Greater Cambridge Partnership

NEWMARKET ROAD PARK & RIDE RELOCATION AND EXPANSION

Outline Business Case

OBC
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APPENDICES SEPARATE DOCUMENT

1 INTRODUCTION

1.1 CAMBRIDGE EASTERN ACCESS

1.1.1. The Cambridge Eastern Access (CEA) study area covers eastern Cambridge, with the main access into the city provided by Newmarket Road, consisting of the A1134/A1303 between Elizabeth Way and the Quy Interchange, where it connects with the main Strategic Road Network at A14 Junction 35. Newmarket Road is an important multi-modal radial route, providing access to Newmarket Road Park & Ride (P&R), direct access to key trip attractors, including retail parks and Cambridge United's ground, and onwards to the city centre. It also provides access to local services and amenities for the existing communities along the street including Barnwell, Abbey and Fen Ditton, and directly serves the new community at Marleigh and the planned strategic mixed-use redevelopment of Cambridge Airport.

1.1.2. Promoted by the Greater Cambridge Partnership (GCP), the CEA programme includes a number of vital schemes to improve the attractiveness of sustainable modes of travel as an alternative to using cars when travelling in and through the eastern side of Cambridge. This will lead to an increase in the mode share for sustainable transport due to increased capacity and connectivity, with associated benefits for the existing and emerging local communities and those living beyond it.

1.1.3. In light of the climate emergency declared by the UK government, the CEA programme focuses on schemes that will deliver a step-change in active travel and public transport infrastructure while also supporting placemaking and the regeneration of existing communities and the sustainable development of new communities in eastern Cambridge.

1.1.4. The CEA programme comprises:

- **Phase A**: improvements to walking, cycling and public transport on Newmarket Road as well as the relocation of the existing P&R site;
- **Phase B**: a high-quality public transport route through the Cambridge Airport site; and
- Longer-term upgrades to the Cambridge to Newmarket rail line.

1.1.5. The CEA programme is part of GCP's vision of -

"Creating better and greener transport networks, connecting people to homes, jobs, study and opportunity."

1.1.6. As one of four public transport corridor schemes, the proposals for CEA support GCP's aim to develop a sustainable transport network for Greater Cambridge that keeps people, business and ideas connected as the area continues to grow, and makes it easy to get into, out of, and around Cambridge by public transport, by bike and on foot. Alongside these public transport corridor schemes a number of active travel projects have been designed to create further safe and attractive routes for active travel journeys.

1.1.7. Central to the success of the scheme is the Making Connections and City Access Programme. This includes demand management and enhanced public transport proposals to encourage residents and visitors away from cars to reduce levels of traffic in the city centre and around key employment hubs. In doing so, it will support the reallocation of road space to sustainable modes.

1.2 RELOCATION OF NEWMARKET ROAD PARK AND RIDE

1.2.1. The relocation of the existing P&R site provides the second part of Phase A of the CEA programme. The current site, located on the A1303 Newmarket Road approximately 500m to the west of the Airport Way junction, forms one of five existing P&R sites located on key radial routes into Cambridge to intercept movements from the north, south, east and west of the city respectively.

1.2.2. The GCP are seeking to expand provision of the Newmarket Road P&R site from 895 parking spaces to around 1,750 and relocate it, allowing it to potentially accommodate additional bus services to support the 'Making Connections' public transport strategy. A high -level specification for the proposed P&R facility has been developed by GCP. The key components are:

- Surface car parking including allocated spaces for disabled, parent and child and Electric Vehicle (EV) charging spaces;
- A bus waiting, pick-up and drop-off zone;
- Site access junction(s) and associated bus and vehicle access roads;
- A single storey P&R building to provide a waiting area and welfare facilities;
- Provision of cycle parking and cycle lockers;
- Landscaping and screen planting for visual mitigation; and
- Sustainable Drainage System.

1.2.3. Two Concept Design Layouts have been shortlisted for the expanded and relocated P&R site. These are provided in Appendix A. The scheme is currently programmed to open at the end of 2026 and cost around £31-£33m.

1.3 OUTLINE BUSINESS CASE

1.3.1. A Strategic Outline Business Case (SOBC) for the Cambridge Eastern Access programme was produced in April 2021. The SOBC set out the outline case for enhancing sustainable transport provision in the east of the city to make travel by walking, cycling and public transport more attractive and reduce reliance on the car. The schemes identified in the SOBC included a package of interventions along Newmarket Road comprising of junction improvements, segregated cycle tracks and additional bus lanes combined with the relocation of the existing P&R to a location east of Airport Way.

1.3.2. The SOBC identified that 'doing nothing' is not an option for Newmarket Road, with a congested network undermining the ability to deliver housing and employment growth. Significant enhancements are required to increase public transport capacity, increase the attractiveness of walking and cycling and reduce community severance. The recommendations set out in the SOBC were for a package of interventions to complement the City Access Programme and for a phased approach to be taken.

1.3.3. This Outline Business Case (OBC) addresses the further development of the P&R scheme and presents the strategic and value for money case for the proposals, along with setting out the basis for the funding and delivery of the scheme. In doing so, it sets out the case to support the decision to proceed to the procurement stage of the project.

1.3.4. The OBC has been developed in-line with the Department for Transport's guidance (i.e., Transport Analysis Guidance), and follows HM Treasury's Five Case Model addressing the five dimensions of:

- Strategic
- Economic
- Financial
- Commercial
- Management.

2 STRATEGIC CASE

2.1 INTRODUCTION

2.1.1. This chapter sets out the Strategic Case for relocation of the existing Newmarket Road P&R site as part of the CEA programme. Since the SOBC, significant work has been undertaken to assess the impacts of relocation options and identify a preferred site and access options. This work is described in the following documents, which have informed this Strategic Case, along with the SOBC:

- Newmarket Road Park and Ride Site Selection and Appraisal Report;
- Green Belt Option Assessment; and
- Public Consultation Report.

2.2 SCHEME OBJECTIVES

CITY DEAL PROGRAMME

2.2.1. The Newmarket Road P&R scheme forms one project within the wider programme of sustainable travel schemes being progressed by the GCP funded by the City Deal. The Greater Cambridge City Deal was signed between government and local representatives in 2014. The GCP was formed following the deal made with government and is the local delivery body, responsible for overseeing the delivery of the City Deal and the promotion of local economic growth and development. 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’.

2.2.2. This investment offers funding towards proposed infrastructure in the region to help achieve these aims. To ensure infrastructure investment aligns with this, the Greater Cambridge City Deal Assurance Framework has established key strategic objectives against which projects are prioritised, these are:

- 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.
- 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.

2.2.3. The relocation and expansion of the Newmarket Road P&R scheme effectively meets the strategic objectives of the City Deal:

- The scheme maximises the potential for journeys to be undertaken by sustainable modes by intercepting trips at the periphery of the city and enabling P&R users to complete their onward journey to their destination in Cambridge by sustainable modes (bus and active travel).
- The scheme supports economic growth and levelling-up through providing access to opportunities across Cambridge by ensuring growing employment attractors in the city are accessible and journeys are quick, safe and convenient by improving sustainable mode access between existing communities and key employment sites.
- The scheme reflects the need to deliver substantial travel behaviour change by providing an attractive alternative to the private car and accommodate the resulting additional travel demand for sustainable modes of travel.
- The scheme links effectively into strategic growth sites. It will support the building of sustainable new homes and community infrastructure at the Marleigh development and support the allocated mixed-use development at Cambridge Airport (Marshalls).
- The scheme supports the potential additional bus services as part of the 'Making Connections' public transport strategy.

SCHEME OBJECTIVES

2.2.4. The objectives for the Newmarket Road P&R scheme have been identified in the context of the national, regional and local policies and plans set out in Section 2.5 and in order to address the problems, challenges and opportunities set out in Section 2.6.

2.2.5. In line with DfT advice in '*The Transport Analysis Process'*, they are presented as a hierarchy of objectives comprising:

- **High-level or strategic outcomes** – the desired end state, reflecting the aims and ambition for the area. The scheme will contribute to these, but not always in a direct manner;
- **Specific or intermediate objectives** – representing the direct effects of the scheme; and
- **Operational objectives** – the outputs necessary for the specific objectives to be achieved.

2.2.6. As far as possible, the specific and operational objectives are SMART (specific, measurable, achievable, realistic, and time-constrained, i.e., being deliverable within the timeframe of the project).

Strategic Objectives

2.2.7. Strategic objectives for the CEA programme have been established based upon the key objectives set out in the SOBC, as well as key themes from national and sub-national policy and strategy. The strategic objectives are:

- **Capacity** – Accommodate the projected increase in travel demand associated with housing and employment growth.
- **Connectivity** – Improve accessibility to jobs and opportunities by public transport and active travel modes through a reduction in journey times and increased ease of interchange.
- **Communities** – Creation of safe and attractive communities by reducing emissions and the dominance of traffic, particularly in residential areas.

Specific objectives

2.2.8. Specific objectives for the Newmarket Road P&R scheme have been developed to support the strategic objectives. They reflect the context for the scheme and the criteria identified to inform the P&R site 'area of search'.

2.2.9. Table 2-1 below presents the relationship between the specific objectives and the three strategic objectives, as well as setting out performance measures for the stated objectives.

Table 2-1 - Links between strategic and specific objectives with performance indicators

Objectives	Performance Measures
Capacity – Accommodate the projected increase in travel demand associated with housing and employment growth	
Increase P&R capacity, in particular to accommodate the growth in demand and planned development in east Cambridge	Increase in car and cycle parking capacity at P&R
Connectivity – Improve accessibility to jobs and opportunities by public transport and active travel modes through a reduction in journey times and increased ease of interchange	
Increase access to sustainable 'last mile' modes from locations to the east of Cambridge	Increase in uptake of active modes along Newmarket Road
Communities – Creation of safe and attractive communities by reducing emissions and the dominance of traffic, particularly in residential areas	
Increase the potential for journeys along Newmarket Road to be undertaken by sustainable modes	Increase in catchment for access and onward sustainable travel from the P&R site

2.3 SCOPE

2.3.1. The scope of the Newmarket Road P&R scheme has been defined based on the objectives of the scheme, which have in turn been developed based on the problems and opportunities identified. The scope of the scheme is as follows:

- Surfaced car parking;
- Single storey building (for office, waiting space, toilets etc.);
- Segregated bus access, waiting and boarding and alighting facilities;
- Cycle lockers and covered cycle parking;
- New signal-controlled vehicle access junction on Newmarket Road; and
- Attenuation pond.

2.3.2. The scope of the scheme excludes changes to the current P&R services operating.

2.4 INTERDEPENDENCIES

2.4.1. This section summarises the other programmes and projects that the Newmarket Road P&R scheme may interact with or depend upon. The relocation and expansion of the P&R is closely linked to a number of GCP schemes which are being developed in parallel with this scheme.

CITY ACCESS AND MAKING CONNECTIONS

2.4.2. The City Access programme aims to improve access to Greater Cambridge by introducing measures to reduce congestion, encourage active travel and improve air quality. The City Access programme includes Making Connections, road hierarchy reclassification and the Cycling Plus schemes along key routes into the city. There are clear links between the City Access programme and the Newmarket Road P&R scheme which will improve access by sustainable transport to the city centre and existing and future key employment sites and encourage modal shift.

2.4.3. The Making Connections programme proposes to transform the public transport system in Cambridge, reduce car use and congestion, and improve walking and cycling with revenue funding for the step-change in public transport raised from a road user charging zone. In addition to an improved bus network, for the successful introduction of the Sustainable Travel Zone, the expanded P&R facilities are required at the periphery of the city to accommodate increased travel demand by bus. Integrated with the CEA proposals for Newmarket Road, there will be attractive high-quality infrastructure to encourage people to walk, cycle or use other forms of active travel to access local destinations as well as undertake longer trips by bus, supporting the aims of City Access and Making Connections.

GCP CORRIDOR SCHEMES

2.4.4. As the delivery body for the Greater Cambridge City Deal, GCP is delivering a comprehensive package of sustainable transport initiatives, working with local authority partners to create a world-class network that can meet the needs of the area now and into the future.

2.4.5. Each of the four corridor schemes creates vital links with key employment hubs across the city: from Waterbeach to the north; improving access from the east; providing links to Babraham Research Campus and Granta Park to the southeast; and extending westward toward Cambourne via Bourn Airfield. The corridors are:

- Cambourne to Cambridge;
- Waterbeach to Cambridge;
- Cambridge South East; and
- Cambridge Eastern Access.

2.4.6. The development of infrastructure is well underway, offering better public transport and active travel routes along the four corridors identified as essential to link growing communities to the north, southeast, east and west. For the Newmarket Road P&R scheme to succeed in preventing further growth in vehicular traffic, a city-wide approach to providing attractive alternatives to car use will be required. Hence the extent of the scheme's success depends on the successful implementation of all four of the corridor schemes.

MARLEIGH

2.4.7. The Phase 1 Marleigh access signalised junction has been completed along with a new section of off-road segregated footway and cycleway along the northern side of Newmarket Road between the car centre access and the BP garage.

2.4.8. The proposed P&R scheme will support the Marleigh development by providing cycle parking and bus connectivity within an accessible distance from the development, encouraging residents to travel by active and sustainable modes of travel into central Cambridge.

GREATER CAMBRIDGE GREENWAYS

2.4.9. The Greater Cambridge Greenways project aims to create a walking, cycling and equestrian travel network made up of 12 routes that will link local villages to Cambridge. The planned Bottisham Greenway includes a short section of Newmarket Road between the Airport Way roundabout and the P&R site.

2.4.10. The consultation undertaken in Autumn 2019 showed two route options from the shared-use path on the northern side of Newmarket Road. Option A via the Marleigh access road adjacent to the P&R and Option B direct from Airport Way roundabout (requiring third party land).

2.4.11. The proposals for the Bottisham Greenway are considered as part of the concept and detailed design stages for the Newmarket Road enhancements. The Newmarket Road P&R scheme will enable more car users traveling from the east to 'Park & Pedal' and continue their journey by bicycle along the Bottisham Greenway or improved Newmarket Road to the city centre, and connect to the Chisholm Trail.

CHISHOLM TRAIL

2.4.12. The Chisholm Trail is a new walking and cycling route, creating a mostly off-road and traffic-free route between Cambridge Station and Cambridge North Station. It will link to Addenbrooke's Hospital and the Biomedical Campus in the south, and the businesses and science parks in the north. In all, the full trail provides a 26km route from Trumpington and Addenbrooke's to St Ives. The central section from Cambridge Station to Cambridge North Station is a 3.5km route and interacts with CEA Phase A.

2.4.13. The first phase of the trail is complete and will result in an increase in the number of pedestrians and cyclists accessing Newmarket Road and increase demand for the Newmarket P&R. The P&R will enable car users to transfer to active travel and make use of the Chisholm Trail.

2.5 POLICY CONTEXT

2.5.1. This section provides the policy context within which the development of the Newmarket Road P&R scheme has been considered. It demonstrates that the delivery of the scheme proposals, as part of the overall CEA programme, align with the strategic objectives of policies, strategies and studies at local, regional, and national levels, as summarised in Table 2-2**.**

Key:

- Scheme strongly aligns with strategy and would help to deliver its objectives;
- Scheme would help to deliver the objectives of the strategy;
- Scheme would have only a small positive or neutral impact on the strategic objectives; and
- Scheme would have a negative impact on the strategic objectives.

Table 2-2 Policy Summary and Strategic Fit

Policy	Key Strategic Objectives	Newmarket Road P&R scheme relevance	Fit
National Policy			
Net Zero Strategy (2021)	▪ Decarbonising all sectors of the UK economy to meet net zero target by 2050.	P&R will provide opportunities for transfer to sustainable modes for onward journey into Cambridge from the east, encouraging active travel, reducing reliance on the car and greenhouse gas emissions.	●
Decarbonising Transport (2021)	▪ The pathway to net zero transport in the UK requires the delivery of a world class cycling and walking network by 2040.	The scheme will deliver attractive onward connections by bus and active travel modes for journeys from the east into Cambridge. It will maximise access to sustainable 'last mile' modes supporting local as well as cross-city journeys to be made by sustainable modes.	●
National Planning Policy Framework (updated 2021)	▪ To provide strong, vibrant, healthy communities; and ▪ To contribute to protecting and enhancing our natural, built, and historic environment; including making effective use of land.	The scheme will support the delivery of sustainable developments at Marleigh and the allocated mixed-use redevelopment of Cambridge Airport. It will support a decrease in vehicle emissions due to the reduction in private car trips into the city.	●
Environment Act (2020)	▪ Protection of the natural environment from the effects of human activity; ▪ Protection of people from the effects of human activity on the natural environment; ▪ Maintenance, restoration or enhancement of the natural environment; and ▪ Monitoring, assessing, considering, advising or reporting on environmental protection.	The relocation of the P&R site has the potential to cause minor negative impacts on biodiversity, though the design process will ensure Sites of Special Scientific Interest are protected and seek to create new habitat in other areas.	●
Ten Point Plan for a Green Industrial Revolution (2020)	▪ UK to be the world's number one centre for green technology, laying the foundations for economic growth, delivering Net Zero emissions.	Provision of cycle parking infrastructure and connections with the cycle network at the P&R site will reduce reliance on the car and greenhouse gas emissions.	●

Policy	Key Strategic Objectives	Newmarket Road P&R scheme relevance	Fit
Gear Change (2020)	▪ Safer streets for cycling and walking; ▪ Cycling and walking at the heart of transport decision making; ▪ Empowering and encouraging local authorities; and ▪ Healthier, happier and greener communities.	Delivery of the P&R site and associated cycling facilities will make cycling and walking an attractive last mile alternative for journeys towards the city from eastern Cambridge.	●
Cycling and Walking Investment Strategy (2020)	▪ Cycling and walking to be the natural choice for short journeys, and to increase cycling and walking levels.	Delivery of the P&R scheme will provide existing and future communities in the east of Cambridge with access to a well-connected cycle network.	●
Transport Investment Strategy (2017)	▪ To create a more reliable, less congested and better-connected transport network; and ▪ To support the creation of new housing.	Providing a sustainable alternative to the car for last mile connections into Cambridge, the demands on the road network will be reduced, and the network will be better able to cope with increased demand from planned housing and population growth.	●
Regional Policy			
Cambridgeshire & Peterborough Independent Commission on Climate (2020)	▪ Better air quality and access to nature, to improve health and wellbeing.	Reducing the number of car journeys and intercepting longer journeys from east of Cambridge will reduce levels of greenhouse gas emissions and improve local air quality. The P&R will make transferring to active modes attractive and contribute to better health and wellbeing.	●
England's Economic Heartland Transport Strategy (2020)	▪ Improve local and rural connectivity to support a green recovery from COVID-19 and sustainable growth, whilst reaching Net Zero by 2050.	The scheme will enhance sustainable transport provision in the east of the city, providing surrounding communities with access to the city. Doing so through active travel will reduce greenhouse gas emissions.	●

Policy	Key Strategic Objectives	Newmarket Road P&R scheme relevance	Fit
The Cambridgeshire & Peterborough Local Transport Plan (2019)	▪ Aims to connect all new and existing communities sustainably and provide an integrated rural public transport network.	The P&R provides a hub for a sustainable and active travel network that will connect communities in a sustainable way.	●
Local Policy			
Cambridge Local Plan (2018)	Identifies a need for: ▪ 14,000 new homes; ▪ 22,000 new jobs; and ▪ Areas of Major Change.	The scheme will support the delivery of sustainable developments at Marleigh and the allocated mixed-use redevelopment of Cambridge Airport. It will provide active travel commuting opportunities to key employment sites.	●
South Cambridgeshire Local Plan (2018)	▪ To promote and deliver sustainable transport and infrastructure.	The scheme will provide high quality sustainable transport infrastructure supporting short and longer distance journeys into the city through east Cambridge.	●
Emerging New Joint Greater Cambridge Local Plan	▪ Aims to make Cambridge a place where a big decrease in climate impacts correlates with a big increase in quality of life.	The P&R makes sustainable transport options attractive, therefore, increasing active travel which improves quality of life and will also contribute to a reduction in climate impacts.	●
Greater Cambridge City Deal	Aims to: ▪ Create an infrastructure investment fund with an innovative Gain Share mechanism; ▪ Deliver over 400 apprenticeships for young people; ▪ Provide £1 billion of local and national public sector investment, enabling an estimated £4 billion of private sector investment in the Greater Cambridge area; and ▪ Create 45,000 new jobs.	The scheme will provide high quality active travel and public transport infrastructure to serve local communities and those travelling into Cambridge by connecting them with job opportunities across the city.	●

2.5.2. The scheme is judged to have a very good overall fit with national, regional and local policies and strategies. It will, provide a step-change in connectivity and encourage an increase in walking, cycling and public transport trips. In doing so it will support planned housing growth and development in east Cambridge.

2.5.3. As described in the Option Assessment Report (OAR) for the site[1], the relevant planning policy was used to inform the identification and assessment of potential P&R relocation sites.

2.6 PROBLEMS IDENTIFIED

2.6.1. This section sets out the strategic drivers for the Newmarket Road P&R scheme.

POPULATION GROWTH

2.6.2. The area's population has been growing steadily. From 2011 to 2021, South Cambridgeshire has seen an increase of 8.9% in its population and the population in East Cambridgeshire has increased by 4.6%. The rate of population growth anticipated for Cambridgeshire necessitates improving the transport infrastructure to ensure that congestion and capacity issues do not constrain growth and force individuals to consider relocation.

2.6.3. The expansion of the P&R site, advantageously located on the A14 and connecting villages and settlements to the east of Cambridge to the city centre, will provide the additional parking capacity necessary to accommodate the shift from private car to sustainable means. Providing transport infrastructure which is future-proofed to support the requirements of future generations will ensure a successful and sustainable future for Cambridgeshire.

