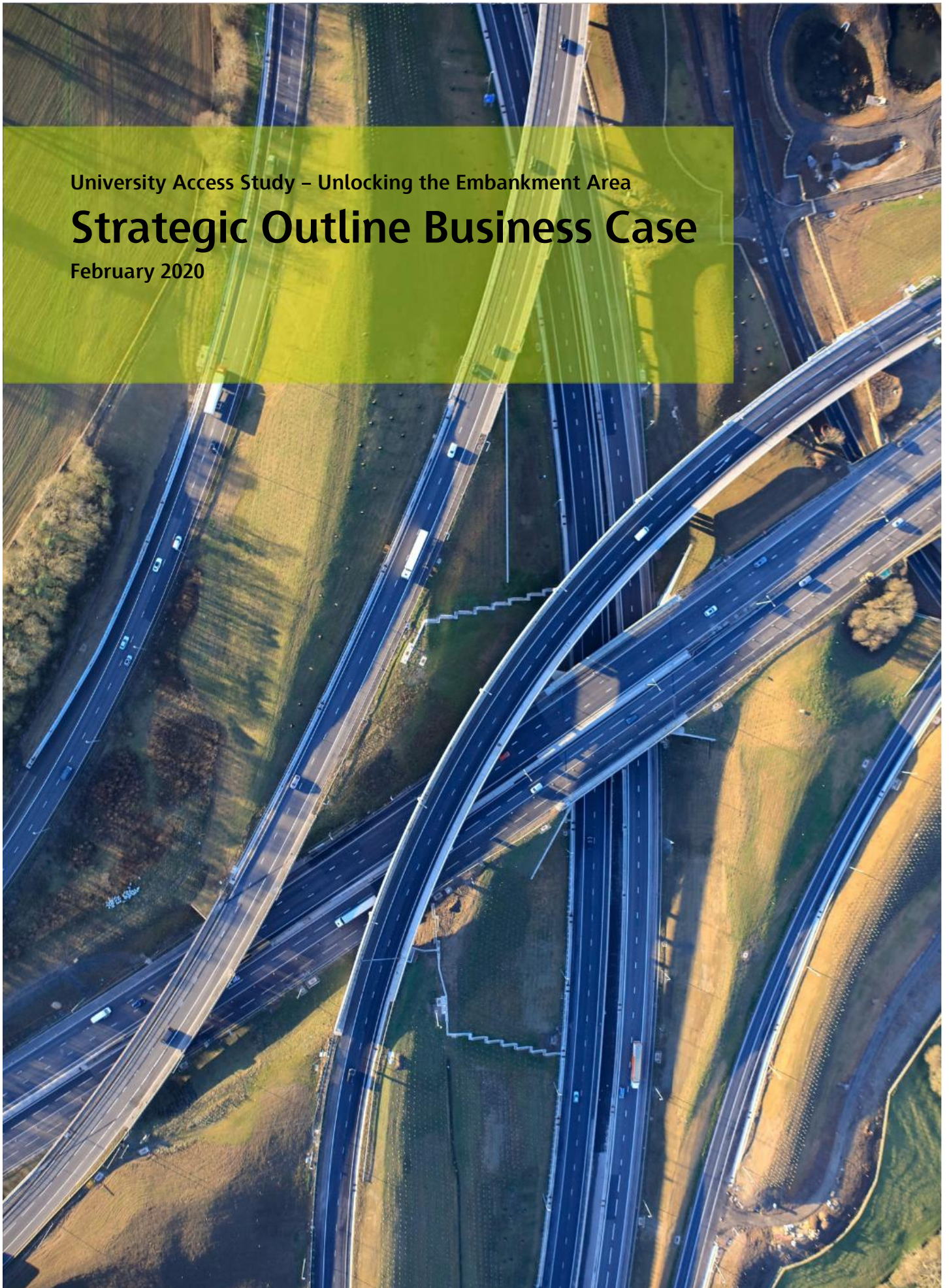


University Access Study – Unlocking the Embankment Area

# Strategic Outline Business Case

February 2020





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## Executive Summary

This Strategic Outline Business case makes a strong strategic and economic case for improvements in the University Access Study Area.

The Embankment Area is to the east of Peterborough City Centre, south east of the cathedral, and spans 29.2 hectares. The area boundary includes Bishop's Road to the north, the A1139 Frank Perkins Parkway to the east, and the River Nene to the south.

The City Centre is entering a new and exciting phase in its development, a phase that will deliver significant levels of growth, and the Embankment Area is identified as an opportunity area by Peterborough City Council, and includes proposals for a new Peterborough University, as well as supporting infrastructure such as the Fletton Quays Footbridge, a new pedestrian and cycle bridge connecting Fletton Quays to the Embankment Area.

The University Access Study focuses on the highway network which provides access to the Embankment Area, including Junction 5 of the A1139 Frank Perkins Parkway and the surrounding highway network including Bishop's Road, Vineyard Road and Boongate. It will also consider the southern part of Fengate including the Boongate / Fengate Junction, which also connects the Embankment Area to Fengate.

The routes included within the Study Area all connect the City Centre with the A1139 Frank Perkins Parkway via Junction 5. The routes are sensitive to local traffic conditions, and if one route is experiencing high levels of congestion and delay, vehicles will use the alternative route to Junction 5.

Evidence of existing and future conditions at key junctions within the Study Area demonstrate that there is congestion and delay during the peak hours, and these are forecast to get worse with the proposed growth if no improvements are made.

Two packages of schemes have been identified which will add capacity to the highway network and address the existing problems of peak hour congestion and delay at key junctions within the Study Area. Additionally, they will help facilitate development at the Embankment Area and across the wider City Centre area.

The Economic Assessment demonstrated that Package 1 achieves Very High Value for Money, whilst Package 2 achieves Medium Value for Money. The Value for Money for both packages, especially Package 2, is expected to increase further as additional Economic Assessment and Design work is undertaken at subsequent stages of the Business Case. Package 1 has a stronger BCR, although this is because of the higher costs associated with Package 2.



However, the assessment of Environmental and Social factors for Package 1 and Package 2 showed there were some key environmental factors that require consideration when determining a preferred option. The new northbound off-slip in Package 1 will require the removal of ten well-established Corsican Elm trees, which have a high community asset value. There will also be a loss of green space at Bishop's Road Recreation Area. The improvements identified in Package 2 upgrade the existing infrastructure within the Study Area. Boongate dualling will utilise land that is currently highway verge and was earmarked for the dualling of Boongate since the New Town phase of development.

The Strategic Outline Business Case is set out in compliance with the Department for Transport's (DfT) Five Case Business Model.

### Strategic Case

The Strategic Case has considered the policy context in which a scheme for the Study Area has been developed. As well as policy, the need for intervention is explained. Evidence of existing and future conditions within the Study Area demonstrate that there is congestion and delay during the peak hours, and these are forecast to get worse with the proposed growth if no improvements are made. If the transport infrastructure is not improved and increased capacity is not provided, it will impact on the delivery of the proposed development.

The policy review and data of existing issues has been used to identify scheme objectives, and a long list of potential improvement options have been assessed against these objectives using the DfT's Early Assessment Sifting Tool (EAST). The scheme objectives are set out beneath.

Primary objectives include:

- **Tackle congestion and reduce delay:** Tackle congestion at key pinch points across the Study Area and reduce delay on routes to the Embankment Area
- **Support Peterborough's Growth Agenda and facilitate the development of the Embankment Area including the University of Peterborough:** Ensure the planned University development and other growth aspirations at the site can be accommodated within the highway network.

In addition to the primary objectives, several secondary objectives were identified:

- **Positively impact traffic conditions on the wider network:** Positively impact the performance of local routes impacted by the traffic and congestion in and around the Study Area
- **Improve Road Safety:** Reduce personal injury accidents and improve personal security amongst all travellers
- **Limit impact on the local environment and enhance biodiversity:** Mitigate any adverse impact of a scheme and enhance biodiversity net gain within the Study Area.

The Strategic Case concludes with details of the modelling and assessment work to identify Package 1 and Package 2. At this stage a preferred option could not be determined as both packages increase the capacity of the highway network and reducing existing and future delay at junction across the network to enable growth at the Embankment Area. Therefore, both Package 1 and Package 2 were considered within the Economic Assessment.

Full details of the modelling and assessment work undertaken to identify and assess the impact of Package 1 and Package 2 can be found in the University Access Study Option Assessment Report (OAR).

Package 1 includes the following improvements:

- New northbound off-slip linking the A1139 Frank Perkins Parkway with Bishop's Road (Junction 4a)
- Junction 38 – 40m flare extension on Bishop's Road East
- Junction 5 – signalisation of the A1139 Frank Perkins Parkway southbound off-slip
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.

Package 2 contains the following improvements:

- Junction 5 – signalisation of A1139 Frank Perkins Parkway northbound and southbound off-slips, extension of the northbound off-slip left turn flare by approximately 20m, and provision of a left dedicated lane from the A1139 Frank Perkins Parkway northbound off-slip to Boongate West
- Junction 38 – 40m flare extension to Bishop's Road East
- Boongate West – dualling between Junction 5 and Junction 39
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – Creation of a roundabout.

## Economic Case

The Economic Case demonstrates that Package 1 achieves a Benefit to Cost Ratio (BCR) of **5.223** and offers **Very High Value for Money** based on transport user benefits alone. Package 2 achieves a Benefit to Cost Ratio (BCR) of **1.574** and offers **Medium Value for Money** based on transport user benefits alone.

A breakdown of the scheme BCR is provided beneath.

### AMCB Comparison Package 1 and Package 2

Value (£'000s) 2010 prices, benefits discounted to 2010	Package 1	Package 2
<b>Benefits</b>		
Greenhouse Gases	557	479
Consumer Users (Commuting)	7,160	8,892
Consumer Users (Other)	15,127	16,362
Business Users/Providers	10,383	12,598
Indirect Taxes	-1,082	-913
<b>Present Value of Benefits (PVB)</b>	<b>32,145</b>	<b>37,418</b>
<b>Costs</b>		
Broad Transport Budget	6,154	23,776
<b>Present Value of Costs (PVC)</b>	<b>6,154</b>	<b>23,776</b>
<b>Net Benefit / BCR Impact</b>		
<b>Net Present Value (NPV)</b>	<b>25,991</b>	<b>13,642</b>
<b>Benefit/Cost Ratio (BCR)</b>	<b>5.223</b>	<b>1.574</b>
<b>Value for Money Statement</b>	<b>Very High</b>	<b>Medium</b>

The Present Value of Benefits used in the assessment have been derived from the SATURN-based Peterborough Transportation Model (PTM3) used to assess the impact of the scheme in future years. Results from this modelling were then assessed using the Transport User Benefits Appraisal (TUBA, 1.9.14) tool to calculate a scheme BCR. The **Present Value of Benefits** for **Package 1** are **£32,145,000** in 2010 prices, and for **Package 2** are **£37,418,000**.

