region and the nation; and to the solutions that are presented through the outcomes of the CSET2 scheme, which meet the policy, strategic and environmental goals.

Adopted and emerging Local Plans have **indicated significant future growth** in South East Cambridge, South Cambridgeshire and Greater Cambridge and emphasised **the strategic importance of employment hubs in** these areas. There is a strong case that the growth is expected to be significantly higher than identified in the adopted and emerging Local Plans. Failure to provide adequate sustainable public transport infrastructure to facilitate the development will stifle future growth.

The delivery of **CSET2 should be seen as essential to supporting the ongoing and future growth of Greater Cambridgeshire**, addressing existing issues across South East Cambridge and beyond, futureproofing the transport network and enabling future transport solutions.

CSET2 can **facilitate the future expansion of the Campus and other high-tech clusters** of **national and international importance** by provision of sustainable public transport connecting the South East Cambridge

and Greater Cambridge to Cambridge city. CSET2 has the potential to **deliver and catalyse future housing and employment growth beyond the Local Plan periods in** Greater Cambridge and support the unleashing of a new wave of ‘Cambridge Phenomenon’.

Appendices

Appendix A. Stakeholder and Consultations

Appendix B. High Growth Assumptions Technical Note (2023)