ECONOMIC CONTEXT

The Cambridge Economy

2.6.4. Cambridge is home to one of the fastest growing economies in Europe and is renowned for being a leading centre for research, innovation and technology. As such, the 'Cambridge Phenomenon' is a term that describes the thriving high-tech and biotech industries. The current vision of the GCP is to '*unleash a second wave of the Cambridge Phenomenon, with the aim of securing sustainable economic growth and quality of life for the people of Cambridge and South Cambridgeshire.'*

2.6.5. Rapid business creation and growth associated with the 'Cambridge Phenomenon' has created jobs and prosperity in Greater Cambridge, and for the region as a whole. The city embodies the key foundations of the National Industrial Strategy for the UK to become the world's most innovative economy and has built a reputation as an attractive location to invest and expand businesses, bringing businesses to Cambridge, with the birth of 5,130 new businesses in 2019.[2]

2.6.6. The Cambridgeshire and Peterborough Local Industrial Strategy[3] indicates that the growth felt in Cambridgeshire has not been felt in the same way across the whole region. The economy of Greater Cambridge has been performing most strongly, with benefits felt in the market towns of Ely and St Ives. The east of Cambridge is however not experiencing the same benefits, where wages are considerably lower, which is also reflected in the indices of multiple deprivation.

[1] WSP (May 2022) Newmarket Road Park and Ride Site Selection and Appraisal Report
[2] https://cambridgeshireinsight.org.uk/economy/
[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/818886/Cambridge_SINGLE_PAGE.pdf

2.6.7. The Newmarket Road P&R scheme will improve inclusive affordable transport connectivity for these communities by providing opportunities to transfer to sustainable modes. Furthermore, the scheme will encourage mode shift, tackling congestion and improving journey times between east Cambridgeshire and key centres of employment and opportunity in Cambridge city centre, improving access to jobs and training.

Employment and Skills

2.6.8. As previously outlined, Cambridge is a key economic centre for research, innovation and technology, and is strategically important for attracting international investors into the UK. This relies heavily on Cambridgeshire continuing to offer strong links between businesses, training campuses and housing developments.

2.6.9. The centre of Cambridge is home to the largest share of jobs in Cambridgeshire, with a ratio of 1.2 jobs to every working age resident.[4] Many of those employed in and around Cambridge live in surrounding areas and commute into the city, as is presented in Figure 2-1.

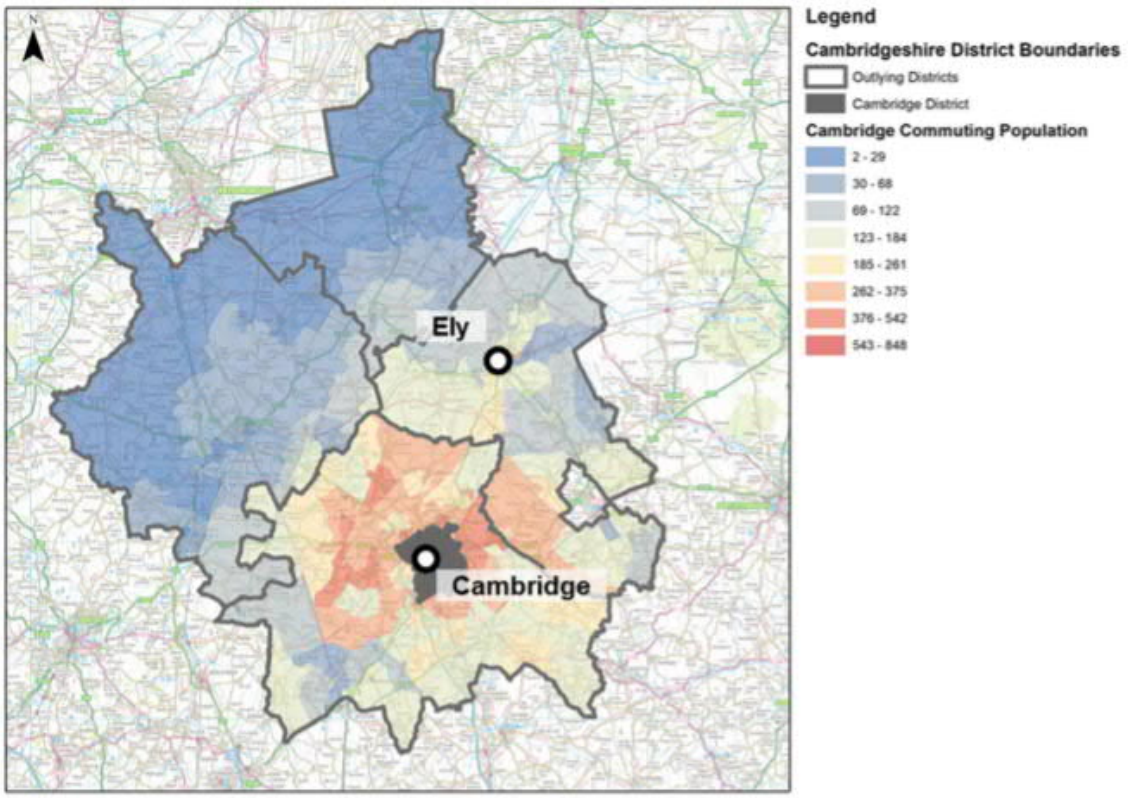
2.6.10. Due to the effects of the COVID-19 pandemic, employment growth in the Greater Cambridge area has slowed from 4.7% in 2018-2019 to 2.3% in 2019-2020.[5] Whilst growth rates have slowed, they remain high and are varied across sectors. For example, sectors involved in supporting responses to COVID-19, such as Life Sciences, and those which have benefitted as a consequence of the increase in remote communications, such as Information and Technology. Other services such as the hospitality industry have however continued to suffer.

2.6.11. As a county, Cambridgeshire has a larger proportion of people working in professional, scientific and technical activities compared with the national average. Increased employment within these sectors presents the opportunity to further support the local and regional economies. Therefore, attracting and retaining more jobs and employment opportunities through an efficient and effective transport network is important.

2.6.12. The P&R scheme presents the opportunity to accommodate commuter demand and provide an attractive alternative mode of transport to private car travel, reducing private vehicle trips into the city from the east. The scheme provides the necessary infrastructure to ensure accessibility to employment centres within the city and along the Newmarket Road corridor.

[4] NOMIS data, 2018
[5] https://www.greatercambridge.org.uk/asset-library/Future-Investments-Strategy/Research-and-Evidence/CBR-GC-Employment-Update-February-2021.pdf

Figure 2-1 - Population Commuting into Cambridge



Source: Ordnance Survey/NOMIS

SPATIAL DEVELOPMENT

2.6.13. There is substantial residential and employment growth allocated and currently being built-out (Marleigh) along Newmarket Road. The Cambridge and South Cambridgeshire Local Plans cover the period of 2018-2031. The Cambridge Local Plan identifies the need for 14,000 additional homes and 22,000 jobs and the South Cambridgeshire Local Plan identifies 22,000 additional jobs and 19,500 new homes. Both Local Plans identify Cambridge East, a strategic development site that will redevelop the Airport site to provide new homes and jobs. The Cambridge East site also includes potential development of land north of Newmarket Road covering the existing P&R site.

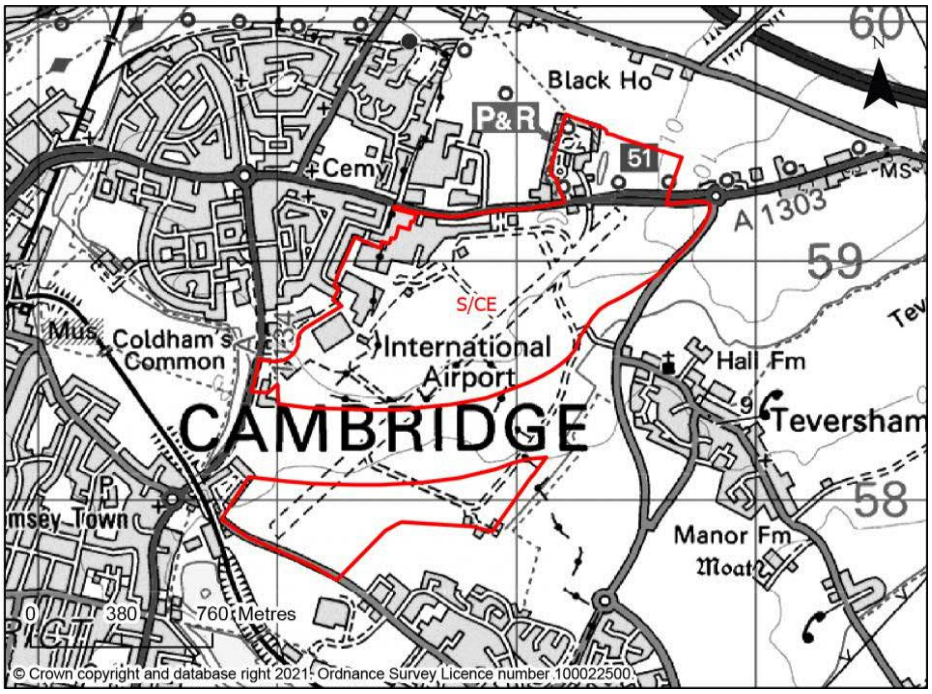
2.6.14. The Joint Greater Cambridge Local Plan covering Cambridge and South Cambridgeshire is currently in development. This Local Plan[6] is anticipated to allocate land for a major new eastern quarter for Cambridge, enabling development of the airport site which was safeguarded for longer term development in the 2018 adopted Local Plans:

- For approximately 7,000 homes, including affordable homes, and 9,000 jobs on the 'safeguarded land' identified in the 2018 Local Plans at Cambridge Airport. It is anticipated that around 2,900 homes will be delivered by 2041.

[6] Greater Cambridge Local Plan - First Proposals

- Delivery of the full development will require the CEA programme of schemes to be in place to provide high quality public transport connections, with the amount of development that can come forward ahead of the scheme to be determined.
- Development is also reliant on the successful implementation of a Trip Budget approach, to ensure that the level of vehicle trips is limited to an appropriate level for the surrounding road network.

Figure 2-2 Map showing boundary of proposed Cambridge East allocation



2.6.15. It is clear that substantial development is allocated along Newmarket Road, including an 'Eastern Quarter' at Cambridge East in combination with 1,300 dwellings being built-out and occupied at Marleigh. In order to deliver sustainable and well-connected new communities, high quality and attractive active travel and public transport infrastructure needs to be available from day one. The Newmarket Road P&R scheme will ensure that it is convenient to make active travel trips for those in these new communities as well as enabling existing travellers to switch to sustainable modes of travel for local and city-wide destinations.

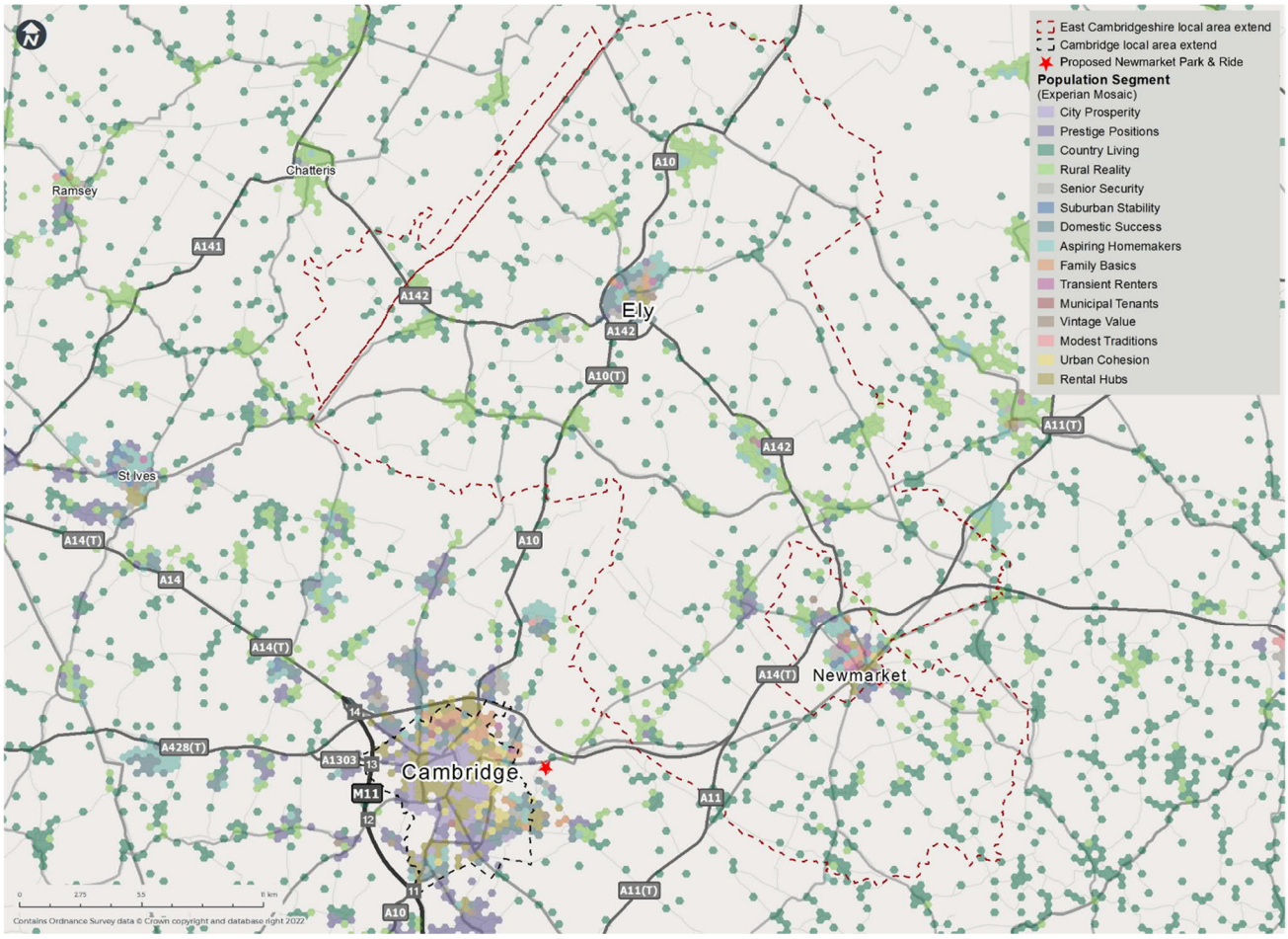
2.6.16. In addition to the allocated development at Cambridge East and Marleigh, masterplans are being developed for the comprehensive redevelopment of The Beehive Centre shopping park and Grafton Centre at the western end of Newmarket Road. The Beehive Centre could potentially be redeveloped as a new life sciences or technology site with retail areas and landscaped gardens. The Grafton shopping centre site has also been identified as a major opportunity for redevelopment and re-purposing. In addition, the East Barnwell masterplan is being progressed by Cambridge City Council which includes a new local centre surrounding the Newmarket Road Barnwell Road junction.

2.6.17. Both these major redevelopment opportunities at the Beehive Centre and Grafton Centre and the East Barnwell Masterplan will be directly supported by the Newmarket Road P&R scheme, providing attractive sustainable transport options to enable future residents, workers and visitors to access these opportunity sites.

SOCIAL CONTEXT

Community Characteristics

Figure 2-3 Mosaic Groups



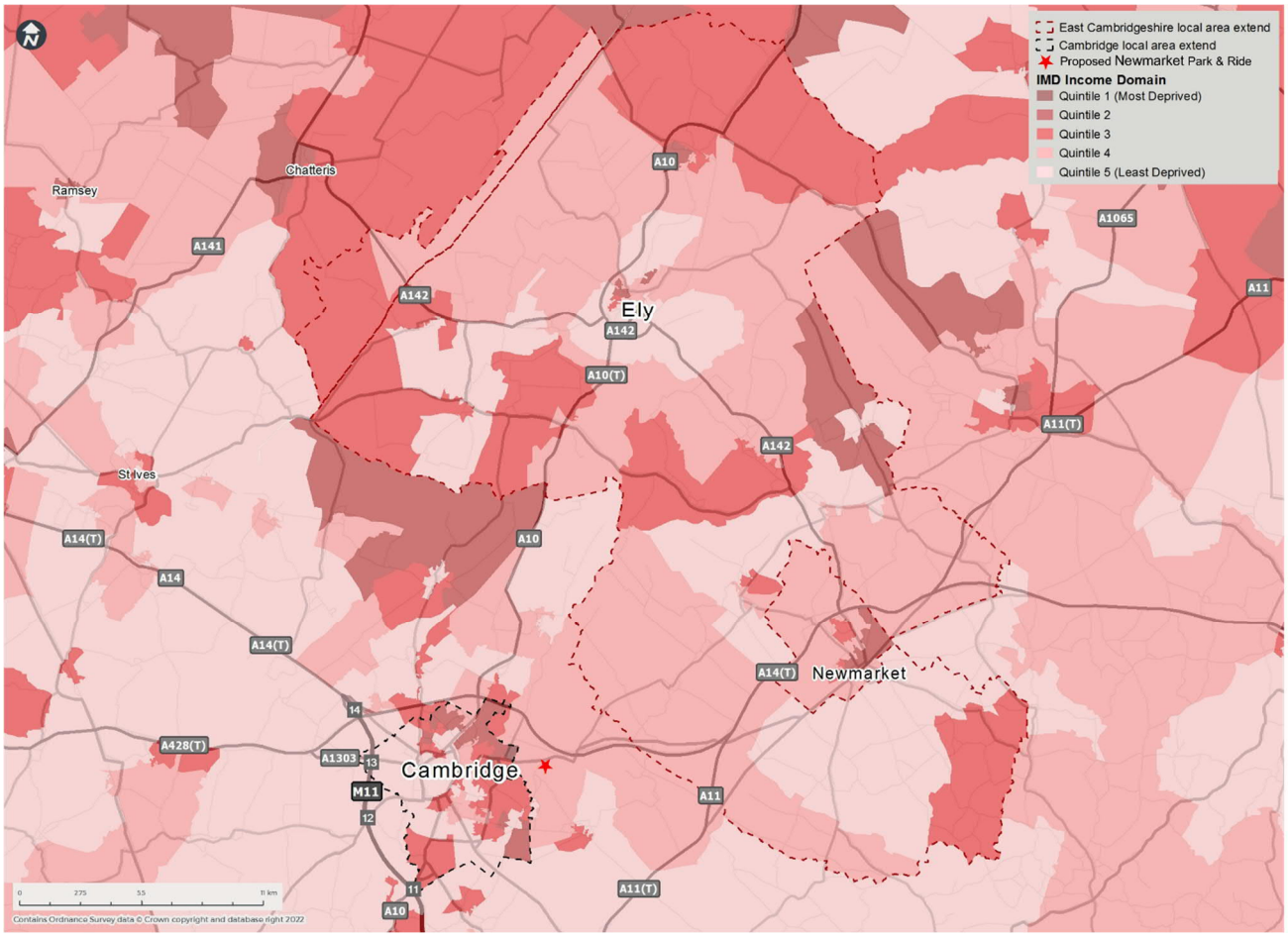
2.6.18. Analysis has been undertaken of Mosaic data (collected by Experian), a cross-channel consumer classification system which segments the population into 15 groups based on their consumer behaviour. Figure 2-3 indicates that the majority of areas to the north-east of Cambridge, from which the P&R site intercepts trips from, have a majority of 'Country Living' or 'Rural Reality' population segments. Both of these population segments have a reliance on car ownership. The 'Rural Reality' population segment is lower income households with a preference for more affordable modes of transport including bus. Given these propensities, expansion of the P&R site, in addition to the sustainable and active travel improvements provided by the Newmarket Road scheme, has the potential to encourage more future trips to be switched to sustainable modes at the P&R site.

Deprivation

2.6.19. The Index of Multiple Deprivation provides an understanding of the comparative wellbeing of an area based on income, employment, health and barriers to housing provision. Within the catchment of the P&R site there are a number of local areas that are categorised as being the most deprived nationally (i.e., in quintiles 1 and 2). As shown in Figure 2-4, these include MSOAs in Newmarket, Burwell, Soham and Bury St Edmunds

2.6.20. Expansion of the P&R facility, combined with the bus and active travel connectivity improvements of the Newmarket Road scheme, will increase opportunities for transferring to active and sustainable modes. This will support the affordability of transport access to jobs and education in Cambridge for the residents of these areas who are already suffering from low levels of income.