The Present Value of Costs used in the Economic Assessment is based upon a robust scheme cost estimate and has been calculated in line with WebTAG guidance over a 60-year appraisal period. The **Present Value of Costs** for **Package 1** are **£6,154,000** and for **Package 2** are **£23,776,000** in 2010 prices.

Qualitative assessments were also undertaken for Environmental and Social Factors, including:

- Landscape
- Heritage
- Arboriculture
- Ecology
- Noise
- Physical Activity
- Road Safety
- Severance.

The Environmental and Social Assessment of Package 1 and Package 2 show that there are some key environmental factors that require consideration when determining a preferred option. The new northbound off-slip in Package 1 will require the removal of ten well-establish Corsican Elm trees, which have a high community asset value. There will also be a loss of green space at Bishop's Road Recreation Area. The improvements identified in Package 2 upgrade the existing infrastructure within the Study Area. Boongate dualling will utilise land that is currently highway verge and was earmarked for the dualling of Boongate since the New Town phase of development.

#### Financial Case

The Financial Case demonstrates that the scheme has been robustly costed. This Scheme Outturn Cost includes a 10% Risk Allowance, which is comprised of 5% construction Risk and 5% COVID-19 related risk.

The initial scheme cost estimates for Package 1 are presented in the table beneath.

#### Package 1 Financial Case Costs

Description of Cost Type	Cost (£)
Base Investment Cost	5,845,726
Risk Adjusted Base Cost	6,404,228
Risk Adjusted Base Cost with Construction Industry Inflation (Outturn Cost)	<b>7,538,742</b>

The initial scheme cost estimates for Package 2 are presented in the table beneath.

#### Package 2 Financial Case Costs

Description of Cost Type	Cost (£)
Base Investment Cost	20,990,426
Risk Adjusted Base Cost	23,063,398
Risk Adjusted Base Cost with Construction Industry Inflation ( <b>Outturn Cost</b> )	<b>27,217,021</b>

It is anticipated that the full scheme Outturn Cost for both Packages will be funded by the DfT from the Major Route Network Fund, with the developer contribution secured from Red Brick Farm used towards the improvement of the Fengate / Boongate Junction.

#### Completion of the Business Case

Subject to acceptance of the SOBC, the next phase will include the production of an Outline Business Case (including Operation Modelling), site surveys and Preliminary Design work.

Costs for the Preliminary Design and Outline Business Case tasks are included within the scheme costs reported within this chapter and the Value for Money assessment undertaken within the Economic Case. However, funding to progress the Preliminary Design and Outline Business Case needs to be secured to enable this work to progress.

The CPCA suggest that the next stage of work is split into two phases due to the scale of costs that would be associated with undertaking the site surveys and Preliminary Designs for both packages. The first phase will consist of the Operational Modelling and further design work based on Statutory Undertakers information. This first phase would be used to identify a Preferred Package along with Public Consultation. This will then be presented to the DfT for approval before progressing onto the second phase of work which will consist of Site Surveys and Preliminary Design on the Preferred Package of Schemes.

The first phase of this work is provisionally programmed to be undertaken between April 2021 and October 2021, with a view to an Outline Business Case being submitted in February 2023, and construction of the preferred package starting in April 2024.



## Commercial Case

The Commercial Case demonstrates that both packages of schemes can be reliably procured and implemented through existing channels whilst ensuring value for money in delivery of the scheme.

All phases of the scheme, including detailed design, construction and site supervision will be delivered by Peterborough Highway Services (PHS), who have been responsible for all planning and design work undertaken on the University Access Study to date.

The scheme will be procured using a Target Cost payment mechanism. This incentivises both parties to work together to reduce cost through a pain / gain mechanism. To ensure that the procurement remains commercial competitive and offers value for money, all subcontract packages will be subject to competitive tendering.

Procuring the scheme directly through the PHS contract enables Peterborough City Council to appoint a contractor in an efficient manner. Using PHS' delivery capability offers the following benefits over alternative procurement routes.

- PHS is reliable and has a **proven track record** of delivering major schemes successfully, and this serves as a positive indicator of future performance.
- The scheme can be **procured far quicker** than would be the case with alternative procurement routes. As well as reducing the procurement costs for the procuring authority, the project benefits will be realised sooner.
- The integrated delivery model creates a **single point of responsibility** and encourages **more effective collaboration** between client, designer and contractor to reduce costs. As the scheme has been identified, planned and designed within PHS, continuity can be assured through to construction, and any issues identified on site can be quickly resolved by the design team.
- A well-established supply chain is already in place which provides **Value for Money**. All subcontract packages will be competitively tendered to ensure best value and will be put to a minimum of three tenderers where possible.
- **Strong performance is highly incentivised** as all schemes delivered within the PHS contract contribute to a suite of KPIs which impacts on the term of the contract. Consistent good performance is rewarded with contract term extensions whereas consistently poor performance would see a reduction in the contract term.
- The contract duration and **strong collaborative relationship** encourages both parties to work towards long term gain rather than short term commercial gain.

### Management Case

The Management Case demonstrates that Peterborough City Council, through the PHS Framework, has the necessary experience and governance structure to successfully manage the delivery of the scheme on behalf of the CPCA and ultimately the DfT.

The Council, through PHS, have successfully delivered the following highway improvement schemes in recent years:

- Junction 20 Improvement Scheme (A47 Soke Parkway / A15 Paston Parkway) - £5.7m
- Junction 17 – Junction 2 Improvement Scheme (A1139 Fletton Parkway) - £18m.



Junction 20 Improvement (post scheme)

The scheme will be delivered by a Project Team led by a Peterborough City Council Project Manager and consisting of all the key project delivery partners. The Project Team will be responsible for the daily running of the project, coordinating with all key stakeholders, and managing the delivery programme.

The existing PHS Project Board will be used to oversee the continued development and delivery of the scheme by the Project Team, and to make key decisions relating to the delivery of the project. The Project Board will be supported by technical specialists, and key stakeholders will be invited to attend as necessary.

Every month the Project Manager will also submit a highlight report to the CPCA recording what progress has been made and whether there are any new risks that could impact the scheme.

Key project milestones for progressing to scheme delivery are outlined in the Table beneath:

#### University Access Study Project Milestones

Timescale	Milestone Activity
January 2020	Strategic Outline Business Case and Option Assessment Report Submitted to CPCA and DfT
January 2021 - March 2021	Strategic Outline Business Case reviewed by DfT and approval sought from CPCA Board to progress Phase 1 of the Outline Business Case
April 2021 – October 2021	Phase 1 of Outline Business Case (Further detailed study, including microsimulation modelling to determine preferred package)
November 2021 – December 2021	Phase 1 of Outline Business Case reviewed by DfT and approval sought for the release of funding to undertake Phase 2 of Outline Business Case and Preliminary Design
January 2022 – February 2023	Outline Business Case produced and Preliminary Design undertaken
February 2023	Outline Business Case and Preliminary Design Submitted to DfT
March 2023	Outline Business Case reviewed by DfT and approval sought from for the release of funding to undertake Detailed Design and produce a Full Business Case
April 2023 – February 2024	Detailed Design undertaken and Full Business Case produced
February 2024	Full Business Case and Detailed Design Submitted to DfT
March 2024	Full Business Case reviewed by DfT and approval sought for the release of funding to undertake construction
April 2024 onwards	Commencement of construction of scheme

An online consultation exercise will be undertaken at the next stage of scheme development, and results from this consultation will be reported in the OBC and used to inform future Detailed Design. All other communication with key stakeholders and the public will be coordinated by a designated Project Liaison Officer who will be based with the project delivery team.

A Risk Register was produced during project initiation to identify potential risks and to evaluate factors that could have a detrimental effect on the project. The Risk Register is a live and is reviewed regularly at progress meetings and updates are reported to the CPCA through the monthly Highlight Reports.

Details about how the scheme will be monitored and evaluated against the objectives are shown within the Management Case and include a range of quantitative and qualitative data collection methods that will be undertaken at one, three- and five-years post scheme opening.

## 1. Introduction

This document sets out the Business Case for transport improvements as part of the University Access Study in Peterborough. The scheme will address existing and future congestion and delay occurring at key junctions within the Study Area that will otherwise compromise the operational efficiency of the surrounding road network. By addressing existing and future issues, and providing additional capacity, the improvements will assist with delivering growth aspirations across Peterborough, and specifically the University of Peterborough on the Embankment Area.

This Strategic Outline Business Case is the first stage of the decision-making process using the format set out in “The Transport Business Cases” document published by the Department for Transport (DfT) in January 2013.

The level of detail provided within the Business Case continually builds as the project progresses from Strategic Outline Business Case (SOBC) to Outline Business Case (OBC), and then onto Full Business Case (FBC). This reflects the greater level of detail that becomes available as the list of potential schemes is refined, a preferred scheme is identified for increasingly thorough consideration.

The primary purpose of the SOBC is to:

- Confirm the need for change and the policy fit of a scheme at this location
- Demonstrate that a range of options have been considered, and that a preferred option has been identified that meets the scheme objectives
- Evidence that the preferred option offers value for money, and has been robustly costed based on all the information available
- Explain how the scheme will be procured, and how delivery of the project will be managed.

### 1.1. Embankment Area

The Embankment Area is to the east of Peterborough City Centre, south east of the cathedral, and spans 29.2 hectares. The area boundary includes Bishop’s Road to the north, the A1139 Frank Perkins Parkway to the east, and the River Nene to the south.

The Embankment Area is predominantly open space facilitating social, recreational, leisure and cultural uses, but is supported by the inclusion of the Key Theatre, the Grade II listed Lido Outdoor Swimming Pool and the Regional Fitness and Swimming Centre as well as the Peterborough Athletics Track. In addition, there are several large surface car parks along Bishop’s Road.

The University of Peterborough will be located on the northern edge of the Embankment Area fronting Bishop’s Road and utilising the former ‘Wirrina’ surface car park. The close proximity of the proposed location to the City Centre means that the University will have strong connectivity with major routes into the City Centre, as well as Peterborough Railway Station and Queensgate Bus Station.



Figure 1.1 shows the Embankment Area and proposed location of the University in relation to both the City Centre and the wider highway network.

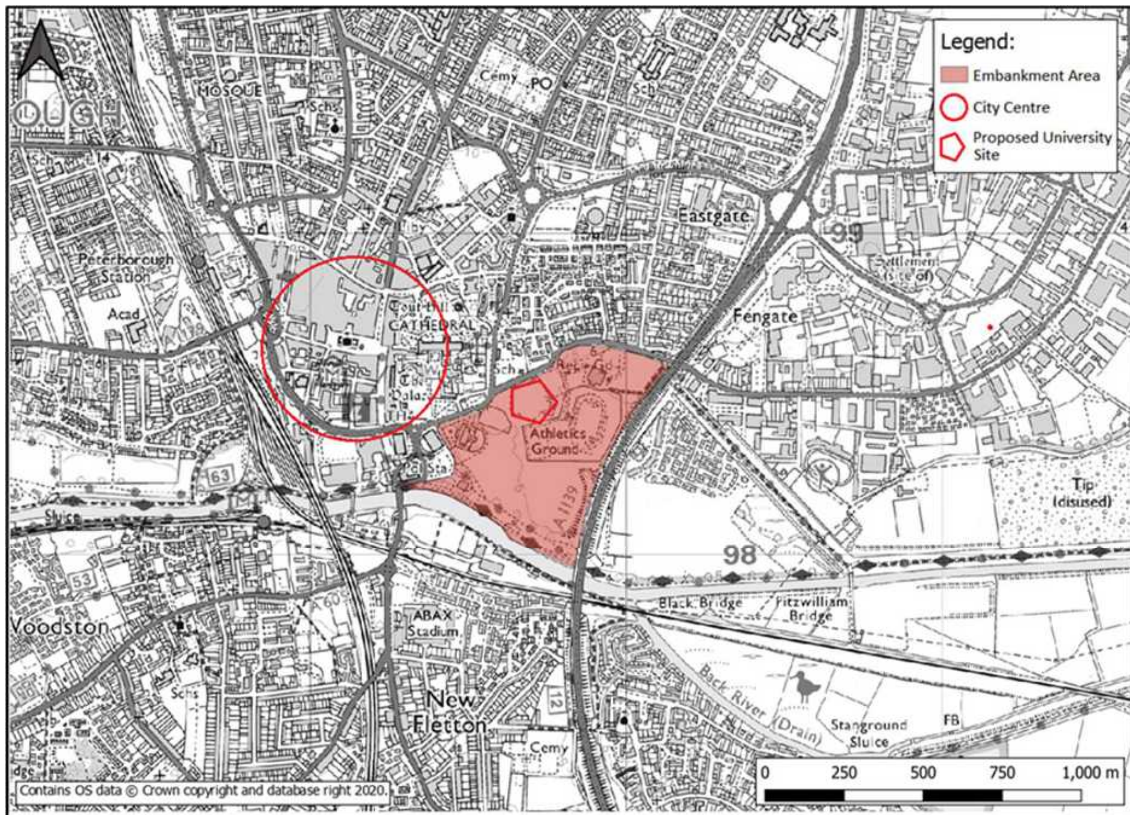


Figure 1.1: Location of Embankment and Proposed University Site within Peterborough

Access to the Embankment Area is currently via Junction 5 of the A1139 Frank Perkins Parkway, Boongate, St John's Street and Vineyard Road, or via Junction 37 (A15 Bourges Boulevard / Bishop's Road / A15 Rivergate) and Bishop's Road. At peak times, these routes and junctions currently experience significant congestion, resulting in queuing and delay as these routes provide access to the Parkway Network from this area of the City. This is expected to increase with planned growth in the City Centre, including the University.

The Peterborough Local Plan (adopted July 2019) identifies the priority given to the establishment of a University in Peterborough, which will be delivered by Peterborough City Council and the Cambridgeshire and Peterborough Combined Authority. It states that land will be safeguarded within the Riverside North Policy Area (Policy LP51) for a new campus.



## 1.2. Study Area

The University Access Study focuses on the highway network which provides access to the Embankment Area, including Junction 5 of the A1139 Frank Perkins Parkway and the surrounding highway network including Bishop's Road, Vineyard Road and Boongate. It will also consider the southern part of Fengate including the Boongate / Fengate Junction, which also connects the Embankment Area to Fengate.

The routes included within the Study Area all provide access to the City Centre from the A1139 Frank Perkins Parkway via Junction 5. The routes are sensitive to local traffic conditions, and if one route is experiencing high levels of congestion and delay, vehicles will use the alternative route to Junction 5.

The University Access Study Area is shown in red in Figure 1.2.

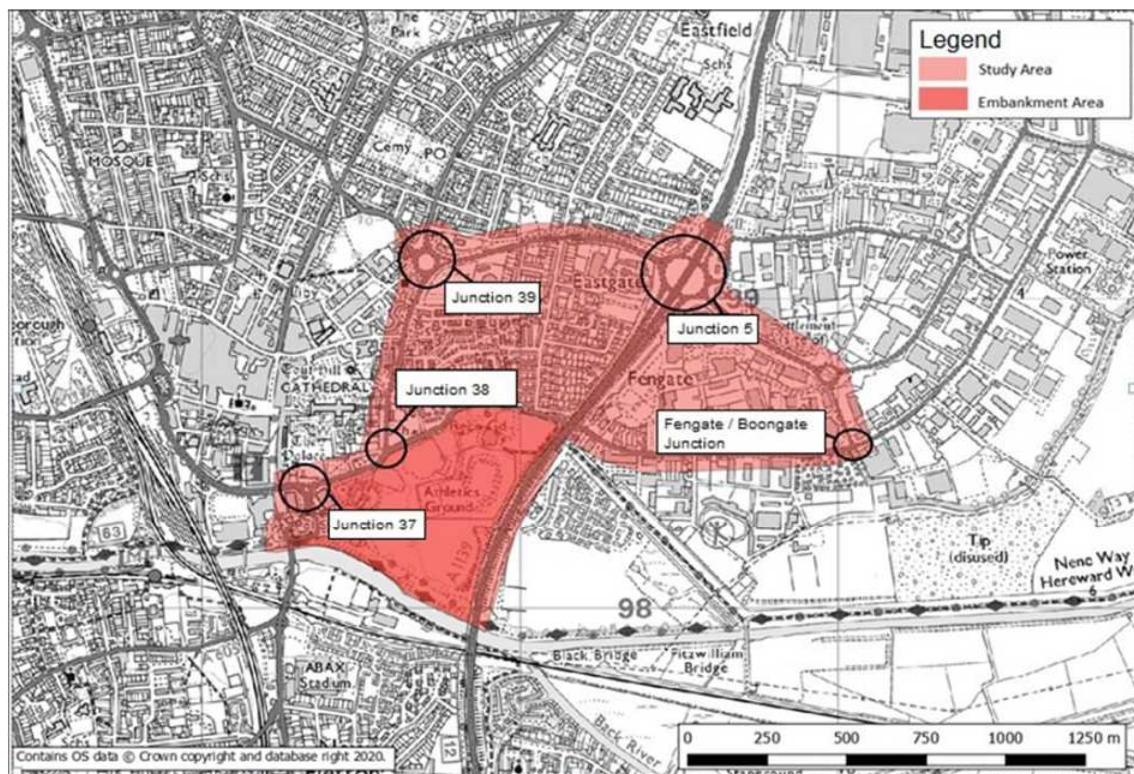


Figure 1.2: University Access Study Area

### 1.3. Growth Context

The Peterborough Local Plan (adopted July 2019) sets out the overall vision, priorities and objectives for Peterborough for the period up to 2036. The updated strategy identifies the required delivery of 19,440 new homes and 17,600 new jobs by 2036<sup>1</sup>.

To date Peterborough's transport network, which was fundamentally redesigned in the 1970s to accommodate the then "Peterborough New Town", has served the City well. However, as a consequence of recent and planned housing and employment growth, capacity issues are now emerging on the road network, resulting in congestion and delay. As congestion increases on the strategic network, and queues form at key junctions, the potential for delivering new homes and jobs in the area will become increasingly constrained. Peterborough City Council are committed to addressing these highway constraints to ensure that its full growth aspirations can be realised.

#### Embankment Area

The City Centre is entering a new and exciting phase in its development, a phase that will deliver significant levels of growth, and the Embankment Area is identified as an opportunity area by Peterborough City Council, and includes proposals for a new Peterborough University, as well as supporting infrastructure such as the Fletton Quays Footbridge, a new pedestrian and cycle bridge connecting Fletton Quays to the Embankment Area.

The University of Peterborough will deliver an independent, campus-based university of 8,000 students and 1,250 staff located at the heart of the City by 2035. The new University will be fast-growing from 2022 to 2028 (with phased infrastructure)<sup>2</sup>:

- **Phase 1:** a first university building in Peterborough City Centre from September 2022 with capacity for around 4,000 students
- **Phase 2:** R&D, innovation and incubator expansion. This will centre on Advanced Manufacturing and Materials Research for educational research and development.
- **Phase 3:** growth from 2025 up to around 6,500 students on roll by 2030. It comprises two further teaching focussed buildings, opening in 2025 and 2028, with an associated student union building and infrastructure works to open in 2025.

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<sup>1</sup> <https://www.peterborough.gov.uk/council/planning-and-development/planning-policies/local-development-plan>

<sup>2</sup> <https://cambridgeshirepeterborough-ca.gov.uk/assets/Growth-Funds/2020.09.22-CSR-University-for-Peterborough-phase-3-final.pdf>

Phase 1 of the university received planning permission in November 2020 and will be built upon the existing Wirrina car park. It is expected to open in September 2022.

In addition to the University, there are aspirations to relocate the Peterborough United Football Club Ground to a new stadium on the Embankment Area, and to replace the existing Regional Swimming Pool and Fitness Centre with a new centre on Pleasure Fair Meadow Car Park. Please note that these growth elements have not been included within the assessment at this stage, as plans are in the early phases of development and information is currently very limited.

### Wider City Centre Growth

Figure 1.3 details the City Centre Opportunity Areas identified by Peterborough City Council for re-development. Areas 5 and 6 on the Figure are the Embankment Development Area.