Figure 2-4 - Indices of Multiple Deprivation

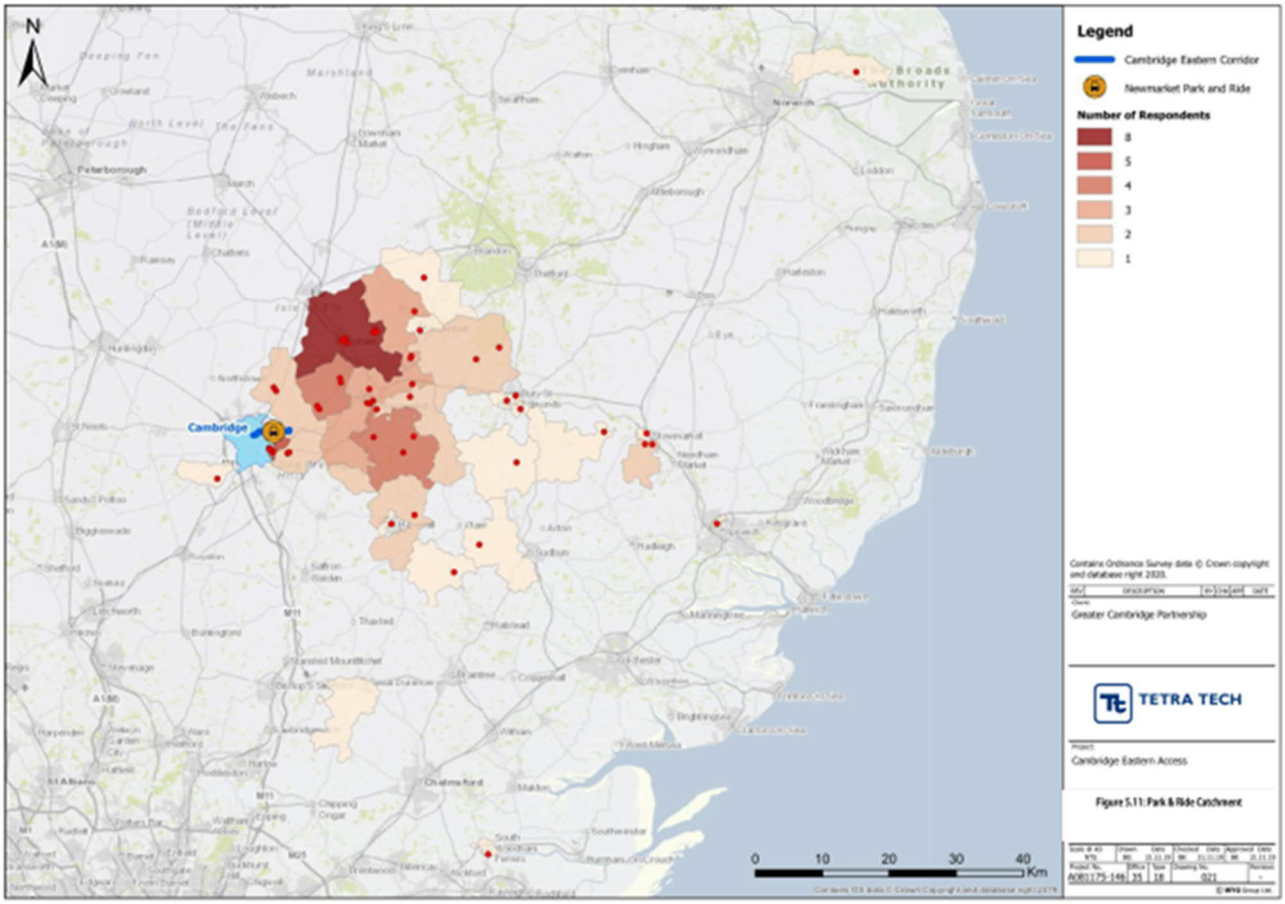


TRAVEL PATTERNS TO CAMBRIDGE

Newmarket Road P&R Users

2.6.21. The use of the P&R was surveyed in January 2020. Post code data collected and highlighted in **Error! Reference source not found.** demonstrates the extent of the hinterland the site serves, stretching as far as Ipswich and Essex, as well as more local towns such as Soham, Bury St Edmunds, Newmarket and Haverhill.

Figure 2-5 Park & Ride catchment (Source: 2021 SOBC)

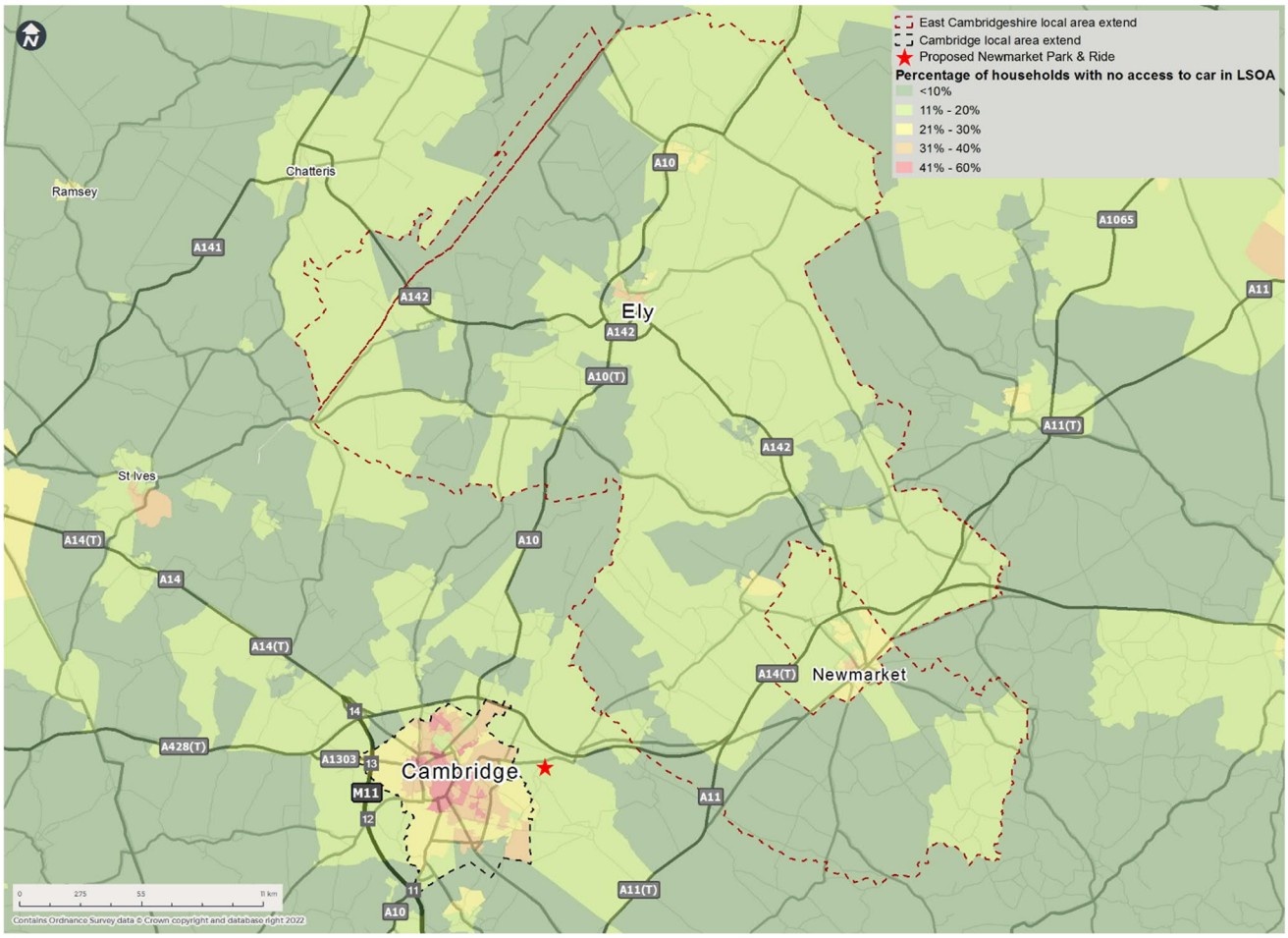


Car Ownership

2.6.22. As indicated in Figure 2-6, most MSOAs in the catchment area of the existing P&R have high car dependency.

2.6.23. High car dependency, longer travel distance from Cambridge and a lack of direct and reliable public transport connectivity from these catchment areas indicates that there will be continued demand when the relocated and expanded P&R is opened.

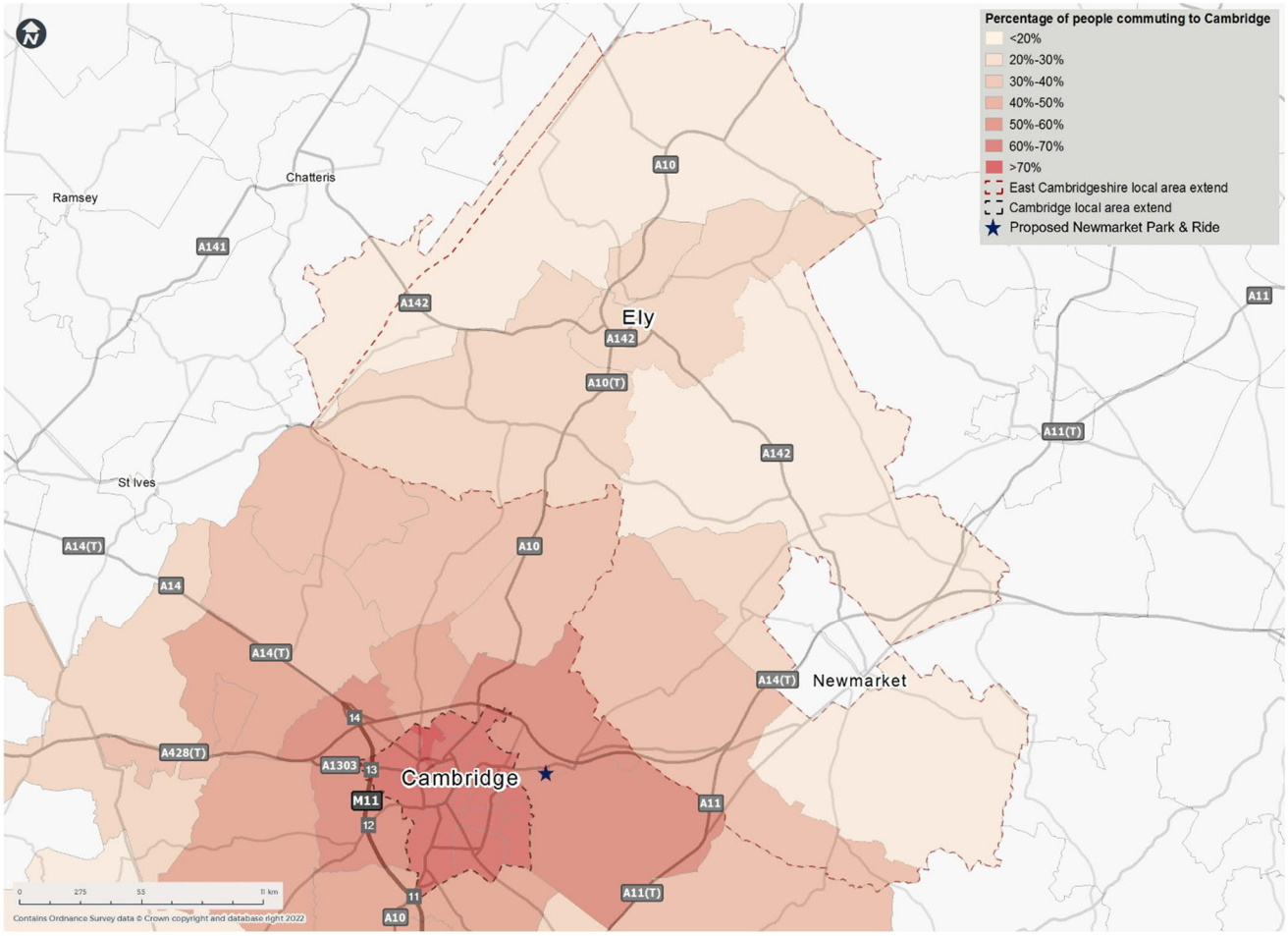
Figure 2-6 Car Ownership



Commuting to Cambridge

2.6.24. The city of Cambridge provides a key source of employment for the settlements in South Cambridgeshire and East Cambridgeshire and continues to grow its employment base, as presented in Figure 2-7. On average, 21% of the population of East Cambridgeshire travel to work in Cambridge and 36% from South Cambridgeshire work in Cambridge. To accommodate the growth of Cambridge as an employment hub provision of adequate transport infrastructure is necessary.

Figure 2-7 People Commuting to Cambridge from East and South Cambridgeshire



2.6.25. The majority of commuters to Cambridge from the MSOAs east of Cambridge commute by car. 70% of commuters from East Cambridgeshire traveling to Cambridge for work use a car, with the A14 and A1303 providing the key radial routes into the city from the east. The Newmarket Road P&R will intercept car journeys into the city from the east, encouraging sustainable modes for the last section of journeys into central Cambridge. It will also provide connections with the active travel links along Newmarket Road, integrated with the Bottisham Greenway and Chisholm Trail which connect to retail parks, industrial estates, employment sites and Cambridge United's stadium.

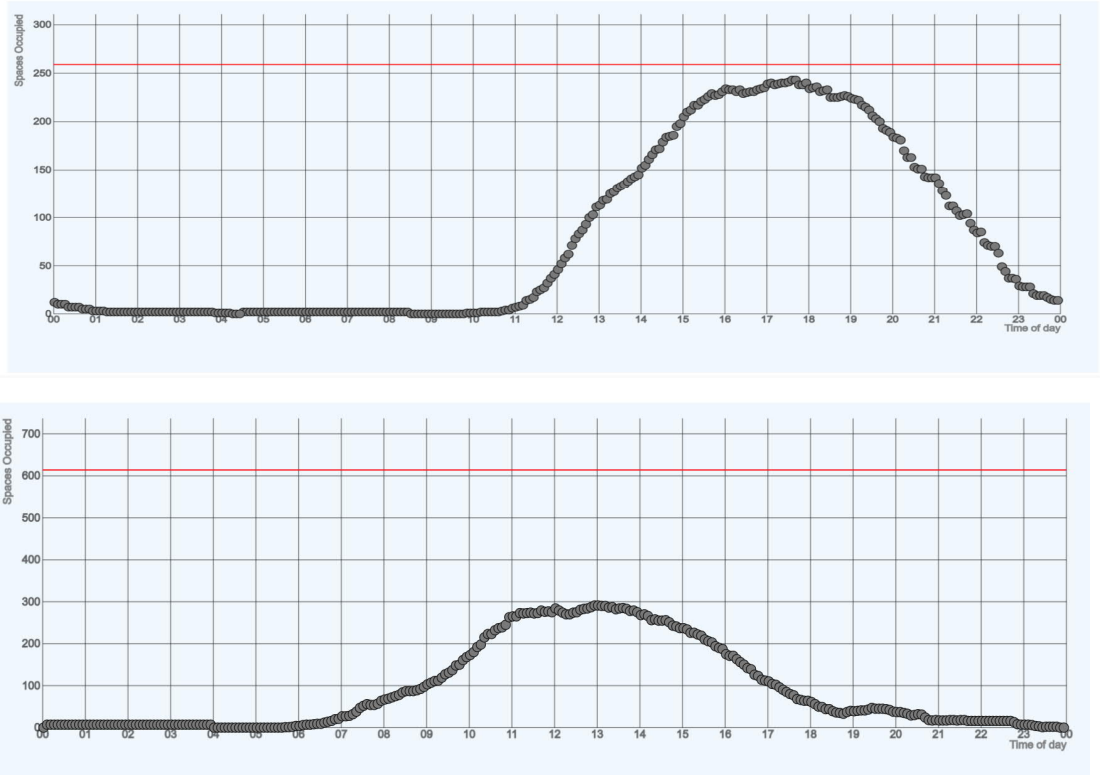
Other trips

2.6.26. Figure 2-8 presents the P&R demand during a typical weekday for the front (top) and rear (bottom) car parks[7]. It indicates that the demand builds through the day, but notably for the front car park it

[7] Source: https://smartcambridge.org/parking/list/ (data for Wednesday 1 June 2022)

starts increasing significantly around noon, with the car park reaching capacity in the late afternoon / evening. The timing of this peak reflects use of the P&R by not just commuters in the morning peak, but also shoppers and visitors later in the day.

Figure 2-8 Park & Ride Demand on a Typical Weekday - (Top – front car park, Bottom – rear car park)



TRANSPORT CONTEXT

Current challenges

2.6.27. The SOBC identified the need to address the inadequacies of the transport system into Cambridge from the east. Reliance on the car results in delays and congestion for commuters and has significant adverse impacts on local communities and the environment. The main points to note that relate to the Newmarket Road P&R scheme include:

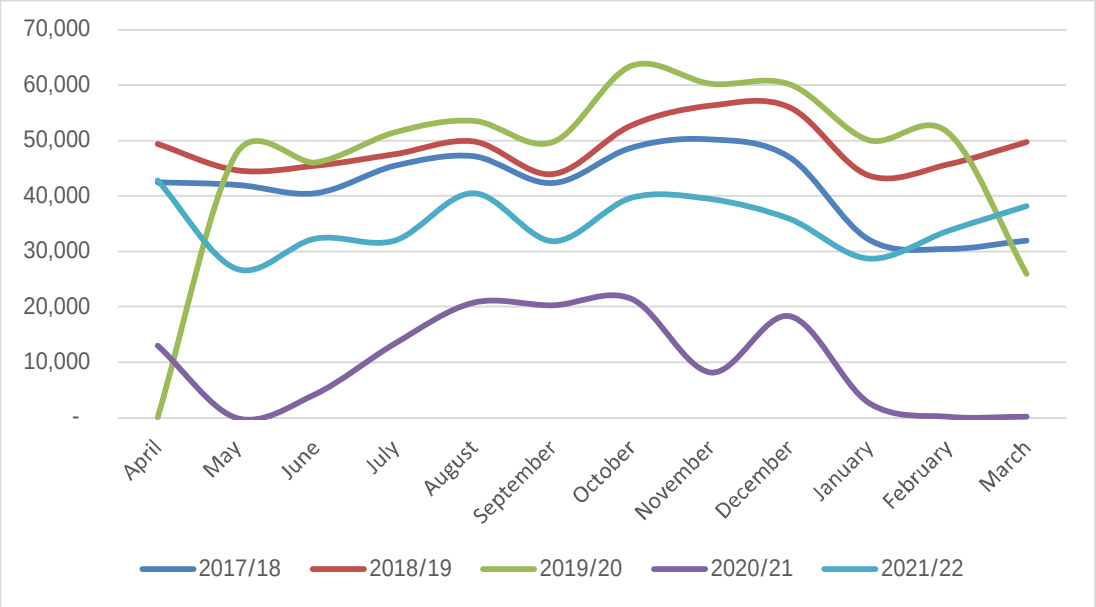
- The existing Newmarket Road P&R intercepts trips travelling from the east of Cambridge, including Newmarket, Bottisham, Burwell, Soham and Bury St Edmunds. Given the travel distances involved there will continue to be demand in the future to be able to access the relocated P&R by car.
- Junction 35 of the A14 provides access to the A1303 from all directions. The A14 is a key strategic route to Cambridge, providing direct access to Newmarket, Bury St Edmunds, and Fordham and Soham via the A142. More local access routes from Bottisham, Burwell and the Swaffhams also converge on Junction 35 of the A14.
- An increase in travel demand and rising car ownership has generated levels of congestion that are constraining economic growth in the region. Providing attractive alternatives that enable modal shift will support productivity and growth by allowing businesses to access wider labour markets.
- Traffic congestion has contributed towards Cambridge experiencing problems with poor air quality. Local residents along the corridor suffer as a result of the impact on air quality and noise.

- Encouraging modal shift from car to active modes and bus is envisaged as a principal method for supporting sustainable growth, improving inclusive access to jobs and opportunities, and creating well connected communities that offer a good quality of life.

Existing Newmarket Park & Ride

2.6.28. Figure 2-9 highlights how the popularity of the site grew on a month-by-month basis between 2018 and 2019 (the top three lines), peaking at over 63,000 vehicles using the site in October 2019, up from almost 53,000 in the same month in 2018. Following the impact of COVID-19 in 2020/21, P&R demand has increased substantially and is returning to pre-COVID levels.

Figure 2-9 Patronage of Newmarket Road Park & Ride



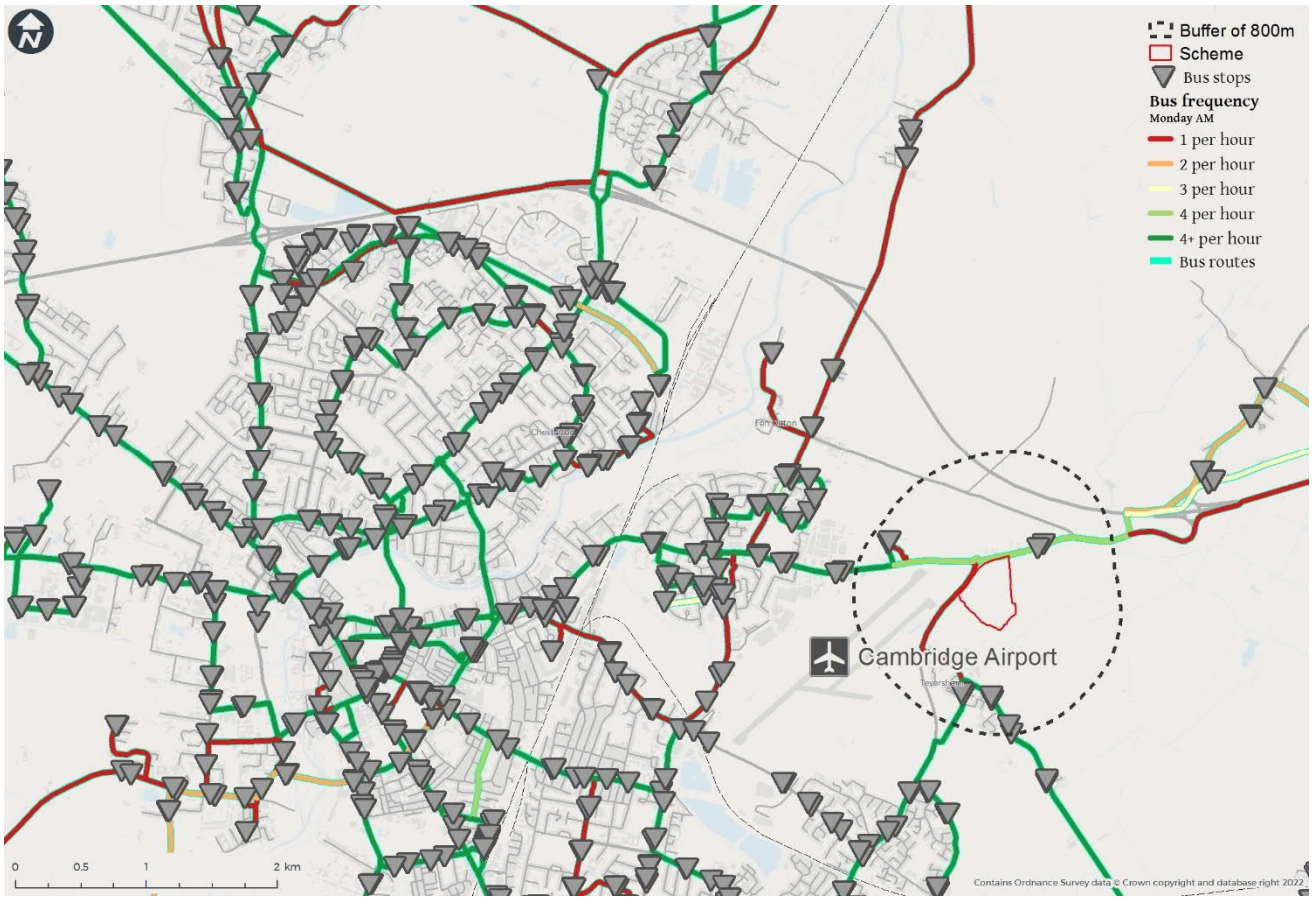
Bus Network

2.6.29. The Newmarket Road P&R bus services operate a high frequency service as follows:

- Every ten minutes on Mondays to Saturdays.
- Every 15 minutes on Sundays.
- Routeing along Newmarket Road to the Grafton Centre (via Newmarket Road) and central Cambridge (via Emmanuel Road) and the central Drummer Street bus station. Services stop at Marshalls, Cambridge United (match days only), Cambridge Retail Park, the Grafton Centre and Drummer Street.
- Current journey time to The Grafton is approximately 10 minutes and to Central Cambridge is approximately 17 minutes.

2.6.30. Along Newmarket Road, sections of the corridor are served by buses every four minutes, representing excellent provision for both residents, employees along the corridor and those using the P&R. Figure 2-10 illustrates the bus network.

Figure 2-10 - Bus Service Frequencies – Newmarket Road



2.6.31. The existing frequent bus services provide inclusive access for residents of Barnwell to city centre destinations and the Newmarket Road P&R service is a key component of the city transport strategy, intercepting car trips from the east and providing an attractive public transport option for the 'last mile' journey into the city.

2.6.32. Two of the main factors users often cite in terms of their requirements from public transport provision are the speed of the journeys and the reliability of the journey times. For the SOBC, journey time data provided by Stagecoach was analysed. It offers an insight into where and when delays occur on the No.11 and No.12 services, between the city centre and Cambridge Airport, together with the P&R service between the P&R site and the city centre.

- The most acute delays in journey time are on outbound bus services in the PM peak, with average journey times 7 minutes longer than those in off-peak conditions.
- Journey times are consistently slower in the PM peak than the AM peak for inbound and outbound travel.
- Inter-peak services are also slower than those in the AM peak.

2.6.33. This evidence demonstrates that Newmarket Road is an important bus route, accommodating frequent city and P&R services. The route will also be a key bus corridor into the city for the Making Connections future bus network. The P&R facility plays a crucial role in creating the infrastructure to make bus journeys attractive by intercepting car journeys causing congestion along the corridor.

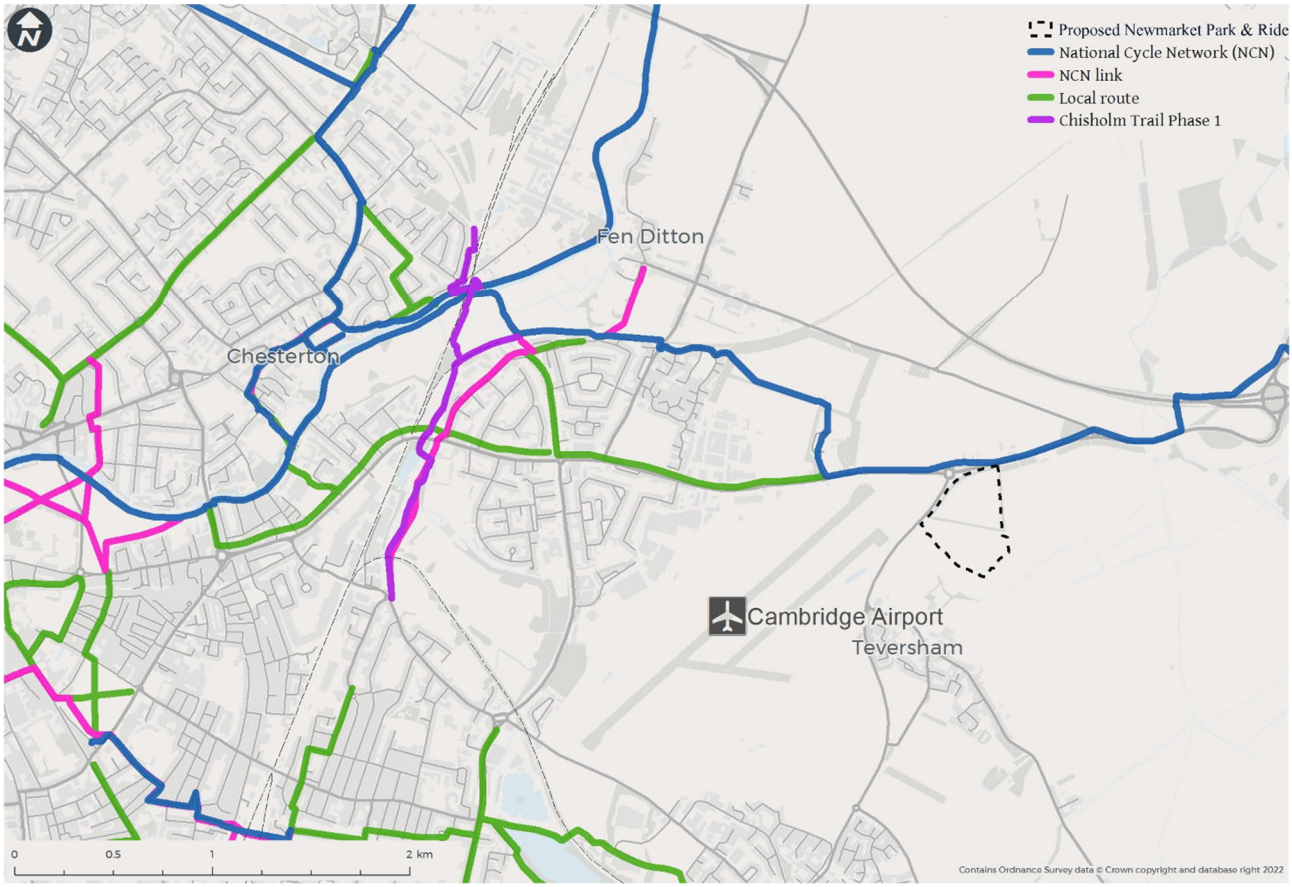
2.6.34. Mode shift at the P&R site will be made still further attractive by the journey time saving resulting from the Newmarket Road scheme improvements which involve provision of new and improved facilities for buses and bus users, aligning with the National Bus Strategy and Bus Back Better:

- Provision of bus lanes where road reallocation space allows;
- Bus priority at signals; and
- Floating bus stops where road space allows.

Cycling Context

2.6.35. Figure 2-11 shows the existing cycle routes within the study area. The National Cycle Route 51 currently routes along Newmarket Road, through the P&R site, across Stourbridge Common and along Riverside, parallel to Newmarket Road. This provides an attractive, low-trafficked route into north Cambridge as well as towards Cambridge city centre. In December 2021, Phase 1 of the Chisholm Trail was opened. This section of the trail connects Cambridge North station to Coldhams Lane via the new Abbey Chesterton Bridge and Newmarket Road underpass.

Figure 2-11 Existing Cycle Routes



2.6.36. The high vehicle flows along Newmarket Road combined with the lack of high-quality infrastructure result in the road being an unattractive route for east-west cycling as well as for north-south movements between the surrounding residential communities and longer-distance movements from Coldhams Lane and Barnwell Road.

Newmarket Road Phase 1A Walking and Cycling Improvements

2.6.37. As described above, the current walking and cycling infrastructure along Newmarket Road connecting the P&R site to Cambridge city centre is unattractive. However, the Newmarket Road scheme Phase 1A will deliver improvements to the active travel infrastructure by providing LTN 01/20 compliant high-quality infrastructure for pedestrians and cyclists between Elizabeth Way and Airport Way, including:

- Consistent, direct, safe, comfortable, attractive and segregated footways and cycle tracks;
- At-grade and direct pedestrian and cycle crossings; and
- Infrastructure that supports east-west movements as well as connects and supports north-south movements across Newmarket Road.

2.6.38. The above improvements will create an attractive active travel connection to Cambridge from the P&R site and play a crucial role in boosting demand for 'Park & Pedal' or 'Park & Stride' facilities.

Road Safety

2.6.39. Personal injury accident (PIA) data obtained from Cambridgeshire County Council has been analysed for the Newmarket Road corridor and is presented in Figure 2-12 below. Between 2016 and 2021, there have been 119 recorded traffic accidents. One accident was classified fatal, 21 serious and 97 resulting in slight severity injuries.

2.6.40. The P&R scheme will encourage mode shift from car towards sustainable modes resulting in reduced vehicle movements into the city, making the road safer for cyclists and pedestrians.

Figure 2-12 Personal Injury Accidents – 2016-2021

ENVIRONMENTAL CONTEXT

Climate Emergency

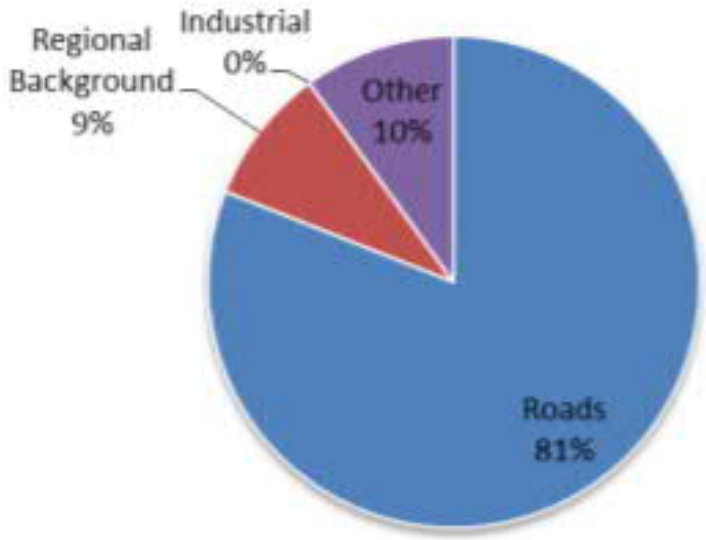
2.6.41. Cambridge City Council passed a motion to declare a climate emergency in 2019 and as a result committed to a carbon reduction target of making Cambridge carbon neutral by 2030. In order to keep to 1.5 degrees Celsius or less global warming, Cambridge was allocated a carbon budget of 4.6 million tonnes of carbon dioxide (MtCO2) from energy only for the period of 2018 to 2100. Limiting total carbon emissions in this period to this amount would enable Cambridge to achieve its share of the current national carbon budgets set by the Climate Change Act. 4.2 MtCO2 of this budget would be for the period from 2018 to 2032, during which time carbon emissions would need to fall rapidly.

2.6.42. The Newmarket Road P&R will support the decarbonisation of the city's transport network by providing the infrastructure needed to encourage modal shift from car to sustainable modes of travel.

Air Quality

2.6.43. Central Cambridge is located within an AQMA, though this does not extend as far as the P&R site. The relocation and expansion of the P&R will reduce car trips into the city, reducing associated air quality impacts along Newmarket Road by intercepting car traffic resulting in modal shift to bus, walking and cycling travel modes. There may also be some potential localised benefits west of Airport Way, where traffic accessing the current P&R site will relocate eastwards. Figure 2-13 demonstrates the importance of encouraging modal shift away from the car, as 81% of NOx emissions are from road traffic.[8]

Figure 2-13 - Source of NOx by source type (CERC 2017)



[8] https://www.cambridge.gov.uk/media/3451/air-quality-action-plan-2018.pdf page 30

Noise

2.6.44. While no Noise Important Areas are within the scheme boundary, two small NIAs are present on Newmarket Road. Additionally, Teversham has a number of sensitive residential receptors. Traffic noise can be a significant contributor to ambient noise levels. By delivering the necessary infrastructure and facilities for mode shift the P&R scheme can be expected to contribute to reducing noise levels in and around Cambridge.

Landscape

2.6.45. Landscape reflects the relationships between people and places and the part they play in forming the setting to our everyday lives. At the eastern edge of Cambridge, the landscape is quite open making visibility a key issue and a strong influence on design and mitigation. The relocated and expanded P&R site will lie largely on farmed land and within the Green Belt. There are no designated or protected landscapes within the site.

Historic Environment

2.6.46. There are five Grade II listed buildings and one Grade II* listed building in Teversham in the vicinity of the scheme. The closest listed buildings are greater than 450m away from the site. There are no known archaeological features at the site. However, Roman and Anglo-Saxon features have been identified in the vicinity.

Biodiversity

2.6.47. GCP is committed to 20% Biodiversity Net Gain, as outlined in the Cambridge Local Plan. The Local Plan also details the importance of the maintenance of the Green Belt surrounding Cambridge, which will contribute to the biodiversity of the region. The closest designated site to the P&R site is Wilbraham Fen SSSI. There is also a reedbed habitat likely to be of SSSI quality at Teversham Fen.

Water Environment

2.6.48. The nearest main river to the proposed site is Quy Water. The Quy Water is classified under WFD as having ‘moderate ecological status’ and ‘moderate physicochemical status’, with quality element phosphate being assessed as ‘poor’. The watercourse was assessed under WFD Classification Cycle 2 (2013-2019) as not supporting a good ‘hydrological regime’ (i.e., entire state of water movement), though it should be noted that the hydrological regime has not been assessed since. The P&R site is in a Flood Zone 1 area which means there is a low probability of flooding.

2.7 IMPACT OF NOT CHANGING

OVERVIEW

2.7.1. This section provides a summary of the future situation and the impact of not changing and implementing the proposals for relocating and expanding the Newmarket P&R. It addresses the future population, housing, employment, implementation of City Access Programme and transport related context and consequences.

Population

2.7.2. Cambridgeshire's population has grown steadily with the rate of 8.9% in the 10 years leading up to Census 2021[9] being higher than the 6.6% increase for England. This significantly faster rate of growth can be ascribed to people coming from elsewhere in the UK as well as overseas, attracted by the high skilled employment opportunities. Statistics[10] indicate significant growth over the next 15 years. By 2036 Cambridgeshire's population can be expected to reach 788,710, an increase of nearly 20% when compared to 2016.

2.7.3. With Cambridgeshire's population set to grow, overspill from central Cambridge is resulting in increasing populations in settlements in the hinterland of Cambridge, placing increased pressure on the city's radial routes. This necessitates improvements to the existing transport infrastructure and to the number of travel options to ensure that congestion and capacity issues do not constrain growth and force individuals to consider relocation.

Housing

2.7.4. Large population growth will require the delivery of significant additional housing, some of which is planned to be located to the east of Cambridge on land allocated or safeguarded for development along the Newmarket corridor. This increase in residential development will have associated impacts on the transport network, and if not appropriately managed, could result in negative externalities such as congestion, localised air pollution, noise pollution, and increased road traffic incidents.

Employment & Productivity

2.7.5. The East of England Forecasting Model (EEFM)[11] suggests that the East of England economy will employ a further 980,000 people over a twenty-year period by 2036, representing growth per annum of 0.7%. This is above the national average of 0.6%.

2.7.6. The total jobs growth forecast in Greater Cambridge over the planning period, 2011-31, was established as 44,100 jobs, which informed the growth identified within the City Deal. Although this growth is ambitious when compared to the latest EEFM 2016 figures (36,000 jobs over 2011-2031), it is in line with recent actual employee growth recorded in the national data.

2.7.7. Cambridge and Peterborough Independent Economic Review 2018 (CPIER) articulates that if employment grows as anticipated at local land use plan levels, there will be an increased number of commuter trips and resultant issues across the transport network. If employment grows at higher rates there could be 82% more commuters travelling into Cambridge by 2031 when compared with 2011 levels[12], with a number of significant transport issues arising as a result if the transport network does not evolve to accommodate such growth.

[9] ONS Census 2021
[10] https://cambridgeshireinsight.org.uk
[11] https://cambridgeshireinsight.org.uk/EEFM/
[12] Cambridge & Peterborough Independent Economic Review (CPIER), Final Report, September 2018.

Delivery of City Access Programme

2.7.8. The Making Connections 2022 consultation is part of the GCP's City Access programme to improve the way that people and vehicles move around the city, whilst reducing congestion and improving air quality. In addition to transforming the bus network and investing in sustainable travel schemes, the programme proposes the introduction of a Sustainable Travel Zone in the form of a road user charge. If the proposal is implemented without expanded P&R sites along key roads to enable mode switch, it will result in additional travel costs for car users travelling from locations further away without public transport connections to Cambridge. This added travel cost might constrain local labour markets and disproportionately affect the least well-off.

Traffic Flows and Congestion

2.7.9. Traffic delays currently materialise as a result of demand (vehicle flow) outstripping supply (capacity) on sections of the network. Without intervention, this challenge will increase with associated issues for the local economy and residents along the Newmarket Road. By investing in P&R facilities that encourage higher levels of mode switch for the final part of car journeys into Cambridge, more efficient use of the highway network can be achieved, e.g. sustainable and active modes and goods vehicles.

SUMMARY OF EVIDENCE AND INFORMATION

2.7.10. Table 2-3 below presents a summary of the need for intervention and the key supporting evidence.

Table 2-3 – The Need for Intervention

The Need for Intervention	
Strategies and Policies	National Policy: ▪ At national level, key transport policies reaffirm the focus on schemes that enhance connectivity and contribute to economic growth. Regional and sub-regional Policy: ▪ Delivery of the scheme will contribute to the region's policy recommendations for sustainable and active travel to be more accessible. Local Policy: ▪ Delivery of the scheme will meet the local authorities' strategic objectives through intercepting vehicular traffic and making mode switch to sustainable and active travel for journeys into Cambridge attractive.
Socio-economic context	Population and employment: *Current situation* ▪ The Index of Multiple Deprivation (IMD) data for east of Cambridge shows varying levels of deprivation in multiple domains, including income, employment, education, health, crime, barriers to housing and services, and living environment. Certain MSOAs in Newmarket, Burwell, Soham and Bury St Edmunds are comparatively more deprived in terms of the IMD than other areas of Cambridge.

	▪ Low-income groups are more dependent on walking, cycling and public transport to access jobs, education and local services. Journey time improvements by sustainable modes due to reduced congestion will help level-up access to the full range of opportunities the city has to offer. ▪ On average, 21% of the population from East Cambridgeshire travel to work to Cambridge and 36% from South Cambridgeshire work in Cambridge. 70% of commuters from East Cambridgeshire traveling to Cambridge for work use car, indicating high car dependency and propensity for car use. *Future situation* ▪ It is anticipated that the population of Cambridge will reach 788,710 by 2036, an increase of nearly 20% when compared to 2016, meaning there are associated challenges with an ageing and growing population in terms of housing and employment. This population growth could result in a greater number of cars on the roads around Cambridge, which would bring a myriad of social, environmental, and economic disbenefits unless addressed.
Wider Economic Context	*Current situation* ▪ Rapid business creation and growth associated with the 'Cambridge Phenomenon' has created jobs and prosperity in Greater Cambridge, and for the region as a whole. ▪ Between 2019 and 2021, the region of Cambridgeshire and Peterborough, showed an increase in the number of registered businesses. There was a rise of 4,440 businesses in 2020. *Future situation* ▪ Continued economic growth is forecast to create an additional 44,100 jobs by 2031 in Cambridge. The infrastructure of the area must support this potential pace of growth.
Sustainable Transport	*Current situation* ▪ Bus speeds are low when running in general traffic and peak times along Newmarket Road resulting in unreliable journey times by sustainable modes. ▪ High traffic flows during peak periods result in a congested, vehicle dominated environment that discourages movements by active modes. *Future situation* ▪ Highway network capacity constraints are limiting economic performance, discouraging the use of bus, cycle and walking, causing highway congestion, worsening air quality, not addressing declining bus use, shrinking economic catchments and reducing economic productivity. As the population increases, these issues will be exacerbated unless there is appropriate intervention. ▪ Trips by sustainable and active travel modes need to drastically increase to meet the target of Net Zero by 2050. This will reduce trips made by private vehicles that contribute to carbon emissions.
Environmental Context	*Current situation* ▪ Cambridge City Council passed a motion to declare a climate emergency in 2019 and as a result committed to a carbon reduction target of making Cambridge carbon neutral by 2030. In order to keep to 1.5 degrees Celsius or

	less global warming, Cambridge was allocated a carbon budget of 4.6 million tonnes of carbon dioxide (MtCO2) from energy only for the period of 2018 to 2100. ▪ The GCP's programme aims to support a reduction in carbon emissions by increasing uptake of public transport and active travel, decreasing car use and supporting the decarbonisation of public transport. Projects are shaped to support these objectives. *Future situation* ▪ Limiting total carbon emissions in this period to this amount would enable Cambridge to achieve its share of the current national carbon budgets set by the Climate Change Act. 4.2 MtCO2 of this budget would be for the period from 2018 to 2032, during which time carbon emissions would need to fall rapidly.
Development	▪ The Cambridge Local Plan covers the period of 2018-2031 and identifies the need for 14,000 additional homes and 22,000 jobs. This increase in residential development will have associated impacts on the transport network, and if not appropriately managed, could result in negative externalities such as congestion, localised air pollution, noise pollution, and increased road traffic incidents.