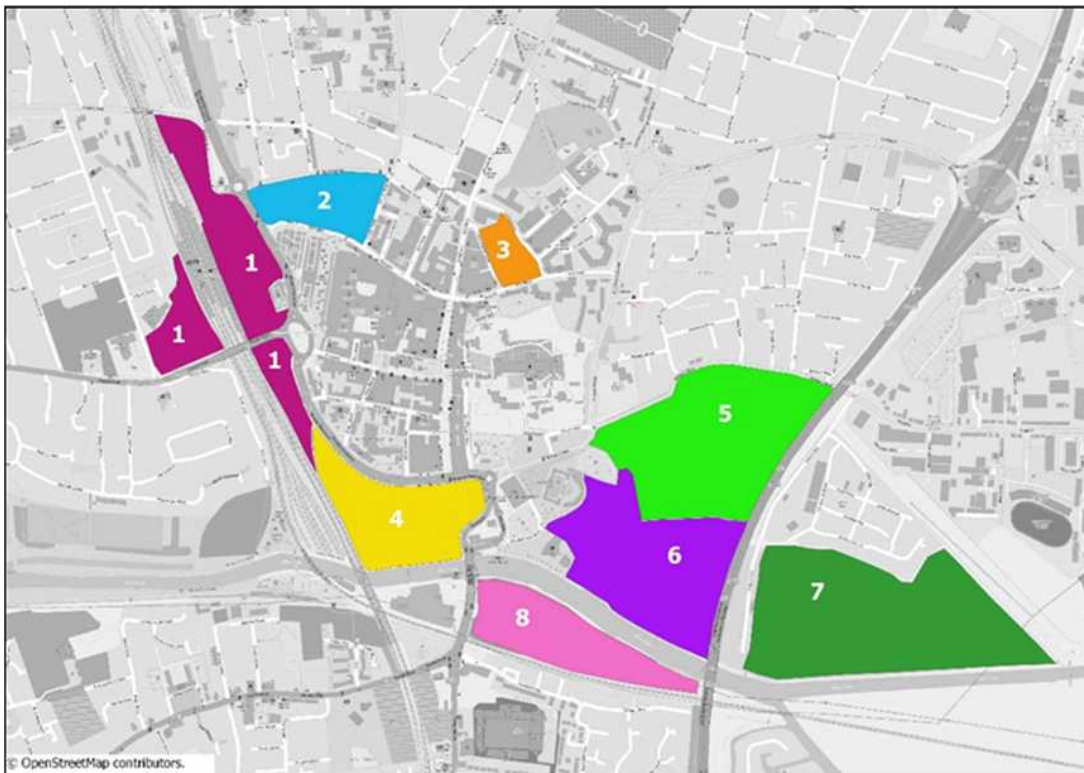


Figure 1.3: Peterborough City Centre Opportunity Areas

To the north west of the Study Area is the Northminster Opportunity Area, which is identified for a residential-led regeneration including a new market hall for the existing Peterborough City Market. Traffic to this area, is likely to use New Road and Junction 39.

To complement these development aspirations, a City Centre Transport Vision was prepared to guide future planning policy and provide an ambitious vision that can provide consistency to future development and growth within the City Centre. The vision embraces emerging technologies and a shift in travel behaviour including the delivery of multi-functional transport hubs on the periphery of the City Centre providing the vast majority of City Centre car parking (private and public), transition points for goods and deliveries destined for the City Centre and as terminals for an Urban Transit System, linking the City Centre to a wider Peterborough Mass Rapid Transit system.

This Business Case demonstrates the need for, and value of, investing in schemes that together will provide the necessary increase in highway capacity to unlock congestion and significantly reduce delay across the highway network in the Study Area to enable the proposed development aspirations at the Embankment as well as across the rest of the City Centre.

#### 1.4. Document Structure

Based on the context outlined above, the remainder of this report will consist of the following sections, with the aim of providing a thorough picture of baseline transport and development conditions across the Study Area, and the need for, and value in, investment to enable growth:

- **Chapter 2: The Strategic Case** identifies the need for an improvement at this location, considers an initial long list of options, and how these perform against DfT, CPCA, Peterborough City Council and the scheme objectives.
- **Chapter 3: The Economic Case** demonstrates that the preferred option offers value for money and details the quantitative and qualitative Economic Assessment undertaken to date on the scheme.
- **Chapter 4: The Financial Case** shows how the scheme has been costed, and the expected funding arrangement for delivering the scheme.
- **Chapter 5: The Commercial Case** sets out how Peterborough City Council will procure in a way that delivers value for money.
- **Chapter 6: The Management Case** explains how successful delivery of the scheme will be managed.

## 2. Strategic Case

### 2.1. Introduction

This chapter sets out the strategic case for the University Access Study improvements. It demonstrates why improvements are needed at this location and considers how the package of schemes fit with local, regional, and national policy, assisting Peterborough to deliver its planned growth, and specifically the University of Peterborough.

### 2.2. Business Strategy

The Government's strategy for facilitating further economic growth requires continued investment in transport infrastructure to enable businesses to invest in job creation and the provision of new residential developments. Achieving economic growth, increasing living standards and the provision of new housing are key Government objectives at national, regional, and local level. This section details how the University Access Study will contribute to achieving these strategic aims and policies.

#### Department for Transport: Single Departmental Plan

The Single Departmental Plan published in June 2019<sup>3</sup> sets out the DfT's objectives and the plans for achieving them.

The objectives are:

- Support the creation of a stronger, cleaner, more productive economy
- Help to connect people and places, balancing investment across the country
- Make journeys easier, modern, and reliable
- Make sure transport is safe, secure, and sustainable
- Prepare the transport system for technological progress and a prosperous future outside the EU
- Promote a culture of efficiency and productivity in everything they do.

A package of improvement schemes within the Study Area has the potential to reduce congestion and improve journey time reliability. The delivery of these benefits will support economic growth. As such, the delivery of a package of schemes at the Embankment Area will provide benefits aligned to delivering the main objectives of DfT's Single Departmental Plan.

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<sup>3</sup> <https://www.gov.uk/government/publications/department-for-transport-single-departmental-plan>



## Department for Transport: Transport Investment Strategy

The Transport Investment Strategy<sup>4</sup> published in 2017 is the DfT's response to the aims of the Governments Industrial Strategy, and sets out the DfT's approach to investment, in which they seek to:

- Create a more reliable, less congested, and better-connected transport network that works for the users who rely on it
- Build stronger, more balanced economy by enhancing productivity and responding to local growth priorities
- Enhance global competitiveness by making Britain a more attractive place to trade and invest
- Support the creation of new housing.

The Strategy states that investment in the transport network will be in different ways, but fundamentally addressing the network's core capability – its condition, capacity, and connectivity – but also improving the user experience and adapting the network to safeguard environment and health.

To deliver balanced investment programmes, the DfT will:

- Ensure investment consistently meets the needs of users and helps to create a balanced economy: by focusing on schemes that tackle clearly defined problems or unlock specific opportunities.
- Focus on getting the best value out of the network and our investment: by continuing to prioritise value for money and rigorous business case appraisal.
- Retain a resolute focus on delivery: by continuing to prioritise predictable funding and a stable long-term pipeline of projects.
- Remain adaptable in the face of change: by seeking balance and diversity across the investment portfolio.

The strategy confirms that where local authorities come together to form combined authorities at a local level, they will be supported these through bespoke devolution deals that provide greater freedoms and powers. The devolved funding will be supplemented with specific investment on a competitive basis, both for larger projects across the country which are too big to fund locally (such as the University Access schemes), and for projects which deliver national priorities, such as the local transport schemes within the National Productivity Investment Fund, or schemes which encourage cycling and walking.

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<sup>4</sup> <https://www.gov.uk/government/publications/transport-investment-strategy>

## Department for Transport Major Road Network Policy Objectives

In December 2018, the Department for Transport published guidance for the Major Road Network (MRN) and Large Local Majors (LLM) Programme<sup>5</sup>.

The Major Road Network forms the middle tier of the country's busiest and most economically important local authority 'A' roads, sitting between the national Strategic Road Network and the rest of the local road network. The A1139 Fletton Parkway / Frank Perkins Parkway is part of the MRN, and therefore any improvement scheme on this road, or benefitting this road, could be eligible for funding.

The MRN has five objectives which build on the commitments made in the Transport Investment Strategy. The objectives are:

- Reduce congestion - Alleviating local and regional congestion, reducing traffic jams and bottlenecks.
- Support economic growth and rebalancing - Supporting the delivery of the Industrial Strategy, contributing to a positive economic impact that is felt across the regions.
- Support housing delivery – Transport infrastructure is key to unlocking development and delivering places people want to live.
- Support all road users - Recognising the needs of all users, including cyclists, pedestrians and disabled people.
- Support the Strategic Road Network - Complementing and supporting the existing SRN by creating a more resilient road network in England.

Table 2.1 details how a University Access Study Improvement Scheme meets the MRN objectives described above.

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<sup>5</sup> <https://www.gov.uk/government/publications/major-road-network-and-large-local-majors-programmes-investment-planning/major-road-network-and-large-local-majors-programmes-investment-planning-guidance#mrn-objectives>

Table 2.1: Scheme Alignment with MRN Objectives

MRN Objective	University Access Study Improvement Scheme
Reduce Congestion	Significant capacity issues exist on the A1139 Frank Perkins Parkway and traffic conditions are forecast to get worse with proposed growth if no improvements are delivered. There is currently severe peak hour congestion and delay at Junction 5, with queues extending back onto the A1139 Frank Perkins Parkway in the AM peak hour. The provision of additional capacity at / or close to Junction 5, will ease congestion, improve journey time reliability, and improve the network resilience of the A1139 Frank Perkins Parkway and MRN, as well as the surrounding local road network.
Support Economic Growth and Rebalancing	The A1139 Fletton Parkway / Frank Perkins Parkway enables traffic to move strategically around the city. It is a key commercial corridor linking Norfolk, and multiple regional and local businesses, with the strategic road network. In addition, Junction 5 provides one of the key access points to Fengate, a large employment area within Peterborough. The University of Peterborough will also attract many new trips to this part of the transport network. The delivery of a scheme in this area will unlock economic development opportunities and increase the attractiveness for potential investors within Fengate and to the east of Peterborough City Centre, including the Embankment, as a reduced delays and improved journey time reliability.
Support housing delivery	The Peterborough Local Plan sets out proposals to deliver 19,440 additional homes from 2016 to 2036. Many of the urban extensions and housing development opportunities across the City Centre will be accessed via the A1139 Frank Perkins Parkway. Capacity enhancements to Junction 5 and the local road network will support the delivery of these housing sites.
Support all road users	The scheme will review the potential for any walking and cycling improvements that can be made within the study area. This will include improved crossing facilities at junctions and on key walking and cycling routes. In addition, existing walking and cycling facilities will be reviewed to improve connections to the Embankment Area, and the wider City Centre.

<p><b>Support the Strategic Road Network</b></p>	<p>The A1139 Fletton Parkway / Frank Perkins Parkway provides a key link between the A1 and the A15 / A16 to the north, and the A47 to the east. As well as enabling traffic to move strategically around the city, it is a key commercial corridor linking Lincolnshire, Norfolk, and multiple regional and local businesses, with the strategic road network.</p> <p>A scheme delivering capacity enhancements and reducing peak hour congestion and delay, will improve the resilience of the A1139 Frank Perkins Parkway, particularly in the peak hours. Improving network resilience will provide route reliability for commercial traffic travelling between the A1(M), A1 and the A47.</p>
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## Cambridgeshire and Peterborough Combined Authority

The Cambridgeshire and Peterborough Combined Authority (CPCA) was formed in 2017 as a Mayoral Combined Authority. It is made of seven local authorities (Cambridgeshire County Council, Peterborough City Council, Huntingdonshire District Council, East Cambridgeshire District Council, Fenland District Council, Cambridge City Council and South Cambridgeshire District Council) and the Business Board (Local Enterprise Partnership).

The focus of the CPCA is on strategic issues (such as housing, transport and infrastructure demand) which cross council borders and span the entire Cambridgeshire and Peterborough area. The Devolution Deal for Cambridgeshire and Peterborough runs for 30 years and sets out key ambitions for the CPCA as well as including a list of specific projects which the CPCA and its member councils will support over that time.

To help achieve these ambitions and provide the requisite support, the CPCA has set out a short-term business plan<sup>6</sup> that is aimed at giving a clear pathway to deliver on their ambitious and transformational agenda for Cambridgeshire and Peterborough. Figure 2.1 sets out the CPCA Policy Framework.



Figure 2.1: CPCA Policy Framework

The CPCA Mayor's Growth Ambition Strategy sets out the area's priorities for achieving ambitious levels of inclusive growth and meeting the commitments of the Devolution Deal. The Strategy is based upon significant work undertaken by the Cambridgeshire and Peterborough Independent Economic Review (CPIER).

<sup>6</sup> <https://cambridgeshirepeterborough-ca.gov.uk/assets/Uploads/CPCA-Business-Plan-2019-20-dps.pdf>



The CPIER<sup>7</sup> was commissioned by the Combined Authority and other local partners to provide a robust and independent assessment of the Cambridgeshire and Peterborough Economy and its potential for growth. The assessment makes a number of recommendations for the CPCA to take forward over the short, medium and long-term.

The success of Cambridgeshire and Peterborough as a project of national importance is highlighted in the CPIER. This is because the area contains some of the most important companies and institutions in the country, much of the country's high value agricultural land, and the cities and towns that continue to support both.

The CPIER identifies Peterborough as a City with a dynamic business environment, built on its history of industry including brickmaking and manufacturing. It is an attractive place for business due to its position on the A1 and East Coast Main Line, as well as for aspirational workers who want easy access to London, the Midlands and the North. However, it also states that it has a lower proportion of high-level skills than elsewhere in the area, and educational and health outcomes in Peterborough are relatively poor. The CPIER believes a strong focus on these issues is needed to improve productivity and well-being, which should also include new higher education provision.

The Local Industrial Strategy<sup>8</sup> sets out the economic strategy for Cambridgeshire and Peterborough, taking a lead role in implementing the business growth, productivity and skills elements of the Growth Ambitions Strategy. The Local Industrial Strategy is focussed around five key foundations of productivity established in the UK Industrial Strategy:

- People
- Ideas
- Business Environment
- Infrastructure
- Place.

It is a core principle of the Local Industrial Strategy that the fifth foundation of place reflects the findings of the CPIER, responding to the three sub-economies identified:

- Greater Cambridge
- Greater Peterborough
- The Fens.

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<sup>7</sup> <https://www.cpier.org.uk>

<sup>8</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/818886/Cambridge\\_SINGLE\\_PAGE.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/818886/Cambridge_SINGLE_PAGE.pdf)

The CPCA Assurance Framework states that investments will only be made if they can demonstrate that they will support the delivery of the Growth Ambitions Statement and the Local Industrial Strategies, as well as the more detailed place and sector strategies.

In January 2020, the CPCA adopted a Local Transport Plan for Cambridgeshire and Peterborough and it replaces the interim Local Transport Plan published in 2017. The plan describes how transport interventions can be used to address current and future challenges and opportunities for Cambridgeshire and Peterborough and sets out the policies and strategies needed to secure growth and ensure that planned large-scale development can take place in the county in a sustainable way.

The Local Transport Plan is split in to two main parts: The 'Local Transport Plan' which sets out the vision, goals and objectives and the policies designed to deliver the objectives, and the 'Transport Delivery Plan' (2019 to 2035) which explains how the Local Transport Plan strategy will be delivered. It details programmes for delivery of improvements to the transport network and for its day-to-day management and maintenance.

The development of the Local Transport Plan was undertaken concurrently with the CPIER and the Growth Ambition Strategy which enabled the challenges and opportunities detailed in these documents to be reflected within the Local Transport Plan. The Local Transport Plan completes the suite of documents which articulates the Combined Authority's response to the CPIER.

The vision for the Local Transport Plan is:

*'To deliver a world-class transport network for Cambridgeshire and Peterborough that supports sustainable growth and opportunity for all'.*

The goals of the Local Transport Plan outline the wider outcomes the transport network in Cambridgeshire and Peterborough will aim to achieve. They are:

- **Economy** – deliver economic growth and opportunity for all communities
- **Society** – Provide an accessible transport system to ensure everyone can thrive and be healthy
- **Environment** – Protect and enhance our environment and tackle climate change together.

The objectives of the Local Transport Plan underpin the delivery of the goals for a package of improvements within the University Access Study Area, and form the basis against which schemes, initiatives and policies will be assessed. The initial scheme objectives for University Access Study were devised at the beginning of the Study and pre-date the objectives of the Local Transport Plan. Since the introduction of the CPCA's Local Transport Plan, these initial scheme objectives have been refined to ensure they meet those objectives both locally (for Peterborough) and regionally (for the CPCA). The scheme objectives for a University Access Study improvement scheme/s are set out later on in this chapter.

The objectives of the CPCA Local Transport Plan are:

- **Housing** – support new housing and development to accommodate a growing population and workforce
- **Employment** – connect all new and existing communities so all residents can easily access jobs within 30 minutes by public transport
- **Business and Tourism** – Ensure all of our region’s businesses and tourist attractions are connected sustainably to our main transport hubs, ports and airports
- **Resilience** – build a transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability
- **Safety** – embed a safe system approach into all planning and transport operations to achieve Vision Zero (zero fatalities or serious injuries)
- **Accessibility** – promote social inclusion through the provision of a sustainable transport network that is affordable and accessible for all
- **Health and Well-being** – provide ‘healthy streets’ and high-quality public realm that puts people first and promotes active lifestyles
- **Air Quality** – ensure transport initiatives improve air quality across the region to exceed good practice standards
- **Environment** – deliver a transport network that protects and enhances our natural, historic and built environments
- **Climate Change** – reduce emissions to as close to zero as possible to minimise the impact of transport and travel on climate change.

The Local Transport Plan states that the CPCA will explore a package of measures to create and enhance walking/cycling links to the University, improve highway access to the Parkway network, whilst considering how best to replace the surface-level parking provision that currently occupies the University site.

The University of Peterborough is a critical component in CPCA’s strategy under the devolution deal “to deliver a leading place to live, learn & work by 2030”, the Local Industrial Strategy and the CPCA business plan strategic goals to double the size of the local economy and provide the UK’s most technically skilled workforce. A transport scheme providing additional transport capacity within the Study Area will help support these goals.

The CPCA are the organisation responsible for the delivery of the University Access Study scheme.

### 2.3. Fit with the Wider Policy Context

The wider policy context is set out in Table 2.2. Each policy document is set out alongside its objectives and how the proposed scheme will support and facilitate the objectives of each policy document.

Appendix A details other local policies that are relevant to improvements in the University Access Study Area.

Table 2.2: Wider Policy Context for University Access Study and Impact of the Proposed Measures

Policy Framework	Policy Function	Objectives	How the Study Supports and Facilitates the Policy Objectives
Department for Transport - Single Departmental Plan	Sets out the DfT's objectives and the plans for achieving them	<ul style="list-style-type: none"> <li>Support the creation of stronger, cleaner, more productive economy</li> <li>Help to connect people and places, balancing investment across the country</li> <li>Make journeys easier, modern and reliable</li> <li>Make sure transport is safe secure and sustainable</li> <li>Prepare the transport system for technological progress and a prosperous future outside the EU</li> <li>Promote a culture of efficiency and productivity in everything we do.</li> </ul>	<p>Improvements will:</p> <ul style="list-style-type: none"> <li>Support growth ambitions at the Embankment and within City Centre</li> <li>Improve reliability for drivers on this section of the city's road network</li> </ul>
Department for Transport - Transport Investment Strategy	DfT's response to the aims of the Governments Industrial Strategy, and sets out the DfT's approach to investment	<ul style="list-style-type: none"> <li>Create a more reliable, less congested, and better-connected transport network that works for the users who rely on it</li> <li>Build stronger, more balanced economy by enhancing productivity and responding to local growth priorities</li> <li>Enhance global competitiveness by making Britain a more attractive place to trade and invest</li> <li>Support the creation of new housing.</li> </ul>	<p>Improvements will:</p> <ul style="list-style-type: none"> <li>Support growth ambitions at the Embankment and within City Centre</li> <li>Improve reliability for drivers on this section of the city's road network</li> </ul>
Cambridgeshire and Peterborough Combined Authority Local Transport Plan	Describes how transport interventions can be used to address current and future challenges and opportunities. Sets out policies and strategies needed to secure growth and ensure planned large-scale development can take place in the county in a sustainable way. The Local Transport Plan completes the suite of documents which articulates the Combined Authority's response to the CIPER	<ul style="list-style-type: none"> <li>Housing – support new housing and development to accommodate a growing population and workforce</li> <li>Employment – connect all new and existing communities so all residents can easily access jobs within 30 minutes by public transport</li> <li>Business and Tourism – Ensure all of our region's businesses and tourist attractions are connected sustainably to our main transport hubs, ports and airports</li> <li>Resilience – build a transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability</li> <li>Safety – embed a safe system approach into all planning and transport operations to achieve Vision Zero (zero fatalities or serious injuries)</li> <li>Accessibility – promote social inclusion through the provision of a sustainable transport network that is affordable and accessible for all</li> <li>Health and Well-being – provide 'healthy streets' and high-quality public realm that puts people first and promotes active lifestyles</li> <li>Air Quality – ensure transport initiatives improve air quality across the region to exceed good practice standards</li> <li>Environment – deliver a transport network that protects and enhances our natural, historic and built environments</li> <li>Climate Change – reduce emissions to as close to zero as possible to minimise the impact of transport and travel on climate change.</li> </ul>	<p>Improvements will:</p> <ul style="list-style-type: none"> <li>Support growth ambitions at the Embankment and within City Centre</li> <li>Improve reliability for drivers on this section of the city's road network</li> </ul>
Peterborough City Council Strategic Priorities	The Council's priorities to help meet its vision to 'create a bigger and better Peterborough that grows the right way, and through truly sustainable growth	<ul style="list-style-type: none"> <li>Drive growth, regeneration and economic development</li> <li>Improve educational attainment and skills</li> <li>Safeguard vulnerable children and adults</li> <li>Implement the Environment Capital Agenda</li> </ul>	<p>Improvements will:</p> <ul style="list-style-type: none"> <li>Support growth ambitions at the Embankment and within City Centre</li> <li>Improve reliability for drivers on this section of the city's road network</li> </ul>
Peterborough City Council Local Plan	Updates the 2011 Core Strategy and looks to deliver 21,315 homes and 19,440 jobs by 2036	<ul style="list-style-type: none"> <li>Support Peterborough's culture and leisure trust Vivacity</li> <li>Keep all our communities safe, cohesive and healthy</li> <li>Achieve the best health and wellbeing for the city</li> </ul>	