2.8 STAKEHOLDERS' VIEWS AND REQUIREMENTS

2.8.1. This section describes how stakeholders have contributed to the development of the proposed scheme as part of the overall CEA programme.

STAKEHOLDER IDENTIFICATION

2.8.2. The stakeholders for the scheme who have the potential to influence its outcome, programme, or costs, were identified at project inception and have been kept under review as the project has progressed towards OBC.

Table 2-4 –Stakeholders

Stakeholder Category	Key Stakeholders	Key Interest
General Public	The public	Interested in the scheme's impact on local residents, business, and users of the transport infrastructure
Statutory Bodies	Natural England	Interested in the scheme's impacts on the conservation, enhancement and management of the natural environment and sustainable development.
	National Highways	Interested in the scheme's impact on the strategic road network

Town & Parish Councils	East Cambridgeshire District Council	Interested in scheme's impact on the individual towns and parishes. Concerned to see commensurate investment in East Cambridgeshire
National and Local Government	Members of Parliament	Interested in scheme's impact locally and nationally
	Cambridge City Council	Interested in scheme's impact on the Council area
	Cambridgeshire and Peterborough Combined Authority	Interested in scheme's impact on the Authority area
Charities	Countryside Charity Cambridgeshire and Peterborough (CPRE)	Interested in the scheme's impact on the physical and natural environment
	The British Horse Society	Interested in the scheme's impact on the protection and promotion of the interests of all horses and their riders
Health Care	Cambridge Biomedical Campus	Interested in scheme's impact on access to their medical facilities
	Cambridge University Hospitals	
PT Operator	Stagecoach	Interested in scheme's impact on their operations
Voluntary Organisation	Cambridge Past Present and Future	Interested in scheme's impact on heritage and green spaces

CAMBRIDGE EASTERN ACCESS CONSULTATION (2020)

2.8.3. The aim of the 2020 consultation was to involve as many residents and other interested parties as possible and give them the opportunity to provide their feedback to inform the development of the design of the CEA programme. Press and social media were used to raise awareness of the consultation. Emails and letters were sent to a wide range of local stakeholders.

2.8.4. Due to COVID-19 restrictions, it was decided to undertake the consultation online and all information was hosted on GCP's website. The information presented aimed to help consultees make an informed decision when providing their feedback through the questionnaire. All materials were written in plain English, accessible (in an easy read format) and were also available as a hard copy version on request.

2.8.5. Three online public sessions were held to present the proposed improvements on 19th November 2020, 26th November 2020 and 9th December 2020. These public sessions provided consultees with an opportunity to raise questions they had to subject experts. There were also three pre-launch briefings for local district and county councillors and attendance at parish council and representative

groups' meetings during the consultation on request. In addition, a social media campaign was undertaken across the GCP's Twitter, Facebook and LinkedIn channels.

2.8.6. The consultation closed on 18th December 2020. The consultation report can currently be viewed on:

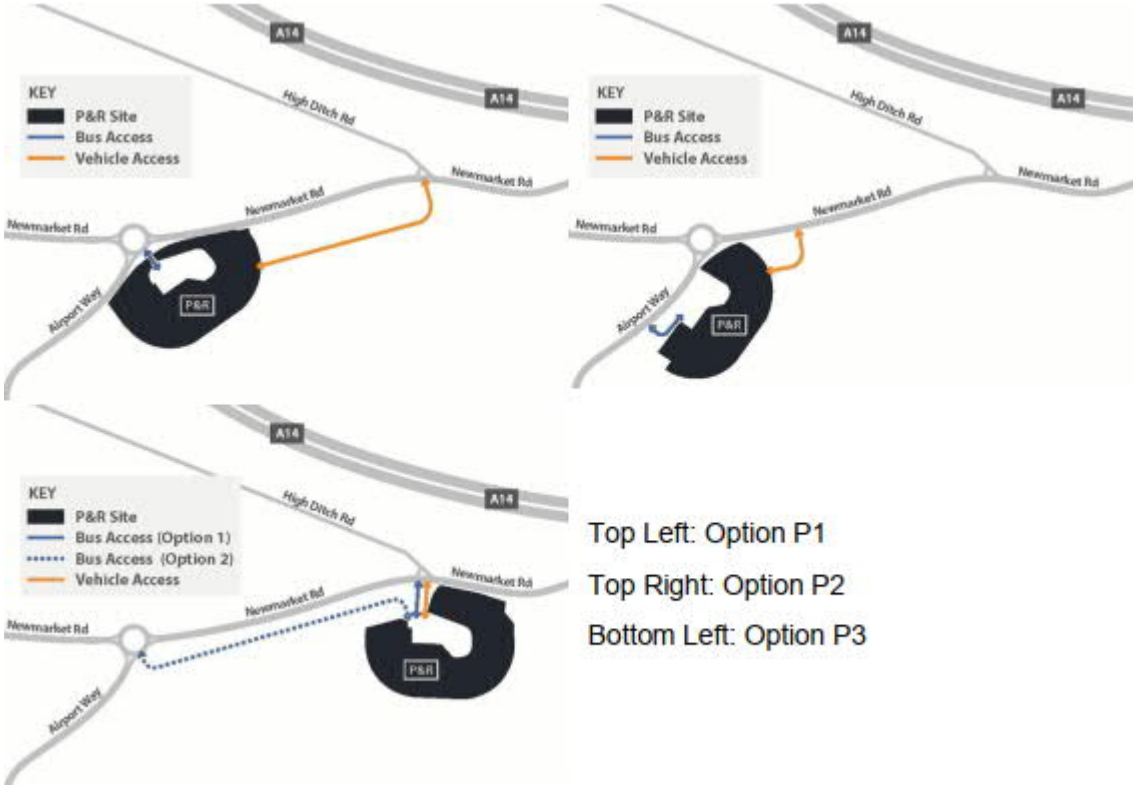
https://consultcambs.uk.engagementhq.com/cea-consultation-2020

2.8.7. Of the detailed comments received, the most common areas of discussion regarding the P&R were:

- Some of the respondents who discussed this theme felt that the P&R site was currently located too close to Cambridge, as was the suggestion for the new site. These respondents felt the site needed to be located further away to 'catch' congestion before it occurred, be more accessible to nearby villages, and remove the temptation to carry on into Cambridge.
- Some of the respondents who discussed this theme felt the existing P&R site was suitable and that this, along with the negative environmental impact of a new build, meant moving the site was unnecessary.

CONCEPT DESIGN CONSULTATION (2021)

Figure 2-14 - Three Concept Designs for 2021 Consultation



2.8.8. Following the 2020 consultation, WSP were instructed by the GCP to produce 2,000 space concept design P&R options for relocating the existing P&R. Three options (as illustrated in Figure 2-14) were developed for consultation, which took place between 8th November and 22nd December 2021:

- **Option P1**: providing a 2,000 space P&R site to the east of Airport Way, with bus access onto Airport Way and vehicle access from Newmarket Road.
- **Option P2**: providing a 2,000 space P&R site to the east of Airport Way, with bus access onto Airport Way, south of the roundabout, and vehicle access from Newmarket Road.

- **Option P3**: providing a 2,000 space P&R site to the south of Newmarket Road accessed from a new junction with Newmarket Road.

2.8.9. Due to the ongoing uncertainty and restrictions brought about by the COVID-19 pandemic, the six-week consultation period was carried out largely online, with two face-to-face briefings. Before the online survey was released, approximately 21,000 leaflets were distributed to households and businesses in the east of Cambridge area to help capture not only local residents' views but also the views of current and potential P&R users.

2.8.10. 542 respondents answered the question on how far they supported the proposals for the relocation of the Newmarket Road P&R site (533 respondents for 'Option P1', 531 for 'Option P2' and 531 respondents for 'Option P3'). There was not a clear preference among respondents in terms of support or opposition to any of the relocation options, with over two-fifths of respondents having 'no opinion'.

2.8.11. Figure 2-15 shows that overall, 42%-45% of respondents had no opinion on the three options. Comparing the three options, there was slightly stronger support for P1 (32%) compared to P2 (31%) and P3 (28%). Of the three options P3 was most strongly opposed (17%).

Figure 2-15 Public Consultation Support for the Newmarket Road P&R Relocation Proposals

2.8.12. A significant number of detailed comments were received. From these it was clear that:

- There were concerns with the impact of the scheme on the Green Belt;
- There were concerns over the proximity of the options to the Wilbraham Fen SSSI; and
- It was felt that there was a lack of consideration for alternative sites including the existing site, within the Airport, north of High Ditch Road and north of the Quy Interchange.

2.9 OPTION DEVELOPMENT

BACKGROUND

2.9.1. Having reviewed both the original OAR, SOBC and the feedback from the concept design public consultation, it was decided that the P&R site identification and appraisal process was revisited to ensure:

- Documented evidence was recorded setting out why the existing P&R site cannot be expanded.

- An evidence base was produced demonstrating the requirement for a Green Belt location for the P&R site.
- A thorough long-list of potential P&R sites was identified based on a clear and transparent 'area of search' and key operational, environmental and planning policy constraints.
- A robust and consistent appraisal of the identified sites was undertaken, resulting in a recommendation of a preferred site(s).

P&R SITE IDENTIFICATION AND APPRAISAL WORK

2.9.2. The P&R site identification and appraisal process was revisited, and the approach and findings detailed in the site OAR[13] provided in Appendix B.

2.9.3. The first stage of the P&R site identification and appraisal methodology was to identify a series of objectives and assessment criteria specifically relating to Newmarket Road P&R within its local context. For a P&R facility to be attractive it is considered that it should be located on or close to a main radial route, easily accessible from the wider strategic road network, accessible from local communities on foot and bicycle, and provide attractive onward connections by bus and active travel modes. Some of the key factors that influence the attractiveness of the P&R are therefore journey time, bus frequency, location and access, and parking availability.

2.9.4. For the Newmarket P&R, a 25-minute onward journey travel time was used to inform the extent of the 'area of search'. The adoption of a 25-minute journey time for the appraisal was considered a good proxy for a maximum onward travel time of between 20 and 30 minutes when taking into consideration variability in traffic congestion levels and people's cycling abilities and speeds.

2.9.5. A 25-minute cycle time (allowing for variations in people's cycling speeds) equates to approximately travelling 3 miles/5km, which is considered to provide an appropriate onward journey travel distance that many potential P&R users would be willing to consider when also factoring in travel time to the P&R and interchange with a bicycle.

2.9.6. The same onward journey time by bus was also adopted. As the journey time by bus increases the P&R site is likely to become less attractive. The existing Cambridge P&R sites inbound timetabled bus journey times in the weekday AM peak hour are 12-21 minutes and therefore 25 minutes provides an appropriate proxy for a maximum onward bus journey time from eastern Cambridge.

Objective	Assessment	Data/Evidence Sources
Maximises the potential for journeys to be undertaken by sustainable modes	Sites must be within 25 minutes bus journey time of Cambridge city centre	TRACC Analysis
	Sites must be within 25 minutes cycling journey time of Cambridge city centre	TRACC Analysis
Maximises access to sustainable 'last mile'	Sites must be accessible from the strategic road network	GIS Analysis

[13] WSP (May 2022) Newmarket Road Park and Ride Site Selection and Appraisal Report

Objective	Assessment	Data/Evidence Sources
modes from locations to the east of Cambridge	Sites must be located within 500m of the A1303 Newmarket Road corridor	GIS Analysis

2.9.7. The rationale for the two overarching scheme objectives and their assessment criteria are set below.

- Maximise the potential for journeys to be undertaken by sustainable modes:
  - The overarching purpose of a P&R site is to intercept trips at the periphery of the city and enable site users to complete their onward journey to their destination in Cambridge by sustainable modes (bus and active travel). It is therefore justified that maximising the opportunity for journeys to be undertaken by sustainable modes is the main overarching objective to help define the area of search.
- Maximise access to sustainable 'Last mile' modes from locations to the east of Cambridge:
  - Given that the P&R site needs to be located on the main radial route (to maximise vehicle intercept rates), and as the movements from north, south and west of Cambridge are already catered for by the other P&R sites, it is justified to limit the P&R area of search to the A1303 Newmarket Road corridor to continue to intercept trips from locations to the east of Cambridge.
  - Site PR04 identified in the original OAR and the B1047 corridor was not considered further as it was located outside the P&R area of search.
- Site must be accessible from the Strategic Road Network:
  - The A1303 Newmarket Road into Cambridge is considered to be an appropriate radial route to locate a P&R given its direct all movement access to the A14 to enable people traveling from locations east of the site to access the site.
- Other Factors:
  - As the P&R model requires the site to be located on the periphery of the urban area, the location of the existing P&R site has been set as the western extent of the P&R area of search. If the P&R site is close to the city centre, the journey time by bus will be reduced compared to completing the journey by car, reducing the attractiveness of the P&R. The Cambridge Green Belt map also indicated that there is no space west of the existing P&R that is not already developed, allocated for development or protected.

2.9.8. The assessment process resulted in the following outcomes:

- Outcome 1: the requirement for a Green Belt location.
  - The main factor that results in the requirement for a Green Belt location is the requirement for the relocated P&R site to achieve attractive bus and cycling journey times to key destinations in Cambridge. Reviewing the extent of the Cambridge Green Belt in eastern Cambridge, it is clear there are no suitable sites that are not within the Green Belt that meet the Newmarket P&R objectives. The areas beyond the Cambridge Green Belt, within eastern Cambridgeshire would:

- Be difficult to access, with vehicles being required to travel on inappropriate roads and through local villages.
- Difficult to access from the strategic road network due to travel distances and/or limited access junctions.
- Result in unattractive bus journey times. The substantial increase in bus journey times along lower standard roads would substantially increase the cost of running reliable and frequent P&R buses services due to the increased travel distances and opportunities for service delays.
- Result in unviable and unattractive cycling distances for many cyclists.

- Looking into the extent of the existing Green Belt, combined with the rationale for the P&R area of search demonstrates that a Green Belt location is required for a relocated Newmarket Road P&R site.

- Outcome 2: The requirement for a location along the A1303 Newmarket Road corridor, between the existing P&R and junction 35 of A14
  - The scheme objectives and their consideration demonstrated the need for the relocated P&R to be located within the A1303 corridor. This is due to the need to be located on a main radial route into Cambridge (to maximise accessibility and intercepting pass-by trips), fully accessible from the strategic road network and located on the periphery of the city to ensure the site can achieve attractive bus and cycle journey times.
- Outcome 3: Identification of a long list of potential P&R site locations;
- Outcome 4: Short list of P&R site locations;
- Outcome 5: Requirement to relocate the P&R rather than redevelop the existing site; and
- Outcome 6: Recommended preferred site(s).

2.9.9. Outcomes 3 to 6 are discussed in detail in the sections below.

SITE IDENTIFICATION AND INITIAL SIFT (OUTCOME 3)

2.9.10. In undertaking the identification of the long list of potential sites within the P&R area of search, a number of assumptions were applied to exclude land that:

- Contained private residential units;
- Had committed development sites that are being actively built out (Marleigh residential development);
- Were within Flood Zones 2, 3a and 3b;
- Were land parcels which cannot be safely accessed/egressed from the public highway.

2.9.11. The result of the site identification was a long list of potential P&R site locations.

Reference	Option Name	Option Description
P1	East of Airport Way	The site comprises predominately greenfield agricultural land. The site is located within the Green Belt and the southern part of the site is covered by SCDC Local Plan Policy CE/21(1) Country Park.

Reference	Option Name	Option Description
P2	South of Newmarket Road	This site comprises approximately 28 hectares of land that is bounded to the north by Newmarket Road and the west by site P1. The site comprises predominately greenfield agricultural land. The site is located within the Green Belt and the eastern boundary is located in close proximity to Wilbraham Fens SSSI.
P3	North of High Ditch Road	This site comprises approximately 10 hectares of land that is bounded to the north by the A14 and the south by High Ditch Road. The site comprises predominately greenfield agricultural land. The site is located within the Green Belt and the site boundary has excluded the CE/32 Cambridge Airport Safety Zones located to the west of the site. The entire site sits within the Cambridge Wastewater Treatment Plant Relocation Project application boundary.
P4	South of High Ditch Road	This site comprises approximately 4 hectares of land that is bounded to the north by High Ditch Road and to the south by private properties. The site comprises predominately greenfield agricultural land. The site is located within the Green Belt.
P5	Adjacent to Marleigh	This site comprises approximately 13 hectares of land that is bounded to the north by High Ditch Road, the south by Newmarket Road and west by the Marleigh development. The site comprises predominately greenfield agricultural land. The site is located within the Green Belt and is bisected by the CE/32 Cambridge Airport Safety Zone.
P6	West of Airport Way	This site comprises approximately 13 hectares of land within the Cambridge Airport site and is bounded to the north by Newmarket Road and to the east by Airport Way. The site comprises greenfield land and part of the main runway. All of the site is located within SCDC Local Plan Policy SS/3 Cambridge East and bisected by CE/32 Cambridge Airport Safety Zone.
P7	Existing Site	The existing P&R site comprises approximately 4 hectares of land that is bounded by the Marleigh development and Newmarket Road to the south. All of the site is located within SCDC Local Plan Policy SS/3 Cambridge East.
P8	South of Junction 35	This site comprises approximately 3 hectares of land that is bounded to the north by the A14 and to the south by Newmarket Road. The site comprises predominately greenfield agricultural land and is located in the Green Belt. The site does not extend further west to avoid impacts on existing residential properties.

Reference	Option Name	Option Description
P9	East of Quy Water	This site comprises approximately 5.5 hectares of land that is bounded to the north by Newmarket Road and to the south by Great Wilbraham SSSI and an area of Flood Zone 2 and 3. The site comprises predominately greenfield land and is located in the Green Belt. The site does not extend further south or east due to these environmental constraints.
P10	North of A14 East	This site comprises approximately 16 hectares of land that is bounded to the north by Newmarket Road and to the south by the A14. The site comprises predominately greenfield agricultural land and is located in the Green Belt. Sections of the northern boundary of the site are allocated as Local Green Space, Policy NH/12 in the SCDC Local Plan.
P11	North of A14 West	This site comprises approximately 37 hectares of land that is bounded to the east by Stow cum Quy and is accessible from Church Road. The site comprises greenfield agricultural land and is located in the Green Belt. Sections of the south-eastern boundary of the site are allocated as Local Green Space, Policy NH/12 in the SCDC Local Plan.
P12	South of Stow cum Quy	This site comprises approximately 23 hectares of land that is bounded to the west by Stow cum Quy and to the south by Newmarket Road. The site comprises predominately greenfield agricultural land and is located in the Green Belt. Almost the entire site is allocated as Local Green Space, Policy NH/12 in the SCDC Local Plan.

SHORT LISTING OF SITES (OUTCOMES 4 AND 5)

2.9.12. The long list of 12 No. broad P&R locations were sifted against the following critical success factors (CSFs):

- Operational Requirements: Sites below the minimum 5.0 hectares requirement were discounted.
- Site Availability: sites with extant planning permission, allocated for development in an Adopted Local Plan and/or substantially protected by existing planning policies were discounted.
- Key Environmental Constraints: sites that are located in close proximity to key environmental constraints were discounted. This included consideration of the following constraints:
    - Proximity to sites with designated environmental protection including Sites of Special Scientific Interest (SSSI); and
    - Proximity to existing communities and sensitive receptors.

2.9.13. Following the sifting against the CSF a total of five sites were short-listed. These were P1, P2, P3, P10 and P11. In discounting P7, the existing site, due to it not meeting the operational requirements, it was demonstrated that it was necessary to relocate the P&R rather than redevelop the existing site.

IDENTIFICATION OF PREFERRED SITE (OUTCOME 6)

2.9.14. The five short-listed P&R sites were assessed using a Multi-Criteria Assessment Framework (MCAF) aligned with the principles of the DfT's Early Assessment and Sifting Tool (EAST). The MCAF provided a decision support tool, developed to enable a proportionate assessment of the short-listed P&R site options in a clear and consistent format, based on available desktop information. Its purpose was to provide the GCP with relevant, high-level comparative performance information to help inform their decision on which option should be taken forward as the preferred site. The various components of the MCAF and summarised results are set out below (full details are provided in the Site Identification and Appraisal report).

Environmental Appraisal:

Criteria	P1	P2	P3	P10	P11
Air Quality	Minor positive	Minor positive	Minor positive	Minor Negative	Minor Negative
Noise	Minor Negative	Minor Negative	Neutral	Minor Negative	Minor Negative
Landscape/Townscape	Neutral	Neutral	Neutral	Minor Negative	Minor Negative
Carbon Emissions	Minor Negative	Minor Negative	Minor Negative	Minor Negative	Minor Negative
Historic Environment	Minor Negative	Major Negative	Major Negative	Minor Negative	Major Negative
Biodiversity	Minor Negative	Major Negative	Minor Negative	Minor Negative	Minor Negative
Water Environment	Neutral	Minor Negative	Minor Negative	Neutral	Minor Negative

P&R Operational Requirements Assessment:

Criteria	P1	P2	P3	P10	P11
Pass-by Intercept Potential					
Site Access/Egress by Car					
Households within a 10 min Cycle					
Cycle Journey time to Cambridge city centre					

Site Access/Egress by Bicycle					
Households within a 10 min walk					
Site Access/Egress by Pedestrians					
AM Peak Bus Journey Time to Drummer Street Bus Station					
Opportunity for Segregated Bus Priority Access/Egress					
Plot Shape/Topography					
Land Ownership/Availability					

P&R Constructability Appraisal:

Criteria	**P1**	**P2**	**P3**	**P10**	**P11**
Constructability					

Green Belt Option Appraisal:

Criteria	**P1**	**P2**	**P3**	**P10**	**P11**
Predicted Level of Green Belt Harm	Moderate/ High	Moderate	High	Moderate/ High	Moderate

2.9.15. Taking all the assessment results into consideration, it was concluded on balance that Site P1 was the preferred site to accommodate the P&R facility. From an environmental perspective P1 ranks more highly as a preferred option compared to the other four short-listed sites, though it is located closest to the village of Teversham. The site is likely to have a minor positive impact on air quality, a neutral impact on townscape, a minor negative impact on carbon, and a minor negative impact on noise for the village. Although Option P1 is located within 250m of the Quy Water, it is unlikely to have any notable impacts on the watercourse. Likewise, although there is a possibility of identifying archaeological features, there are as yet no confirmed findings at the site.