## 2.4. The Need for Change

There is a very clear and compelling case for change on the highway network within the University Access Study Area. The Embankment Area has been identified as the location for the new University of Peterborough. In addition to this, Peterborough City Council is currently in discussion with Peterborough United Football Club about relocating their Stadium to the Embankment Area from the current site on London Road, to the south of the City Centre.

To the north west of the Study Area is the Northminster Opportunity Area, a residential-led regeneration including a new market hall for the existing Peterborough City Market. Traffic to this area, is likely to use New Road, Junction 39 and Junction 5

To complement these development aspirations, a City Centre Transport Vision was prepared to guide future planning policy and provide an ambitious vision that can provide consistency to future development and growth within the City Centre. The vision embraces emerging technologies and a shift in travel behaviour including the delivery of multi-functional transport hubs on the periphery of the City Centre providing the vast majority of City Centre car parking (private and public), transition points for goods and deliveries destined for the City Centre and as terminals for an Urban Transit System, linking the City Centre to a wider Peterborough Mass Rapid Transit system.

Evidence of existing and future conditions within the Study Area demonstrate that there is congestion and delay during the peak hours, and these are forecast to get worse with the proposed growth if no improvements are made. If the transport infrastructure is not improved and increased capacity is not provided, it will impact on the delivery of the proposed development.

These challenges are documented in the Option Assessment Report (OAR) and summarised below.

### Area-wide Congestion and Delay

The University Access Study OAR provides a detailed examination of the existing traffic conditions across the Study Area in both the AM and PM peak hour.

The review of existing conditions on the highway network showed that high levels of congestion and delay are experienced at Junction 5, as well as other key junctions across the Study Area, in both the AM and PM peak hours.

Details of the locations experiencing delay in the AM and PM peak hours are discussed beneath.

### Study Area Overview

The A1139 Fletton Parkway / Frank Perkins Parkway provides a key link between the A1 and the A15 / A16 to the north and the A47 to the east, and forms part of the nationally recognised 'major road network'. As well as enabling traffic to move strategically around the city, it is a key commercial corridor linking Norfolk, and multiple regional and local businesses, with the strategic road network.



Sections of the A1139 have an Average Annual Daily Traffic flow (AADT) of 64,000 vehicles, and the AADT at the location adjacent to the proposed University is approximately 55,000 vehicles<sup>9</sup>. Many of these vehicles access the City Centre, and the Embankment area, via Junction 5 of the A1139 Frank Perkins Parkway.

Junction 5 is a large grade separated junction and is just to the north of one of only three river crossings in the city. It provides links to the City Centre and Fengate, the large industrial and employment area to its east.

#### AM Peak Hour

Figure 2.2 shows the typical traffic conditions for the across the Study Area on an average weekday (pre COVID-19) for the AM peak hour.



Figure 2.2: AM Peak Hour Congestion within Study Area (TomTom Data, 2015)

Figure 2.2 shows that extensive queuing (identified by the slow speeds in red and orange) occurs during the AM peak hour on both the northbound and southbound off-slips from the Parkway. Queueing on the northbound off slip in the morning peak can stretch back over a mile on the Parkway. Slow or stationary queues are often experienced in the nearside lane on Frank Perkins Parkway to the south of Junction 5. This is not only a safety concern, but also halves the normal capacity of the parkway network at this location, with one lane effectively acting as a stacking lane, and the other reduced to slow speeds.

<sup>9</sup> Peterborough Traffic Flow Diagram, 2015.

The queuing on the A1139 Frank Perkins Parkway northbound off-slip is caused in part by the conflicting movements on the roundabout in the AM peak. The A1139 Frank Perkins Parkway southbound off-slip has a high proportion of right turning vehicles onto Boongate which minimises gap availability for vehicles on the northbound off-slip to enter the circulatory. The same conflict also results in queuing on the Carr Road and Boongate East approaches.

Figure 2.3 also shows lengthy delays on St John's Street and Vineyard Road to its junction with Bishop's Road. All approaches to Junction 37 experience delays. This is a key junction within the City Centre highway network linking north-south journeys on the A15 with east-west journeys on Bishop's Road and to the parkway network.

#### PM Peak Hour

Figure 2.3 shows the overall situation across the Study Area on an average weekday (pre COVID-19) for the PM peak hour.



Figure 2.3: PM Peak Hour Congestion within Study Area (TomTom Data, 2017)

Figure 2.3 shows that delay occurs in similar locations during the PM peak hour as in the AM peak hour, however the delay and congestion experienced is generally much more significant in the PM peak hour.

The delay experienced at Junction 5 is predominantly on the Boongate West, Carr Road and Boongate East approaches to the junction rather than the off slips. All three approaches have significant levels of delay, with the delay on Boongate East extending back to the Boongate / Fengate Junction, as commuters from the City Centre and Fengate areas attempt to access the Parkway via Junction 5. In addition, the Carr Road approach experiences delay extending back to, and along Padholme Road.

The highway network on the periphery of the City Centre along St John's Street, Vineyard Road, Bishop's Road and A15 Bourges Boulevard also experiences congestion and delay during the PM peak hour. The Vineyard Road approach to its junction with Bishops Road suffers from significant congestion as does the A15 Bourges Boulevard approach to Junction 37.

All approaches to Junction 39 experience delay within the PM peak. Again, this junction is a key City Centre junction providing a link between north-south and east-west movements.

Existing conditions at each of these junctions are discussed in greater detail in the OAR.

### Non-Motorised Users

There is currently a reasonable level of provision for Non-Motorised Users (NMU's) around the Embankment Area due to the recreational nature of the site and its proximity to the City Centre. However, movement for NMUs around the area is impeded by the significant levels of queuing and congestion throughout the Study Area which increases severance.

Routes for pedestrians and cyclists leading to the Embankment area have been reviewed and audited during recent site visits. The findings from these are discussed in further detail beneath.

The Study Area has good walking connections from nearby long-stay car parks, such as Wellington Street and Pleasurefair Meadow, as well as from Peterborough Train Station and Queensgate Bus Station. The train and bus station are approximately a 15-minute walk away from the Embankment area via the A15 Bourges Boulevard, which has wide shared-use paths and formal crossing facilities along the route. Figure 2.4 highlights the existing walking and cycling provision within the Study Area.



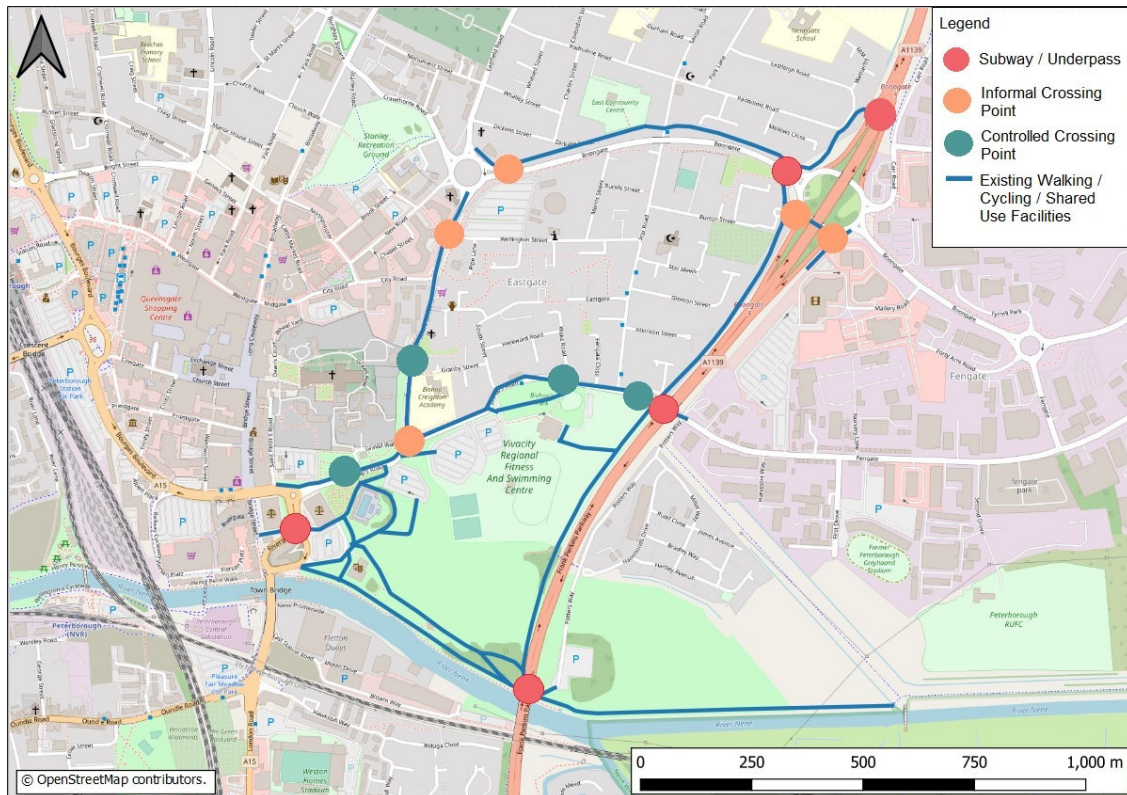


Figure 2.4: Existing Walking and Cycling Infrastructure within the Study Area.