2.9.16. From an operational perspective, P1 ranks as the best performing option, followed by P2, P3 and then P10 and P11. This is because P1 is the closest to Cambridge and therefore provides the

quickest bus and cycle journey times to destinations in the city. It is also located on the 'inbound' direction of travel, can directly support the future communities at Marleigh and the Airport development as well as providing the opportunity to directly route additional bus services through the Airport development site or along Airport Way.

2.10 STRATEGIC CASE – CONCLUSIONS

2.10.1. This Strategic Case demonstrates that the scheme has an excellent fit both with GCP's overall strategic priorities, responsibilities, proposed City Access and Making Connections programme, and with the relevant national, regional, and local policies. It demonstrates how the Newmarket P&R scheme is needed to:

- Intercept car trips from east of Cambridge coming to the city centre via the A14 and A1303.
- Reduce congestion and traffic flows which cause community severance along the Newmarket Road corridor.
- Provide attractive 'Park & Ride', 'Park & Pedal' and 'Park & Stride' infrastructure and facilities to encourage mode switch for journeys into Cambridge.
- Enable the delivery of planned growth, including major housing development north of Newmarket Road (Marleigh), the Marshall's site and growth in settlements east of Cambridge.
- Improve bus journey time reliability into Cambridge along Newmarket Road as a result of reduced congestion and traffic.
- Improve accessibility by sustainable modes of transport between new and existing residential areas and key employment and retail areas along Newmarket Road and across Cambridge.

2.10.2. Clear objectives have been developed, based on the policy background and problems identified and a long list of strategic location options identified and assessed to identify the preferred site for the relocated P&R consistent with relevant policies, issues, and objectives. The preferred P&R site:

- Maximises the potential for journeys to be undertaken by sustainable modes; and
- Maximises access to sustainable 'last mile' modes from locations to the east of Cambridge.

2.10.3. The Strategic Case demonstrates that the scheme will achieve the objectives established for it. The scheme will deliver the relocation and expansion of the Newmarket Road P&R that will intercept car trips from east of Cambridge and encourage mode switch for the remaining journey into Cambridge city centre. In doing so it will limit/discourage vehicle trips into Cambridge and improve bus journey time reliability resulting in encouraging mode shift away from car. This will support decarbonising the transport network and improve connectivity between communities and places of employment and opportunity in Cambridge as part of wider transport programmes.

3 ECONOMIC CASE

3.1 INTRODUCTION

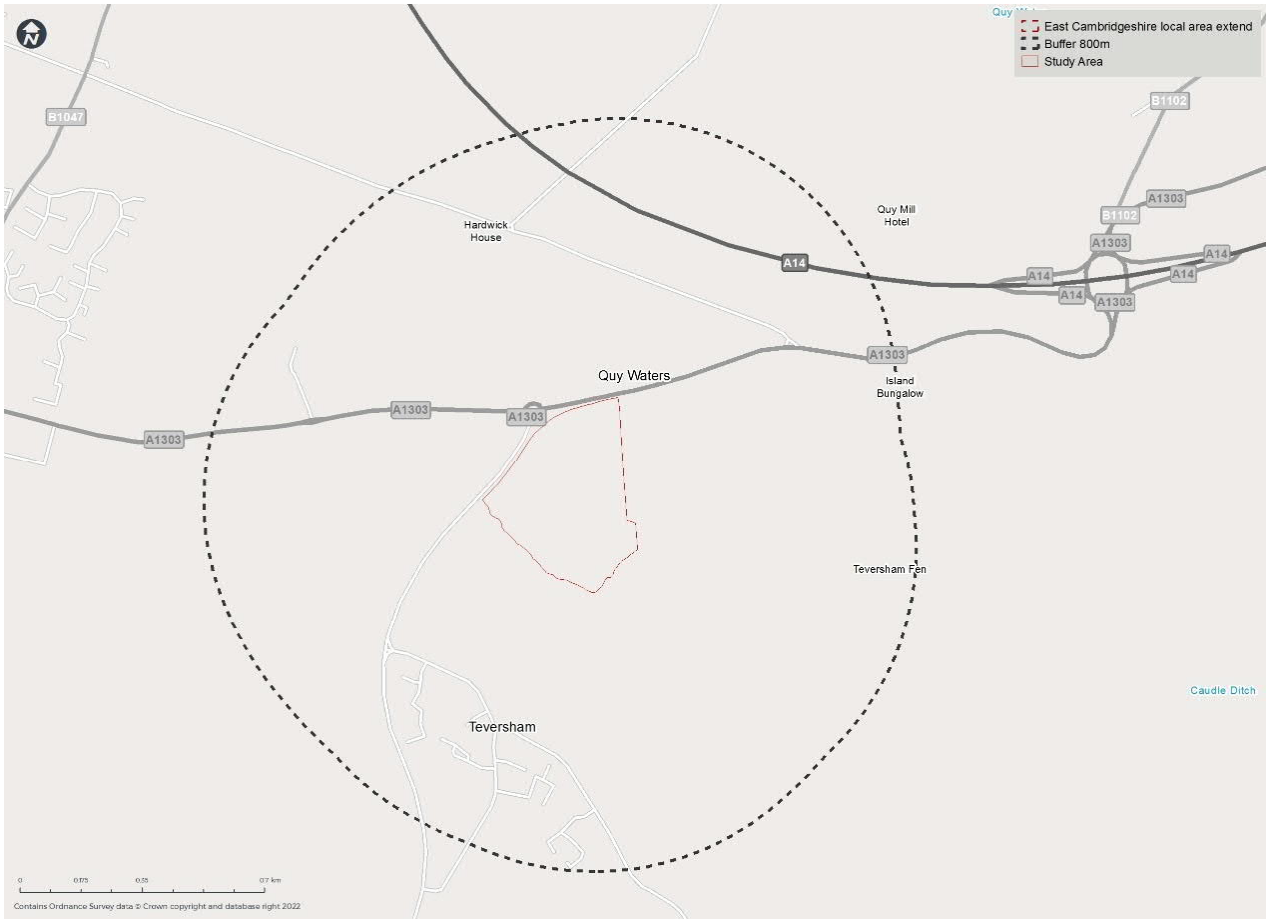
3.1.1. The Economic Case identifies the impacts of the scheme to inform the assessment of the Value for Money (VfM) of the Newmarket Road P&R phase of the CEA programme. It considers the economic, environmental, and social impacts that can be quantified and those which can be assessed qualitatively. To assess the VfM, these impacts have been compared to the scheme costs.

3.2 OPTIONS APPRAISED

3.2.1. As described in the Strategic Case, the relocation and expansion of the Newmarket Road P&R site will maximise the potential for journeys to Cambridge from east of the city to be undertaken by sustainable modes, support economic growth, provide inclusive accessibility to local community facilities and opportunities and contribute to wider policy ambitions including through the Making Connections and City Access Programme.

3.2.2. The scheme will relocate the existing site eastwards along the A1303 Newmarket Road corridor between Airport Way and Junction 35 of A14 shown in Figure 3-1, and expand the capacity for cars and cycles. Two Concept Design Layouts of the scheme are included in Appendix A.

Figure 3-1 – Newmarket Road Park and Ride Scheme Area



3.2.3. Table 3-1 provides a summary of the scheme interventions.

Table 3-1 – Cambridge Eastern Access P&R scheme

Element	Existing	Scheme
Park & Ride	895 car parking spaces 62 cycle parking spaces with 42 cycle lockers Indoor heating, welfare facilities, and vending machines Free parking (up to 18 hours)	Circa 1,750 car parking spaces Up to 150 cycle parking spaces and up to 150 cycle lockers Indoor heating, welfare facilities, and vending machines Free parking (up to 18 hours)
Bus services	6 buses per hour on Newmarket Road Free Wi-Fi, USB charging, greener engines (with low emission). Bus waiting, pick-up and drop-off zone £3 return fare to city centre	6 buses per hour on Newmarket Road Free Wi-Fi, USB charging, greener engines (with low emission). Bus waiting, pick-up and drop-off zone £3 return fare to city centre
Walking and Cycling	Pedestrian crossing facilities	Signalised junction at entry point to enhance walk and cycle crossing facilities

3.2.4. The appraisal considers the incremental benefits of the intervention, comparing the benefits (and costs) of the scheme to the without scheme case (namely the current P&R site).

3.3 APPRAISAL APPROACH AND ASSUMPTIONS

OVERVIEW

3.3.1. The appraisal has been undertaken in line with the principles of the HM Treasury Green Book and the DfT's Transport Analysis Guidance (TAG) for schemes of this nature. However, recognising the context for the scheme, as described in the previous chapters, the 'decide and provide' approach to the development of the Concept Designs, and a proportionate approach reflecting the availability of modelling, the focus of the appraisal captures the improvements in accessibility, model shift journey time and journey distance benefits of the P&R scheme, assessed quantitatively and qualitatively.

3.3.2. This approach aligns with the overarching strategy for GCP centred upon the Making Connections and City Access Programme which includes demand management and enhanced public transport measures to encourage residents and visitors away from cars to reduce levels of traffic in the city centre and around key employment hubs. This manifests itself in the CEA programme prioritising high quality and consistent infrastructure to switch between cars and sustainable modes, for which this scheme provides the P&R element.

3.3.3. Based on the results from preliminary modelling of journey distance and journey time, it is demonstrated that the relocation of the P&R site will result in car trips shifting to P&R. This results in reduced journey times and car journey distances. In the absence of comprehensive modelling, the number of car trips shifted to bus and anticipated journey time savings have been calculated using the 2041 Preliminary Design model (through Paramics).

3.3.4. The estimated modal shift is only achievable through investment in the high-quality public transport, cycling and pedestrian infrastructure that the Newmarket Road P&R scheme and wider elements of the CEA programme will deliver, ensuring these modes are a more attractive option compared to the private car. Given this, the limitations of the currently available highway modelling, and the objectives for the wider CEA programme and city-wide initiatives to deliver modal shift to active and sustainable modes of transport, for the purposes of this appraisal highway dis-benefits have not been assessed.

3.3.5. For the modal shift elements of the scheme several different impacts (benefits and costs) have been quantified and consolidated in an economic appraisal model. In line with TAG, all costs and benefits in the appraisal have been presented in 2010 Present Values (PV) and market prices. Costs and benefits have been deflated to 2010 prices using the GDP Deflator forecasts within the November 2022 TAG Data Book and discounted to 2010 values using the TAG Data Book. The market price adjustment factor of 1.19 from the TAG Data Book has been used to convert from factor prices to market prices.

3.3.6. It is anticipated that the scheme will open by the end of 2026 and for the purposes of the appraisal benefits have been assumed from 1 January 2027. The appraisal period has been taken as 60 years and the impacts have been considered over this time-period.

3.3.7. The following sections set out the approach employed to appraise the benefits and cost of the P&R scheme.

BENEFITS MODELLING APPROACH

Paramics modelling

3.3.8. The Preliminary Design models were developed from the 2041 Do Minimum model which included the Preliminary Design scheme for Newmarket Road. The model demand was derived from the CSRM2 F series 2041 forecast model with the City Access Proxy, which added a time penalty for car trips ending in the proposed charge area. By incorporating the City Access Proxy in the forecast CSRM2 model, it is expected that forecast traffic in the Cambridge City Centre can be reduced by 10% compared to the base model.

3.3.9. The Preliminary Design was developed based on the assumption that car access for the P&R site is a priority junction located on Newmarket Road, with bus access directly linked to Airport Way Roundabout.

3.3.10. The existing trip rates of the Newmarket Road P&R have been applied to the proposed expanded P&R capacity[14] to calculate the trips originating from or travelling to the P&R site. The existing Newmarket Road P&R trip rates are comparable to the proposed M11 P&R trip rates that have a similar number of parking spaces as the expanded Newmarket Road P&R scheme will have. Therefore, it is appropriate to assume the existing trip rates can be applied for the expanded P&R.

[14] At the time of the Paramics modelling a working assumption of 2,000 parking spaces was applied.

The total demand of the whole network has been constrained to the original total demand. Table 3-2 compares the total demands to/from the existing and proposed P&R sites.

Table 3-2 – Park and Ride Demand Comparison

	Preliminary Design Model (P&R with 2,000 Spaces)		DM Model (P&R with 873 Spaces)		Car trips shifted to P&R	
	Origin	Destination	Origin	Destination	Origin	Destination
AM (07:00-08:00)	31	501	14	219	17	282
IP (11:00-12:00)	173	178	76	77	97	101
PM (17:00-18:00)	443	47	193	20	250	27

3.3.11. As the Paramics DM model does not include any scheme along Newmarket Road while the Preliminary Design model includes both Newmarket Road Preliminary Design scheme and the relocation of the P&R site, the direct comparison of the journey time/distance between DM and DS models also includes the impact of Newmarket Road Preliminary Design. Therefore, the direct comparison between DM and DS models is not appropriate to assess the impact of the relocation of the P&R site only. The assessment therefore focuses on the number of car trips shifted to the new P&R site, and the journey time/distance difference of these trips between using car and using the P&R in the Preliminary Design Model.

Model Results

3.3.12. Journey distance and journey time skim matrices have been extracted from the Preliminary Design models for the AM, PM and Interpeak periods. Table 3-3 compares the journey time/distance by using car to the journey time/distance by using the P&R for the trips shifted from car to the P&R. In general, the model results demonstrate a journey time/distance saving by using the P&R in all three time periods.

3.3.13. The most significant journey time saving can be observed in the PM peak due to the congestion in the network especially along Newmarket Road. In the PM peak, the average car journey time along Newmarket Road inbound is about 3.4 minutes longer than in the AM peak, and the car journey time travelling along Newmarket Road outbound is 5.4 minutes longer than in the AM peak.

Table 3-3 – Journey Time/Distance Saving for Car Trips Shifting to Park & Ride

	AM		IP		PM	
	Car	P&R	Car	P&R	Car	P&R
Total Travel Distance (Vehicle KM)	3,017	1,718	1,990	1,051	2,983	1,725
Total Travel Time (Vehicle Hours)	148	117	68	29	146	38

3.3.14. The bus journey time/journey distance (kilometres) between the relocated P&R site and Drummer Street in Cambridge City Centre is presented in the Table 3-4 below. The bus journey time is the average journey time during the peak hour.

Table 3-4 – Bus Journey Time/Distance

	AM	IP	PM
Bus Journey Distance (Kilometre) Inbound (P&R to Drummer Street)	5.17	5.17	5.17
Bus Journey Distance (Kilometre) Outbound (Drummer Street to P&R)	5.6	5.6	5.6
Bus Journey Time Inbound (Minutes) (P&R to Drummer Street)	15.5	14.7	20.0
Bus Journey Time Outbound (Minutes) (Drummer Street to P&R)	25.0	27.0	31.9

3.3.15. The modelled peak hour output (model shift from Car to P&R and journey time savings) has been annualised. Factors derived from the modelling data for the peak periods have been used, as set out in Table 3-5.

Table 3-5 – Peak Period and Annualization Factor

Time Period	Peak Period and Annualisation Factor
AM (07:00-08:00)	2.701
IP (11:00-12:00)	5.072
PM (17:00-18:00)	2.664
No. of Weekdays	253
No. of Weekends	52

3.3.16. Further details on the modelling approach and results are provided in Appendix C.

3.3.17. The model results have been used to derive journey time saving benefits and the impact on marginal external costs, as described below.

Journey Time Saving

3.3.18. The relocation and expansion of the P&R site will attract new users to the P&R services. These new users will benefit from journey time savings due to their switch from car. This time saving was valued using the Value of Time values for business, commuters, and other users, assuming the DfT default car purpose splits. The rule of a half was applied to the estimated time savings as per the DfT guidance. The outputs from each modelled period (AM, Inter Peak and PM) were annualised.

Marginal External Costs Assessment

3.3.19. In line with TAG Unit A5.4, the DfT's Marginal External Costs (MECs) approach has been used for estimating the benefits of the Newmarket Road P&R associated with the trips which continue to use the local highway network. The approach considers the benefits in terms of congestion, infrastructure, accidents, local air quality, noise, greenhouse gases and indirect tax. The method is based on the change in external costs arising from an additional or removed vehicle (in terms of vehicle-kms forecast by the modelling) on the network. The outputs from each modelled period (AM, Inter Peak and PM) were annualised.

SCHEME COSTS

3.3.20. It is estimated that the Newmarket Road P&R scheme will cost in the region of £31-£33m for option 1 and 3, based on construction works, professional fees, STATS, risk, inflation, and inflation contingency. Further detail on the estimation of the scheme costs is presented in the Financial Case. The cost spend profile of the scheme is outlined in Table 3-6 below.

Table 3-6 – Cost Spend Profile (£000s)

Outturn Cost excl. Optimism Bias	2022-23	2023-24	2024-25	2025-26	2026-27	**Total**
Option 1	416	858	1,344	8,804	19,722	**31,143**
Option 3	435	897	1,405	9,205	20,621	**32,563**

3.3.21. An exercise was undertaken to establish whether to apply optimism to the base costs in line with the project stage (Stage 2, Outline Business Case) and type of scheme (road scheme), or to use the risk adjusted cost instead, as described in TAG Unit A1.2 'Scheme Costs' (May 2022).

3.3.22. At this OBC stage, a 23% uplift for optimism bias is recommended to the base scheme costs. Using this the optimism bias value is £4.55m. This compares to the risk allowance in the outturn costs of £5.93m (equivalent to a 30% uplift). Given this value of risk is greater than the recommended value of optimism bias the risk value rather than the optimism bias value has been used within the appraisal.

3.3.23. Following the application of risk, the scheme costs have been adjusted to produce costs consistent with the benefits, namely 2010 prices and values, with the market factor adjustment applied.

MAINTENANCE AND OPERATING COSTS

3.3.24. The current Newmarket Road P&R site is managed by Cambridgeshire County Council (CCC) with a private supplier contracted to deliver the facility services. The relocation and expansion of the P&R site will increase the current maintenance and operating cost for the facilities due to the larger site, though efficiency savings are envisaged due to the use of the latest design principles and technology.

3.3.25. Given the commercial sensitivity of the contractual arrangements made by CCC and current uncertainty over the exact requirements for maintenance and operations at this stage, an assumed cost has been used for the purposes of this appraisal, based on discussions with CCC. The following broad considerations have been assumed:

- Cost for general cleaning for the facility building will remain as it is.
- Cleaning and domestic supply facilities will remain as they are.
- Water charges remain as they are.
- Electricity consumption will remain as it is due to improved energy efficiency.
- CCTV maintenance will increase due to greater number of cameras and communications due to larger site.
- Insurance will increase as larger site results in greater value of facilities to insure.
- Other business operations will also increase with the larger site.

3.3.26. Assuming the above and taking a conservative view, it is estimated that the additional expenditure for maintenance and operating costs for the P&R could be around £150,000 per annum (in today's prices).

3.3.27. It is assumed that renewal costs, incurred from time to time, will be the same as the current costs for the P&R site.

REVENUE

3.3.28. The mode shift to P&R will generate an increase in bus operator revenue. For the purposes of this appraisal the following assumptions have been used to estimate the revenue, given the commercial sensitivity around the amount actually received by the operator.

- The average car occupancy is assumed as 1.57 (TAG data book, Nov 2022 - A1.3.3) to calculate the number of passengers transferred from car to P&R.
- Annualisation assumed for the yearly demand is 305 working days a year (Weekday and Weekend average demand).
- Assumed yield of £2.50 per return journey to reflect the return fare being £3.00 and the availability of other ticket options (e.g., group return and season tickets plus the National Concessionary Travel Scheme).
- Demand uplifted as per population growth, with fares and O&M costs assumed to be constant in real terms over the appraisal period.

3.3.29. The impact on indirect tax received by the government associated with the increase in bus revenue has also been estimated. As described in TAG, when there is a change in public transport revenue, expenditure shifts from/to goods or services attracting the average level of indirect taxation to/from fares. This has an indirect tax effect as there is no VAT on the fares in contrast to goods and services.

3.4 SUMMARY

3.4.1. The main appraisal assumptions are set out in Table 3-7.

Table 3-7 – Economic Appraisal Assumptions

Criteria	Assumption	Source
Opening year	2027*	Project Programme
Base year	2010	DfT Base Year
Appraisal period	60 years	DfT guidance
Discount rate	3.5% 0-30 years 3.0% 31-75 years	November 2022 TAG Data Book (A1 1.1)
GDP Deflator	-	November 2022 TAG Data Book (Annual Parameters)
Journey purpose split	Business: 14.85% Commuting: 31.21% Other: 53.94%	November 2022 TAG Data Book
Values of time (2022, market prices)	Business – £11.30 Commuter – £11.22 Other – £5.12	November 2022 TAG Databook (A1.3.2)
Market price adjustment factor	1.19	November 2022 TAG Databook (A1.3.1)
Optimism bias on capital costs	23%	TAG Unit A1-2 (Though risk allowance of 30% used as greater than recommended OB level)
Optimism bias on operating costs	23%	TAG Unit A1-2 Capital cost uplift assumed
Cost spend profile	2022/23 – 2026/27 See Table 3-6	Project Programme

*Scheme is programmed to open in December 2026. 2027 used as opening year as the appraisal model is based on whole years.

3.5 APPRAISAL RESULTS

3.5.1. The results of the economic appraisal are described below.

JOURNEY TIME SAVINGS

3.5.2. Table 3-8 below presents the benefits of the scheme journey time savings to the new P&R users.

Table 3-8 – Journey Time Savings Benefit

Impact	£000s, 2010 PV over appraisal period
Journey Time Savings (£, 2010 PV)	13,576

3.5.3. The scheme proposals, which will provide an attractive service to the P&R users, are anticipated to result in journey time savings to those who switch from car to P&R of around £13.6m over the 60-year appraisal period.

MODAL SHIFT BENEFITS

3.5.4. The relocation and expansion of the P&R site, along with its provision of high-quality facilities will lead to greater take-up of sustainable modes of transport. Table 3-9 presents the benefits to wider society of the modal shift from car to P&R.

Table 3-9 – Model Shift Benefits

Impact	£000s, 2010 PV over appraisal period
Decongestion	16,628
Infrastructure	81
Accidents	5,706
Local air quality	692
Noise	380
Greenhouse gases	1,010
Indirect taxation	-663

3.5.5. There are decongestion benefits as a result of the modal shift from private cars to P&R, and associated impacts on accidents, air quality, noise and greenhouse gases. The reduction in private car use has a negative impact on indirect tax revenues to central government due to the reduction in fuel consumption.

3.6 BENEFIT TO COST RATIO

3.6.1. Consistent with DfT guidance for the treatment of benefits and costs, and as described above, the economic appraisal of the Newmarket Road P&R scheme produces a benefit to cost ratio (BCR) of 3.0:1, as presented below.

Table 3-10 – Benefit to Cost Ratio

	£000s, 2010 PV over appraisal period
Journey time savings	13,576
Decongestion	16,628
Noise	380
Local air quality	692
Greenhouse gases	1,010
Accidents	5,706
Bus operator revenue	19,054
Wider public finances (indirect tax)	-3,253
Present Value of Benefits (PVB)	**53,794**
Capital costs	15,868
Operating & Maintenance costs	1,986
Present Value of Costs (PVC)	**17,855**
Net Present Value (NPV)	**35,939**
Benefit:Cost Ratio (BCR)	**3.0:1**

3.6.2. Appendix D provides the disaggregation of results in the Transport Economic Efficiency (TEE), Public Accounts (PA) and Analysis of Monetised Costs and Benefits (AMCB) tables.

3.7 SENSITIVITY ANALYSIS

3.7.1. Sensitivity testing has been undertaken to explore the sensitivity of the expected outcomes of the appraisal to changes in inputs. The following sensitivity tests have been carried out, drawing on the key assumptions made in the core scenario:

- Test 1: £2 fare for single journey as per Making Connections proposals;
- Test 2: No revenue from bus services;
- Test 3: 30-year appraisal period; and
- Test 4: O&M cost doubled.

3.7.2. The table below sets out the impact on the PVB, PVC, NPV and BCR of each of these tests compared to the BCR for the core scenario.

Table 3-11: Sensitivity Analysis

Test	PVB (£m)	PVC (£m)	NPV (£m)	BCR
Core Scenario	**53.8**	**17.9**	**35.9**	**3.0:1**
Test 1: Ticket charge £2 for single journey as per Making Connections	63.7	17.9	45.8	3.6:1
Test 2: No revenue from bus services	37.3	17.9	19.5	2.1:1
Test 3: 30-year appraisal period	35.0	17.3	17.7	2.0:1
Test 4: O&M cost doubled	53.8	19.9	33.9	2.7:1

3.7.3. The strength of the case is most sensitive to the assumption of the appraisal period. Under test 3, where the appraisal period is assumed to be 30 years, the BCR decreases from 3.0:1 to 2.0:1. Test 2, where no revenue from bus services is included, also has a significant effect with the BCR reducing from 3.0:1 to 2.1:1. Under test 4, where the O&M cost is doubled, the BCR reduces to 2.7:1 from 3.0:1. In test 1, where a £2 fare for a single journey is assumed as per the proposals for Making Connections, the BCR increases to 3.6:1 from 3.0:1. Under all the sensitivity tests the BCR for the scheme remains strong (implying High Value for Money with BCRs above 2:1).

3.8 ENVIRONMENTAL IMPACTS

INTRODUCTION

3.8.1. The section below sets out the appraisal of the relocation and expansion of the Newmarket Road P&R considering the environmental impacts set out in TAG Unit A3.

NOISE

3.8.2. The relocated P&R and the existing site do not fall within a Noise Important Area (NIA), though two small NIAs on Newmarket Road would be affected by vehicles passing into the site.

3.8.3. The villages of Teversham and Stow-cum-Quy have a number of sensitive receptors for the relocated P&R. A minor negative impact on noise for the village of Teversham is expected from the short-term impact from construction noise and operational noise from vehicles using the site. No long-term impact on noise for the village of Stow-cum-Quy is expected.

3.8.4. Overall, the scheme is considered to have a **Slight Adverse** effect on noise.

3.8.5. Based on the approach to quantify MECs as described for the economic appraisal, the monetised impact on noise of modal shift from private car is estimated to be £381k (2010 PV).

AIR QUALITY

3.8.6. Central Cambridge is located within an Air Quality Management Area (AQMA), though this does not extend as far as the relocated P&R. There may be some local benefits west of Airport Way, where traffic accessing the current P&R site will shift eastwards.

3.8.7. There may be impacts on the AQMA depending on projected use rates of the P&R and how these impact on journeys in and out of Cambridge. There may also be local air quality impacts at the

relocated P&R resulting from changes in traffic flows. However, it is not yet clear whether these would be better or worse than with the current site.

3.8.8. The relocated P&R will be 450m closer to Teversham than the existing P&R. This is not expected to adversely impact on air quality for the village.

3.8.9. Overall, the scheme is considered to have a **Slight Beneficial** effect on air quality.

3.8.10. Based on the approach to quantify MECs as described for the economic appraisal, the monetised impact on air quality of modal shift from private car is estimated to be £693k (2010 PV).

GREENHOUSE GASES

3.8.11. In line with the assessment of the air quality impacts of the scheme, the net reduction in highway-kilometres as a result of modal shift to sustainable and active modes, will lead to a net decrease in greenhouse gas emissions.

3.8.12. Based on the approach to quantify MECs as described for the economic appraisal, the monetised impact on greenhouse gases of modal shift from private car is estimated to be £1,012k (2010 PV).

LANDSCAPE

3.8.13. The relocated P&R lies on predominantly greenfield agricultural land and is located within the Green Belt. A separate Green Belt Options Assessment has been undertaken. There are no designated or protected landscapes within the preferred site.

3.8.14. There are likely to be temporary visual impacts from construction for residents within 450m of Teversham. Lighting from the relocated P&R could result in spillage to the surrounding areas. Care should also be taken during design to avoid lighting being too close to receptors such as mature hedgerows.

3.8.15. Overall, the impact of the scheme on the landscape is anticipated to be **Neutral**.

TOWNSCAPE

3.8.16. The relocated P&R is intended to increase P&R capacity which in turn will encourage sustainable 'last mile' modes such as walking, cycling and public transport. This will benefit human interaction with the townscape. It is anticipated that the P&R scheme design will make a moderate contribution to maintaining and enhancing the quality of Cambridge's setting.

3.8.17. Overall, the scheme is considered to have a **Neutral** effect on the townscape.

HISTORIC ENVIRONMENT

3.8.18. The relocated P&R could affect the settings of five Grade II listed and one Grade II* listed building in Teversham. However, these effects will be minor given the closest listed buildings are more than 450m away from the site.

3.8.19. The presence of non-designated heritage assets and buried archaeological remains is not known at this stage. However, it is anticipated that there are no archaeological features at the site.

3.8.20. Overall, the scheme is anticipated to have a **Slight Adverse** impact on historic environment.

BIODIVERSITY

3.8.21. A primary ecological assessment was undertaken for the scheme. The conclusions from the assessment identified that priority habitats (primarily hedgerows) within the relocated P&R site boundaries could be lost as a result of the proposals.

3.8.22. Protected species with the potential to utilise the varied habitats in the site have been found at the site. These species include breeding birds, (including kingfishers and barn owl), badgers, great crested newts, bats, reptiles, water vole and otter.

3.8.23. It should be noted that GCP is committed to achieving a minimum of 10% Biodiversity Net Gain (BNG), but at this stage this has not been defined for this scheme.

3.8.24. Overall, the impact on biodiversity is anticipated to be **Slight Adverse,** though future commitments around BNG may likely prompt reassessment.

WATER ENVIRONMENT

3.8.25. The nearest main river to the relocated P&R is Quy Water. The Quy Water is classified under WFD as having 'moderate ecological status' and 'moderate physicochemical status', with quality element phosphate being assessed as 'poor'. Also, the watercourse does not support a good 'hydrological regime' (i.e., entire state of water movement).

3.8.26. Although it is recognised that changes in land use might bring about some minor benefits in reducing agricultural runoff and the impact of phosphate (a failing quality element), there is the potential for short-term adverse impacts from the construction works (i.e., sediment deposition) and longer-term impacts (where these are not managed adequately) from road run-off (i.e., oils, greases, heavy metals).

3.8.27. The relocated P&R is predominantly located within areas classified as Flood Zone 1, with only small areas within Flood Zones 2 and 3, so it is therefore anticipated that there will be a limited increase in flood risk as a result of the site.

3.8.28. The impact of the scheme on the water environment is considered **Neutral**.

SUMMARY

3.8.29. The table below summarises the environmental impacts of the relocated P&R.

Table 3-12 – Summary of Environmental Impacts

Environmental Impact	Assessment
Noise	£381k (2010 PV)
Air Quality	£693k (2010 PV)
Greenhouse Gases	£1,012k (PV 2010)
Landscape	Neutral
Townscape	Neutral
Historic Environment	Slight Adverse
Biodiversity	Slight Adverse
Water Environment	Neutral

3.9 SOCIAL IMPACTS

3.9.1. The section below considers the social impacts set out in TAG Unit A4-1, as well as reliability (TAG A1.3), which is presented in the Appraisal Summary Table (AST, see Appendix E) under both Economy and Social impacts, for the relocation and expansion of the P&R site.

RELIABILITY IMPACT

3.9.2. The preferred site will improve reliability for P&R users by enabling car users to access the P&R services further from central Cambridge and hence prior to more congested and unreliable sections of the Newmarket Road corridor. Once on the P&R services, or cycling, priority measures will benefit reliable journeys into central Cambridge.

3.9.3. For remaining car users, as illustrated by the reduction in highway-network kilometres, reliability will be improved through decongestion.

3.9.4. The impact of the scheme on reliability is anticipated to be **Slight Beneficial.**

PHYSICAL IMPACT

3.9.5. The appraisal of physical activity captures the health benefits of a change in the number of people travelling by active modes (i.e., cycling and walking). The expansion of cycle parking and lockers is anticipated to encourage an increase in active mode users wishing to benefit from the facilities along the corridor and at the P&R site.

3.9.6. This will result in associated health benefits and is anticipated to be **Slight Beneficial**.

JOURNEY QUALITY

3.9.7. Journey quality measures the real and perceived physical and social environment while travelling. This includes:

- Traveller care: Aspects such as cleanliness, level of facilities, information and the general transport environment
- Travellers' views: The view and pleasantness of the external surroundings during the journey

- Traveller stress: Frustration, fear of accidents and route uncertainty

3.9.8. The relocated and expanded P&R site will broadly provide the same standard of facilities as currently exist and will not affect travellers' views or traveller stress (which are addressed through other phases of CEA). Therefore, the journey quality impact is anticipated to be **Neutral**.

ACCIDENTS

3.9.9. Based on the approach to quantify MECs as described for the economic appraisal, the monetised impact on accident savings due to modal shift from private car is estimated to be £5.7m (2010 PV).

SECURITY

3.9.10. The scheme will provide cycle lockers and CCTV for the site. However, as the current site also offers these, it is anticipated that the impact on security will be **Neutral**.

ACCESS TO SERVICES

3.9.11. In the longer term it is anticipated that additional P&R services will operate from the site. However, for this appraisal the level of services and the physical accessibility of the relocated P&R site is assumed to be the same as for the current site. Therefore, the impact on accessibility is assumed to be **Neutral**.

AFFORDABILITY

3.9.12. Based on the transport modelling outputs the estimated reduction in highway-kilometres will result in reduced vehicle operating costs for drivers. It is assumed that the parking costs and bus fares do not change. Therefore, overall the impact of the scheme on affordability is estimated to be **Slight Beneficial.**

SEVERANCE

3.9.13. It is not anticipated that the scheme will create or remove barriers to movement. Therefore, the impact of the scheme on severance is estimated to be **Neutral.**

OPTION VALUES

3.9.14. The proposed scheme does not introduce new public transport options and therefore the impact is considered to be **Neutral.**

SUMMARY

3.9.15. The table below summarises the social impacts of the scheme.

Table 3-13 – Summary of Social Impacts

Social Impact	Assessment
Reliability	Slight Beneficial
Physical Activity	Slight Beneficial
Journey Quality	Neutral
Accidents	£5,712k (PV 2010)
Security	Neutral
Access to Services	Neutral
Affordability	Slight Beneficial
Severance	Neutral
Option and Non-Use Values	Neutral

3.10 DISTRIBUTIONAL IMPACTS

3.10.1. Distributional Impacts (DIs) consider the variance of transport intervention impacts across different social groups. The analysis of DIs is a constituent of the AST. Both beneficial and/or adverse DIs of transport interventions need to be considered, along with the identification of social groups likely to be affected.

3.10.2. In terms of distributional analysis, the categories that need to be considered include user benefits, accidents and affordability, together with the effects of the scheme on local noise and air quality. The effect of these impacts is assessed for the following social groups:

- Income distribution;
- Children;
- Young adults;
- Older people;
- Disabled;
- Black and minority ethnic groups;
- Those without access to a car; and
- Carers.

3.10.3. Based on the proportionate approach set out in TAG Unit A4.2, the DI assessment for the P&R element of the Newmarket Road scheme has identified the likelihood of impacts for each indicator. Where it is anticipated there will be impacts a qualitative commentary identifying the social groups most likely to be affected has been provided.

The findings of this DI assessment are set out in Table 3-14 below.

Table 3-14 – Distribution Impact Assessment

Indicator	Appraisal output criteria	Potential impact	Qualitative Comments	Assessment
User benefits	The TUBA user benefit analysis software or an equivalent process has been used in the appraisal; and/or the value of user benefits Transport Economic Efficiency (TEE) table is non-zero.	Yes, positive	Outputs from Paramics modelling have been used to estimate user benefits. These show that in the AM peak, about 61% of car trips shifted to the P&R were generated from the east/north of A14 junction 35, 4% of the trips were generated from Teversham, and 10% of these trips were generated from the Milton/Waterbeach area. In the PM peak, about 62% of car trips shifted to the P&R had destinations at the east/north of A13 junction 35, 5% at Tevesham, and 9% at the Milton/Waterbeach area.	In general, the trip distribution demonstrates that the P&R mainly attracts traffic from/to east of Cambridge, which is reasonable considering the location of the P&R and the estimated journey time saving from not driving into central Cambridge.
Noise	Any change in alignment of transport corridor or any links with significant changes (>25% or <-20%) in vehicle flow as an indicator of significant change.	Yes, could be negative or positive	The relocation of the P&R will change the use of the land of the site and introduce vehicles and associated noise. Mode transfer to P&R will reduce highway traffic noise.	The relocation of the P&R will introduce noise to the site which may be experienced in the village of Teversham. There will be localised reductions in noise due to reductions in traffic levels.
Air quality	Any change in alignment of transport corridor or any links with significant changes in vehicle flow, speed or %HGV content: ▪ Change in 24-hour AADT of 1000 vehicles or more ▪ Change in 24-hour AADT of HGV of 200 HGV vehicles or more	Yes, could be negative or positive	The relocation of the P&R will change the use of the land of the site and introduce vehicles and emissions, while reducing them at the current site. Mode transfer to P&R will reduce highway air quality impacts.	The relocated P&R will be 450m closer to Teversham than the existing P&R. This is not expected to adversely impact on air quality for the village. There will be localised improvements in air quality due to

Indicator	Appraisal output criteria	Potential impact	Qualitative Comments	Assessment
	▪ Change in daily average speed of 10kph or more ▪ Change in peak hour speed of 20kph or more Change in road alignment of 5m or more			reductions in traffic levels.
Accidents	Any change in alignment of transport corridor (or road layout) that may have positive or negative safety impacts, or any links with significant changes in vehicle flow, speed, %HGV content or any significant change (>10%) in the number of pedestrians, cyclists or motorcyclists using road network.	Yes, positive	It is anticipated that there will be an overall reduction in highway-kilometres travelled as a result of the scheme, which will reduce the number of highway accidents.	The scheme will benefit those who are more at risk of highway accidents, e.g. young adults and older people.
Security	Any change in public transport waiting/ interchange facilities including pedestrian access expected to affect user perceptions of personal security.	No	The relocated P&R will provide the same facilities as the existing P&R site to ensure personal security.	No further assessment
Severance	Introduction or removal of barriers to pedestrian movement, either through changes to road crossing provision, or through introduction of new public transport or road corridors. Any areas with significant changes (>10%) in vehicle flow, speed, %HGV content.	No	The relocated P&R is being provided in an offline location and therefore no severance issues are anticipated.	No further assessment.
Accessibility	Changes in routeings or timings of current public transport services, any changes to public transport provision, including routeing, frequencies, waiting facilities (bus stops / rail stations) and rolling stock, or any indirect impacts on accessibility to services (e.g. demolition & re-location of a school).	No	The level of services and the physical accessibility of the relocated P&R site will be the same as for the current site.	No further assessment.

Indicator	Appraisal output criteria	Potential impact	Qualitative Comments	Assessment
Affordability	In cases where the following charges would occur; Parking charges (including where changes in the allocation of free or reduced fee spaces may occur); Car fuel and non-fuel operating costs (where, for example, rerouting or changes in journey speeds and congestion occur resulting in changes in costs); Road user charges (including discounts and exemptions for different groups of travellers); Public transport fare changes (where, for example premium fares are set on new or existing modes or where multi-modal discounted travel tickets become available due to new ticketing technologies); or Public transport concession availability (where, for example concession arrangements vary as a result of a move in service provision from bus to light rail or heavy rail, where such concession entitlement is not maintained by the local authority).	Yes, could be positive or negative	There will be no charge for parking at the site and bus fares will remain at the current level. As a result of mode shift drivers will gain VOC savings and potentially parking charges. (Use of the P&R will also avoid payment of the Making Connections charge when it is introduced.)	For the socio-economic groups for whom affordability is most challenging, the provision of affordable sustainable and active means to access central Cambridge will be beneficial.

3.11 VALUE FOR MONEY STATEMENT

3.11.1. In recognition of the role of the Newmarket Road P&R scheme as part of the wider CEA programme and city-wide initiatives to deliver modal shift to active and sustainable modes of transport and the limitations of the currently available highway modelling, the appraisal has focused upon the sustainable aspects of the P&R scheme, assessed quantitatively and qualitatively.

3.11.2. The economic appraisal of the relocation and expansion of the P&R site produces a BCR of 3.0:1. The mode shift from car use to the P&R has significant benefits for both those who shift and those who remain on the highway network but benefit from less congestion. Together, these are estimated to deliver over £30m (2010 PV) of benefits for the 60-year appraisal period. Further welfare benefits are derived from the reduction in the cost of externalities due to lower highway-kilometres. These amount to around £8m (2010 PV), with accident savings comprising the majority of these.

3.11.3. Overall, the benefits amount to £54m (£2010 PV), including £19m derived from increased bus revenue due to the increase in P&R users. The capital cost of the scheme is £16m (£2010 PV), which includes 30% optimism bias, to align with the estimated risk allowance. (This is a more conservative view than applying the 23% uplift identified in guidance for a scheme of this type at this stage of development.) Operating costs for the P&R are estimated to cost around £2m (£2010 PV) over the appraisal period.

3.11.4. Sensitivity tests on the economic appraisal demonstrate that the BCR remains at 2:1 or better if the additional bus revenue is excluded (BCR 2.1:1), the appraisal period is shortened to 30 years (2.0:1) or P&R operating costs are doubled (2.7:1). In an upside test of increased fares, the BCR increases to 3.6:1.

3.11.5. There are also other impacts not captured or monetised in the appraisal that positively impact on the case for the scheme, strengthening the value for money implied by the BCR. These include benefits in terms of reliability, encouraging physical activity and assisting affordability. Potential disbenefits could result from impacts on biodiversity and historic environment from the introduction of the P&R site on a greenfield location. Overall, the scheme is considered to support GCP's policy ambitions to promote sustainable modes and deliver mode shift from private vehicles in order to ensure the ongoing economic growth of the region. It is therefore considered that the scheme will achieve High Value for Money.

4 FINANCIAL CASE

4.1 INTRODUCTION

4.1.1. This chapter presents the Financial Case for the Newmarket Road P&R phase of the CEA programme. It sets out the estimated cost for the delivery of the scheme and how it will be funded. The scheme description is provided in the Strategic Case and the value for money case is set out in the Economic Case.

4.1.2. The outturn cost estimate is based on the shortlisted Concept Design Layouts (Appendix A) and assumes construction through 2026, with it opening by the end of the year.