Figure 2.4 demonstrates that there is a good provision across the Study Area. There is a segregated walking and cycling route which runs parallel to the north of Boongate between Eastfield Road and Padholme Road. This then provides access to the west and Fengate via an underpass beneath the A1139 Frank Perkins Parkway to the north of Junction 5. At this point, the cycleway joins the Airfield Cycleway.

National Cycle Network 63 (NCN63) which is a cycle route linking Leicester, Stamford, Peterborough and Wisbech which runs along the northern bank of the River Nene. Locally this route provides cycle linkages between the City Centre and Whittlesey. This route also provides a pedestrian route within the Embankment Area linking with Potters Way.

St John's Street and Vineyard Road provide a north-south pedestrian and cycle route between Boongate and the Embankment Area, with footways on both sides of the carriageway as well as the footway to the west being an advisory off-road cycle route. ,

There is also an advisory off-road cycleway and footpath alongside the eastern boundary of the Embankment area providing a link between NCN63 to the south and Airfield Cycleway to the North, and an underpass under the A1139 Frank Perkins Parkway providing an additional route to Potters Way.

Bishop's Road has a wide high quality shared-use path along its northern edge between Junction 37 and Junction 38, and off-road walking and cycling facilities on its southern side through the gardens close to the Lido. There is also a signalised pedestrian crossing on this section of Bishop's Road. There are footpaths either side of the carriageway on Bishop's Road between Junction 37 and Fengate, and there are signalised crossings just to the east of Wake Road and just to the west of the A1139 Frank Perkins Parkway overbridge.

A Non-Motorised User (MNU) audit was conducted across the Study Area to review the quality of the existing walking and cycling infrastructure, and to identify any potential improvements. Routes surveyed during the audit included key routes to / from the Embankment Area and those likely to see an increase in foot and cycle traffic as the University of Peterborough and other proposed developments come forward within the area.

During the audit the following points were considered:

- Surface quality and effective width of the pedestrian / cycle footpaths
- Shared use and user conflicts
- Consistency of dedicated cycle lanes
- Location of crossing points and ease of crossing
- Extent of street lighting at underpasses and personal safety.

The NMU Audit Report in Appendix B provides greater detail on the routes surveyed and highlights key areas where pedestrian and cycle facilities were noted to be of high quality or in need of improvement. The audit identified the following potential improvements:

- Resurface all footpaths in the immediate vicinity of the Embankment Area, improving accessibility for all users. Resurfacing should reflect that on the most western section of Bishop's Road, where high quality upgrades to surface quality and shared use were implemented in 2018
- Implement controlled crossing points at the off / on slips of Junction 5 (southern side of circulatory) and along the Boongate approach / exit of Junction 39, increasing personal safety and reducing lengthy waiting times for active modes
- Improved lighting on routes which are set back from the roadside as well as underpasses, improving the perceived safety of these areas.

These recommendations will be considered as the study progress to the next stage and will form part of the design process.

## Public Transport Provision

There are bus stops on Bishop's Road and Star Road within the Study Area, served by the Citi 4 route. The Citi 4 bus route operates a 20-minute service between Parnwell and the City Hospital via the City Centre.

The bus stops on Bourges Boulevard, close to Bridge Street, are approximately a 10-minute walk away and provide access to many of the main 'Citi' services operating across Peterborough. In addition, Queensgate bus station is approximately 15 minutes' walk away, which provides services to the wider Peterborough area and beyond.

## 2.5. Impact of Not Changing

As highlighted above, the Embankment Area will be the location for the University of Peterborough, alongside wider aspirations for the site including the relocation of Peterborough United Football Club's Stadium.

The existing issues of congestion, delay and poor journey times will continue to worsen without intervention. This will impact on the operational performance of the highway network across the Study Area and compromising the viability of the City Centre growth aspirations.

The Peterborough Transportation Model (PTM3) model has been used to assess conditions within the Study Area should the growth occur without any significant highway improvements.

The PTM3 was developed using SATURN (v11.4.07H), which is a suite of network analysis programs. SATURN allows the user to model baseline and future year traffic conditions, such as traffic volumes, capacities and delays, at a strategic level and analyse the impact of potential road-investment schemes.

PTM3 has been constructed to represent the morning (08:00 - 09:00), Inter (14:00 - 15:00) and evening (17:00 - 18:00) peak hours, to reflect the most congested time periods across Peterborough's network, and it models cars, LGVs, HGVs and buses. The base model was validated using traffic count and travel time data from 2019.

The PTM3 forecast models use the base model and applies traffic growth sourced from the Department for Transport's Trip End Model Presentation Program (TEMPro), National Road Traffic Forecasts (NRTF) and trip rates for local developments. Forecast growth has been calculated for 2026, 2031 and 2036 to align with the Local Plan.



The University of Peterborough is not proposing any on-site car parking for its initial phase, and therefore vehicle trips associated with Phase 1 of University development have been assigned to either the Wellington Street Car Park or Pleasure Fair Meadow Car Park depending on whether the trip comes from the north or south of the city. The assumption for Phases 2 and 3 of the University is that there will be additional car parking provided close to the Embankment Area as set out in the City Centre Transport Vision.

The future year growth scenario does not include the provision of a new Peterborough United Football Club Stadium on the Embankment Site.

Analysis of highway conditions in the future year (2036) growth scenario without any significant highway intervention is presented beneath, by peak hour.

#### AM Peak Hour

Figure 2.5 shows delay (seconds per vehicle) in the AM peak hour across the Study Area in the 2036 DM scenario.

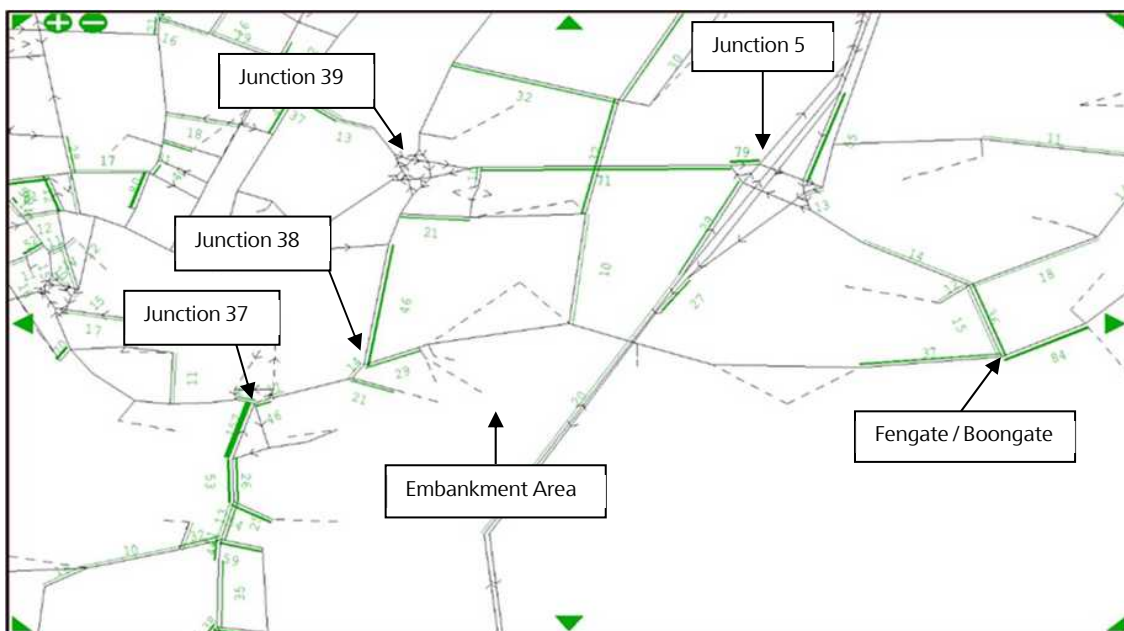


Figure 2.5: AM Peak Hour Delay (seconds per vehicle) 2036 Do Minimum Scenario

Figure 2.5 demonstrates that there is evidence of high levels of delay at all of the key junctions within the Study Area in 2036.

Severe delay is highlighted at Junction 37, with 157 seconds of delay per vehicle on the A15 Rivergate approach to the junction.

The Boongate / Fengate Junction also suffers from delays, with 84 seconds of delay per vehicle expected on the Fengate East approach by 2036.

Figure 2.6 shows the delays occurring at Junction 5 during the AM peak hour in more detail.

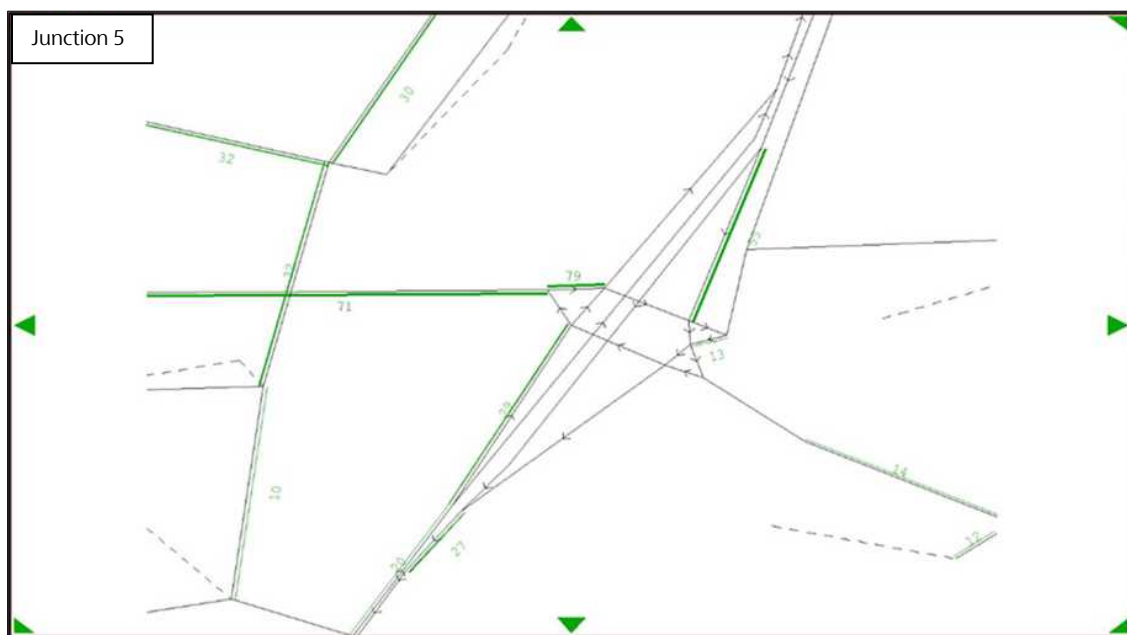


Figure 2.6: Junction 5 AM Peak Hour Delay (seconds per vehicle) 2036 Do Minimum Scenario

Figure 2.6 highlights the delay experienced on the Boongate West approach to Junction 5 with 79 seconds of delay per vehicle in the AM peak period. Both the northbound and southbound off-slip experience delays. The southbound off-slip has 55 seconds of delay per vehicle whilst the northbound off-slip has 29 seconds of delay.