4.2 CAPITAL COSTS

4.2.1. Capital costs have been estimated by WSP for the two shortlisted concept options. It is estimated that the Newmarket Road P&R scheme will cost £31-33m, including risk and an allowance for inflation. Table 4-1 sets out a summary of the scheme costs. (Further details are provided in Appendix F).

4.2.2. No estimate for land purchase has been included as it is anticipated that negotiations with the landowner over their wider development proposals and the release of the current P&R site will result in the proposed site being available at negligible cost. This assumption will be kept under review as the scheme is developed.

Table 4-1 – Summary of Scheme Costs

Cost item	Option 1 (£m)	Option 3 (£m)
Base Construction Costs	10.9	11.4
Indirect Construction Costs (e.g., prelims, traffic management)	4.9	5.1
STATS	0.8	0.9
Professional Fees	3.2	3.3
Total excl. Risk & Inflation	***19.8***	***20.7***
Risk	5.9	6.2
Future Inflation	3.6	3.7
Inflation Contingency	1.9	2.0
TOTAL CONSTRUCTION BUDGET	**31.1**	**32.6**

4.3 BUDGET AND FUNDING

4.3.1. The Greater Cambridge City Deal is one of a number of 'City Deals' agreed by central government in 2013 and is worth up to £500 million in funding to 2030. City Deals provide a funding framework for central government and local partners to agree investment programmes, centred on the promotion of local economic growth and development.

4.3.2. Funding for the CEA programme is currently available from the GCP, who are responsible for allocating the funds awarded as part of the Greater Cambridge City Deal. This will cover the requirement for the Newmarket Road P&R scheme. The funding profile for the scheme is outlined below.

Table 4-2 – Funding Profile

	2022-23	2023-24	2024-25	2025-26	2026-27	**Total**
Option 1 (£m)	0.4	0.9	1.3	8.8	19.7	**31.1**
Option 3 (£m)	0.4	0.9	1.4	9.2	20.6	32.6

4.3.3. It is expected that there is opportunity for the GCP to generate local funding, for example through Section 106 agreements with developers, and explore private funding opportunities in order to leverage the maximum benefit from the City Deal funding. The level of local developer contribution to be secured will vary on a site-by-site basis and will depend on the levels of impact, and the extent to which a development benefits from the scheme.

4.4 OPERATING AND MAINTENANCE COSTS

4.4.1. The operation and maintenance of the current Newmarket Road P&R site, along with the others in Cambridge, is overseen by CCC. It is proposed that this arrangement continues for the expanded and relocated P&R site. The relocation and expansion will increase the current maintenance and operating cost for the facilities due to the larger site, though efficiency savings are envisaged due to the use of the latest design principles and technology, such as LED lighting.

4.4.2. Given the commercial sensitivity of the contractual arrangements made by CCC with the private supplier contracted to deliver the facility's services and current uncertainty over the exact requirements for maintenance and operations at this stage, an assumed cost has been used for the purposes of the economic appraisal, as described in the Economic Case, based on discussions with CCC.

4.4.3. Taking a conservative view, it is estimated that the additional expenditure for maintenance and operating costs for the P&R could be around £150,000 per annum (in today's prices) and grow in line with inflation over time. This additional cost will fall to CCC in the first instance with some offsetting through the revenue received by the council from the bus operators for departure charges for using the P&R.

4.4.4. It is assumed that renewal costs, incurred from time to time, will be the same as the current costs for the P&R site.

5 COMMERCIAL CASE

5.1 INTRODUCTION

5.1.1. This chapter presents the Commercial Case for the Newmarket Road P&R scheme, part of the CEA programme of sustainable transport improvements. It describes the proposed procurement approach for the preferred contractor to undertake the delivery of the scheme.

5.2 OUTPUT BASED SPECIFICATION

5.2.1. As set out in the Strategic Case, objectives have been established for the scheme. The proposed scheme has been developed to achieve these objectives, focused on increasing travel by sustainable and active modes on the Newmarket Road corridor and meeting the demands from growth east of Cambridge.

5.2.2. Detailed design will be undertaken as part of the ongoing scheme development, and the output specification will be confirmed during the procurement and contract management process. At this stage the Concept Design Layouts reflect the provision of:

- Surfaced car parking to provide approximately 1,750 parking spaces (which will include allocated spaces for disabled, parent and child, and Electric Vehicle (EV) charging spaces)
- Single storey building (office, waiting space, toilets)
- Cycle lockers and covered cycle parking to provide for approximately 150 bicycles
- New signal controlled vehicle access junction on Newmarket Road
- Attenuation pond

5.3 PROCUREMENT APPROACH

5.3.1. It is proposed that the procurement approach will be broadly consistent with the approach proposed for the delivery of the Newmarket Road corridor improvement works (Phase A1 of the CEA programme) and that has been successfully employed for other recent transport schemes, e.g., Milton Road and Histon Road. Under this approach GCP will appoint a delivery contractor.

5.3.2. Early contractor involvement will be incorporated with the traditional approach of separate contracts for the design and construction works. This allows close control of the design process by the client, but also enables the delivery contractor to influence the design to reduce risks and cost by using their experience of the buildability and risks of designs.

5.3.3. To procure the contractor GCP will use one of several sourcing options, which include:

- Cambridgeshire County Council's Highways Framework Contract;
- Eastern Highways Alliance; and
- Open tender.

5.3.4. CCC's framework delivery contractor is Milestone (formerly Skanska) who are expected to deliver the proposed works for Newmarket Road. They have demonstrated experience in carrying out highways / pavement works and the capability to administer and successfully complete works of similar value to the scheme and work adjacent to live carriageways and public interfaces.

5.3.5. The Eastern Highways Alliance is a tried and tested framework for which CCC is a member and can use. The Framework has been designed to meet the requirements of current and potential future Alliance members for project delivery specifically in terms of cost, quality and timescales.

5.3.6. Pursuing an open tender route would provide the opportunity to expand the approved suppliers list and develop new partnerships for the delivery of future works. The process allows the basis for the Most Economically Advantageous Tender to be defined to reflect the client's priorities and for the quality and competency of the tenderers to be established at the time of the tender.

5.3.7. The preferred procurement approach will be determined based on consideration of the specific nature of the scheme, including construction risks, the stage that the project is at in its development and importantly, the level of risk in the project and the appetite to accept or transfer it to a contractor. The approach will ensure that the contractual arrangements for the delivery of the scheme places risks with the party best positioned to deal with them.

5.4 RISK ALLOCATION AND TRANSFER

5.4.1. A risk register has been produced for the overall CEA programme and is updated through the course of the project. This includes specific risks pertaining to Phase A2, the Newmarket Road P&R scheme.

5.4.2. At this 'Concept Design Layouts' stage for the scheme, the highest rated residual risk for the commercial delivery of the Newmarket Road P&R scheme relates to scheme cost escalation due to uncertainties over the scope of the work required. This includes primary impacts such as unknown utility diversions, land costs, and the effects of inflation, which are currently highly uncertain.

5.4.3. Based on the experience of the delivery of the schemes for Milton Road and Histon Road, which utilised the Highways Framework Contract described above, construction risk of the P&R site will be shared between GCP and the contractor on an agreed basis with the party best placed to manage the risk bearing it and with the scheme budget being closely monitored.

5.5 TIMESCALES

5.5.1. An indicative timeline for delivery of the Newmarket Road P&R scheme has been provided in the Management Case. As shown, the key procurement stages are:

Table 5-1 – Key Procurement Stages

Stage	Programme
Tender process	Oct - Nov 2025
Award of Tender	Dec 2025
Construction of P&R scheme:	Feb – Nov 2026
Opening of P&R	Dec 2026

5.6 CONTRACT MANAGEMENT

5.6.1. Management of the contracts for the design and delivery of the scheme is undertaken by the Project Manager, who is employed by CCC and has day to day responsibility for delivery of the scheme.

6 MANAGEMENT CASE

6.1 INTRODUCTION

6.1.1. This chapter forms the Management Case for the Newmarket Road P&R phase of the CEA programme. It describes how the scheme will be delivered through project management best practice, describes the engagement undertaken with stakeholders, presents the key risks and demonstrates that an appropriate governance structure is in place to oversee the project.

6.2 EVIDENCE OF SIMILAR PROJECTS

6.2.1. CCC and the GCP have an extensive record of successfully delivering large-scale transport projects across the county in recent years, as described in Table 6-1. The successful completion of these projects demonstrates the promoter's ability to deliver both major public transport and active travel corridor infrastructure improvements.

6.2.2. There have been important lessons learnt in the delivery of these projects, which will be carried forward in the delivery of the Newmarket Road P&R scheme. These include engagement with stakeholders, collaborative working with the delivery contractor and applying a flexible yet consistent approach for similar schemes.

Table 6-1 – Relevant Project Experience for Delivery of the Newmarket Road P&R scheme

Project	Description	Cost
Longstanton and St Ives Park & Ride	Two P&R sites were constructed in 2011 alongside the Cambridgeshire Guided Busway, providing connectivity to Cambridge and Huntington. These sites have been a success in intercepting traffic and have both also been expanded beyond their first built capacity. The Longstanton P&R site now provides 350 parking spaces. St Ives P&R has capacity for 1,000 vehicles. Covered cycle parking is also provided at both sites. In addition to the number of spaces being increased as a result of the schemes' success, the number of bus services serving these sites has also been increased to ensure the service is efficient in catering for the increased demand; buses now run into Cambridge from both sites every 7-8 minutes (eight services per hour).	Estimated at £9m for both sites[15]
Milton Park & Ride	This site was constructed to replace the Cowley Road P&R site. The opening of the new site at Milton was therefore an immediate success in terms of attracting demand. This site has approximately 800 parking spaces and a heated waiting area building with toilet and baby changing facilities.	£3.1m

[15] This is an estimate as the costs were part of a wider package of busway costs.

	The scheme was completed within just two years from the planning application being submitted in October 2006, with construction commencing in Summer 2007 and the site opening in Spring 2008. This timescale was for a 531-space car park and building. Due to the success of the scheme, the scale of the site has increased beyond its first built capacity and now provides 792 car parking spaces to cater for the high level of continued demand.	
Histon Road	The Histon Road project provides better bus, walking and cycling facilities for those travelling on this busy key route into Cambridge. The scheme includes: - A new bus lane from Blackhall Road to Carisbrooke Road - New bus stop bypasses for cyclists - Improved cycle lanes - 2 new pedestrian crossings - Removal of on-street parking	£10.6m[16]
The Cambridgeshire Guided Busway	This Busway provides a high-quality public transport connection between Huntingdon and St Ives, to the north-west of Cambridge, and Addenbrooke's Hospital and Trumpington P&R to the south of Cambridge. Access to Cambridge city centre is provided via on-street running. The overall route is 42km long with 25km of that being guided busway and 17km of on-street provision including Public Transport Vehicle priority measures. Construction began in July 2006 with the busway opening in August 2011. Although there were challenges during the delivery of the scheme, learning from this can benefit the delivery of future significant transport measures in the county.	£150m[17]

6.3 PROGRAMME / PROJECT DEPENDENCIES

6.3.1. As described in Chapter 1, the Newmarket Road P&R scheme is part of Phase A of the CEA programme. While being part of the programme, the relocation and expansion of the P&R site is not physically dependent on Phase A1. However, as a programme, the cumulative effect of delivering all phases will enable the greatest level of benefits to the CEA corridor to be realised through the improvements to walking, cycling and public transport on Newmarket Road.

6.3.2. Following the development of the Cambridge Airport site and the provision of a high-quality public transport route to serve it (Phase 2), the P&R site will provide facilities for additional and revised bus services, as well as active travel options, to serve its immediate catchment and those travelling in from east of Cambridge. Further, as part of the CEA programme, which is one of the four public

[16] https://www.greatercambridge.org.uk/transport/transport-projects/histon-road/histon-road-background
[17] This is the total cost of the Cambridgeshire Guided Busway and includes a £109m contribution from CCC.

transport corridor schemes which GCP proposes, the P&R scheme will make a key contribution in delivering the overall success of the Making Connections and City Access programme.

6.4 GOVERNANCE, ORGANISATIONAL STRUCTURE & ROLES

6.4.1. To date, the development of the Newmarket Road P&R scheme has been within the CEA programme and has been overseen by the following structure.

- The overall scope of the project is set by the GCP Executive Board; and
- The Project Manager has full day to day responsibility for delivery of technical work streams and is employed by CCC.

6.4.2. The overall project management structure is set out hierarchically in the table below:

Table 6-2 – Overall Project Management Structure

Body	Function
GCP Executive Board	Overall Strategic Direction of the Greater Cambridge Partnership (GCP)
GCP Assembly	Strategic and local advisory body for Greater Cambridge Partnership (GCP)
Infrastructure Steering Group	GCP officer level programme board
Programme Manager	Technical and procedural oversight of projects
Project Manager	Day to day management of each project

6.4.3. At the City Deal level, the GCP Executive Board consists of the Leader or equivalent of each of the partner organisations, as the key decision-making group. There is also a 15-person Assembly with appropriate representation from the Local Authorities and other stakeholders, which plays an advisory and scrutiny role.

6.4.4. A key role of the Executive Board is to agree and oversee the delivery of a programme of major schemes that will help to achieve the GCP aims and support the sustainable growth and continued prosperity of the Greater Cambridge city-region, in line with national and local policy objectives and the LEP's overarching economic strategy for the area. In particular the Executive Board:

- Takes responsibility for ensuring Value for Money is achieved;
- Identifies a prioritised list of investments within the available budget;
- Makes decisions on individual scheme approval, investment decision making and release of funding, including scrutiny of individual scheme Business Cases;
- Monitors the progress of scheme delivery and spend; and
- Actively manages the budget and programme to respond to changed circumstances (scheme slippage, scheme alteration, cost increases, etc.).

6.4.5. CCC, Cambridge City Council and South Cambridgeshire District Council have three representatives on the Assembly, with political balance in each Authority's membership reflecting the balance of the political parties on the relevant Council. The other three places on the Assembly are filled by members representing various stakeholder groups.

6.4.6. The GCP is focused on both programme and project level governance with the principle that issues of key importance at both the programme and project level are addressed at the highest levels of governance but that for other issues of a more technical nature, officer level structures at the project and programme level are empowered to guide development.

6.4.7. At the programme level an officer technical group made up of key officers and stakeholders develops the overall scheme prioritisation and seeks to manage programme level risks and capture shared benefits. The Project Manager in consultation with the Programme Manager raise programme level issues with the GCP Executive Board and Joint Assembly as required.

6.4.8. At the project level, a Project Team works up scheme details and reports to a Project Manager who guides the overall development of the project at the technical level, in combination with key officers. At the project gateways, reports are made to the City Deal Executive Board on progress and seek decisions on key matters which are project related.

6.5 PROGRAMME / PROJECT PLAN

6.5.1. This section sets out the project plan with key milestones. A full project programme is provided in Appendix G.

6.5.2. The project has been governed using the PRINCE 2 project method. It will pass through a number of gateways to ensure that progress is approved, which are as a minimum, the GCP key decision points. The Executive Board may at its discretion create additional gateways if it considers this necessary for the effective governance and delivery of the project.

6.5.3. The scheme programme for Phase A2 including indicative timescales is set out below:

Table 6-3 - Key Project Milestones

Stage	Programme
Stakeholder Engagement	Oct - Dec 2022
EIA Screening and Scoping Note	Nov 2022 - Feb 2023
Ecological Surveys	Mar 2023 – Mar 2024
Preparation of Environmental Impact Assessment	Mar – May 2024
Submit Outline Planning Application	June 2024
Anticipated Outline Planning Consent (assumes no Public Inquiry)	Feb 2025
Anticipated Reserved Matters Consent	Oct 2025
Tender Process	Oct – Nov 2025
Full Business Case	Oct – Dec 2025
Award of Tender	Dec 2025
Construction of P&R scheme	Feb – Nov 2026
Opening of P&R	Dec 2026

6.6 ASSURANCE AND APPROVALS PLAN

6.6.1. There are a number of key milestones in the Project Plan where internal and/or external approvals will be required in order for the project to progress. As noted above, the project will pass through a number of gateways to ensure that progress is approved.

6.6.2. GCP have developed an assurance framework for the Greater Cambridge City Deal that outlines the proposed membership, responsibilities, processes and principles that will be in place for agreeing and overseeing the delivery of a robust transport infrastructure programme as part of the overall City Deal goals of integrating transport and strategic spatial planning. Local partners are committed to ensuring that robust systems and processes will be in place in line with DfT guidance to develop and agree a deliverable programme that offers value for money.

6.6.3. The framework ensures compliance with DfT's minimum requirements for Assurance Frameworks.

6.7 COMMUNICATION AND STAKEHOLDER MANAGEMENT

6.7.1. This section sets out the strategy for developing communications and stakeholder management on the CEA programme. Effective communication is critical to the success of the project. All communication activities are signed off by the Project Manager. The Communications Plan is guided by the principle of the City Deal wide communication strategy. The strategy outlines how the project will ensure that all internal and external stakeholders are informed of relevant project information. The purpose of the strategy is to ensure that accurate and timely messages about the project are disseminated to a range of identified stakeholder groups. Project communication is governed through the Communications Plan as follows:

Table 6-4 – Communication Methods

Audience	Type of Communication	Frequency	Responsibility
General Public	Formal Consultation Regular website updates on project progress	At least 2 formal consultations As Required	CCC Communications Team
Technical officers CCC	Project Team Meetings Ad Hoc technical meetings	Regular Meetings As Required	Project Manager
Other Key Stakeholders	Ad Hoc Meetings	As Required	Project Manager
Members	Reports Briefing Sessions	As per Programme milestones	Project Manager
General Correspondence	Letters, Emails, Social Media	As Required	Project Manager / CCC Communications Team

6.7.2. Key stakeholders have been identified and involved in the delivery of the project in a number of ways, as described in the Strategic Case. Public and stakeholder engagement is an important means of solving problems and making decisions that directly impact upon living, working, using services and doing business in the local area. Such engagement may include informing, consulting with, involving, collaborating with and empowering stakeholders to understand the issues to enable them to make informed choices.

6.7.3. The key objectives of the scheme's stakeholder management are to:

- Keep stakeholders aware of the scheme's progress and give an opportunity for feedback to help gain scheme approval;
- Give an opportunity for stakeholders to provide views and recommendations for improvements so that the scheme meets stakeholder requirements as far as is practical;
- Meet statutory requirements;
- Increase public and stakeholder awareness of the scheme;
- Provide consistent, clear and regular information to those affected by the scheme, including the nature of any scheme-related impacts and when and how it will affect people or groups both during delivery and once operational; and
- Address perceptions of the scheme where these are inconsistent with the scheme objectives and forecast outcomes.

6.8 PROGRAMME / PROJECT REPORTING

6.8.1. The fundamental process of regular project reporting is through the Project Manager's Report. The Project Manager's Report is presented at relevant meetings of the GCP Executive Board and GCP Assembly, as identified in the project programme. The Project Manager's Report summarises progress and change on the project.

6.8.2. The following is the typical format of the Project Manager's Report:

- Activity Report – progress of work streams;
- Key activities in the forthcoming period;
- Budget update;
- Review of strategic risks/ issues; and
- Identification of key decisions required from the GCP Executive Board.

6.9 RISK MANAGEMENT STRATEGY

6.9.1. This section describes the arrangements for risk management and the effectiveness of the strategy so far. Risks are events that have not happened but may happen, whereas issues are known to have happened. Broadly speaking there are two types of risks in the context of this project, which are as follows:

- Strategic Risks – these are presented in the Project Manager's report and are those risks which impact the overall delivery of the project scope; and
- Technical Risks – these are associated with specific work streams and are managed by the Project Manager.

6.9.2. The risk register sets out the following:

- Details of the risk;
- The likelihood of the risk;
- The impact of the risk;
- The mitigation strategy, including risk owners; and
- An overall assessment of the current status of the risk or issue which will be one of the following categories:
  - Red – significant and live risk with high potential to occur and to impact project delivery either at the strategic or technical level;
  - Amber – risk and issue that has lower potential to occur and lower impact; and
  - Green – risk is unlikely to occur and or has no major impact.

6.9.3. Risk management processes have been employed and recorded throughout the project lifecycle. The risk register is monitored and, if necessary, updated at regular workshops and meetings. The Project Manager has responsibility for overseeing the Risk Management process. DfT Major Scheme guidance has been followed in order to identify, assess and mitigate risks.

6.9.4. The current project risk register is provided in Appendix H. At this 'Concept Design Layouts' stage of the project, the highest rated risks identified for the Newmarket Road P&R scheme are:

- Acquisition of land – Acquisition of land may not be achieved through agreement and require CPO process;
- Foul sewer availability to address risk of discharge into the environment from toilets and welfare facilities (during construction and operation);
- Poor ground conditions requiring increased highway/earthwork/structural foundations;
- Potential for archaeological remains to be identified which could require extensive intrusive investigation.

6.9.5. Mitigation measures include the following:

- Negotiations with land owner to acquire land by agreement;
- Early consultation with the water company and/or Environment Agency;
- Undertaking a preliminary GI;
- Undertaking a desktop study to inform the planning submission.

6.10 SUMMARY OF MANAGEMENT CASE

6.10.1. An appropriate governance structure is in place for the delivery of the scheme. GCP has an Executive Project Board and Assembly aligned with best practice guidance on scheme management. The Board's primary function is decision-making and review. A Project Manager, reporting to the Programme Manager and ultimately the Board, is in place to deal with the day-to-day planning and delivery of the project.

6.10.2. A project programme has been developed setting out the key project tasks and their duration and interdependencies, key milestones and gateways. It acts as a live document, with progress being monitored on a weekly basis by the Project Manager.

6.10.3. Key stakeholders have been identified and a stakeholder management plan has been adopted, consistent with other GCP projects.

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