There is also 71 seconds of delay (per vehicle) on Boongate travelling westbound towards Junction 39. This is as a result of link capacity as the road narrows to a single lane between the two junctions.

## PM Peak Hour

Figure 2.7 shows delay (seconds per vehicle) in the PM peak hour across the Study Area in the 2036 DM scenario.

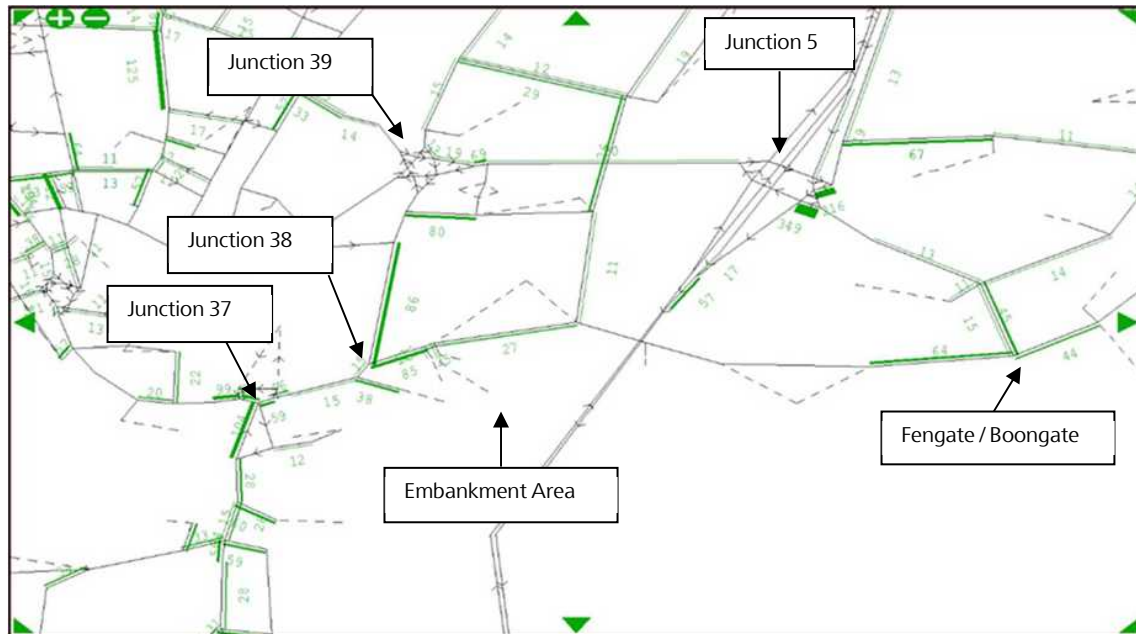


Figure 2.7: PM Peak Hour Delay (seconds per vehicle) 2036 Do Minimum Scenario

The approaches that experience delays in the PM peak hour are similar to that experienced in the AM peak hour, with significant delays occurring at Junction 37, Junction 38, and the Boongate / Fengate Junction. However, the delays occurring tend to be higher than those experienced in the AM peak hour.

The delay at Junction 37 in the PM peak hour is on both the A15 Rivergate approach (104 seconds delay per vehicle) and A15 Bourges Boulevard (99 seconds per vehicle). There is 86 seconds of delay experienced in the PM peak hour on the Vineyard Road approach to Junction 38, and 85 seconds of delay on Bishop's Road East. This delay results in significant queueing along both roads, compromising growth aspirations and creating severance for pedestrians and cyclists moving around the area.

The Boongate / Fengate Junction also suffers from delays in the PM peak hour on all approaches, the highest delay is on the Fengate West arm at 64 seconds delay per vehicle, followed by Boongate and Fengate East at 45 seconds delay per vehicle and 44 seconds delay per vehicle respectively.

The PM peak hour also highlights delays occurring at the St John's Street / Wellington Street Junction, with delays of 80 seconds per vehicle on the Wellington Street approach. This is as a result of difficulty for vehicles from Wellington Street in finding gaps to turn onto St John's Street.

The PM peak hour delays at Junction 5 by 2036 are shown in Figure 2.8 below.

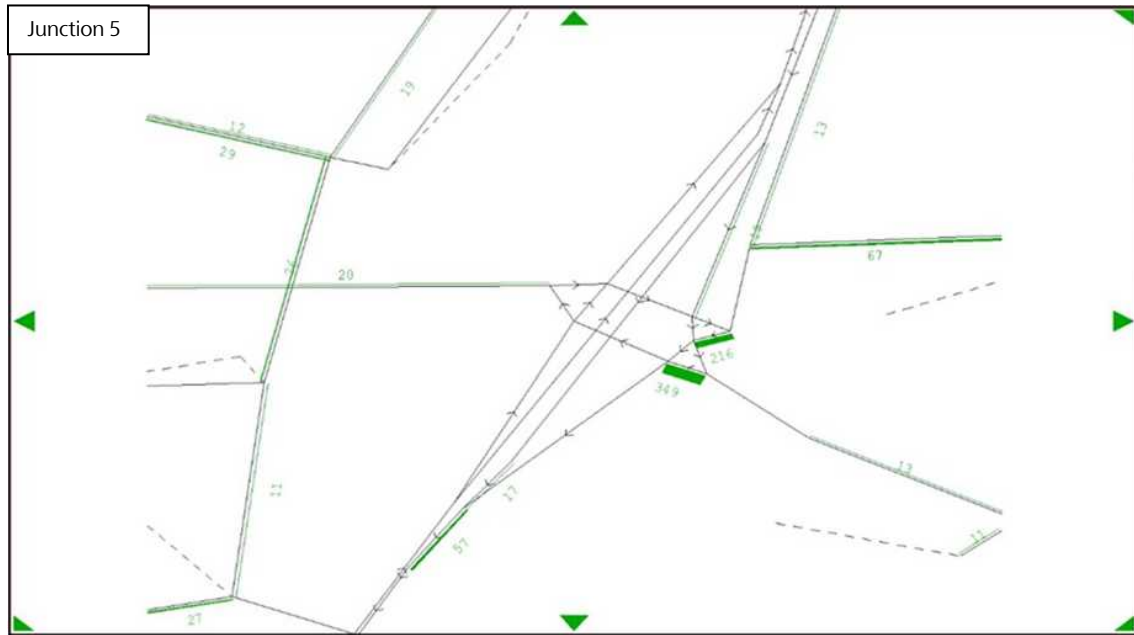


Figure 2.8: Junction 5 PM Peak Hour Delay (seconds per vehicle) 2036 Do Minimum Scenario

Delays at Junction 5 occur on the Boongate East approach during the PM peak hour (349 seconds delay per vehicle) and Carr Road (216 seconds delay per vehicle). The Padholme Road approach to its junction with Carr Road shows a delay of 67 seconds per vehicle and reflects the congestion occurring on this part of the local road network.

The A1139 Frank Perkins Parkway northbound off-slip, southbound off-slip and Boongate West approach do not experience the same level of delays in the 2036 DM PM peak hour as they do in the AM peak hour.

## 2.6. Internal Drivers for Change

Internal drivers for change are factors that are driving the need for change and come from the scheme promoter. Examples include aspirations for growth or increasing network resilience. In this instance the scheme promoters are the CPCA and Peterborough City Council.

The internal drivers for improvements come from local growth aspirations, particularly the establishment of a University of Peterborough, and the structured framework of support provided by the CPCA to enable this growth to be realised.

### Local Growth Aspirations

Peterborough is forecast to experience significant employment and population growth over the next few decades, reflecting a continuation of past trends. The Peterborough Local Plan (adopted July 2019) sets out the overall vision, priorities and objectives for Peterborough for the period up to 2036. The updated strategy identifies the required delivery of 19,440 new homes and 17,600 new jobs by 2036<sup>10</sup>.

### Embankment Area

The City Centre is entering a new and exciting phase in its development, a phase that will deliver significant levels of growth, and the Embankment Area is identified as an opportunity area by Peterborough City Council, and includes proposals for a new Peterborough University, as well as supporting infrastructure such as the Fletton Quays Footbridge, a new pedestrian and cycle bridge connecting Fletton Quays to the Embankment Area. Figure 2.9 below shows an artist impression of the proposed new bridge.



Figure 2.9: Fletton Quays Footbridge

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<sup>10</sup> <https://www.peterborough.gov.uk/council/planning-and-development/planning-policies/local-development-plan>

The University of Peterborough will deliver an independent, campus-based university of 8,000 students and 1,250 staff located at the heart of the City by 2035. The new University will be fast-growing from 2022 to 2028 (with phased infrastructure)<sup>11</sup>:

- **Phase 1:** a first university building in Peterborough City Centre from September 2022 with capacity for around 4,000 students
- **Phase 2:** R&D, innovation and incubator expansion. This will centre on Advanced Manufacturing and Materials Research for educational research and development.
- **Phase 3:** growth from 2025 up to around 6,500 students on roll by 2030. It comprises two further teaching focussed buildings, opening in 2025 and 2028, with an associated student union building and infrastructure works to open in 2025.

Phase 1 of the university received planning permission in November 2020 and will be built upon the existing Wirrina car park. A ground-breaking ceremony was held on the 8<sup>th</sup> of December 2020, with Phase 1 of the University expected to open in September 2022. In addition to this, work is already underway on the Phase 2 Planning Application which is due to be submitted in the next two months. Development of the highway schemes is needed to provide the highway capacity for growth, which is already underway, within this area of the City Centre.

The University of Peterborough has been identified as a key requirement for the north of the CPCA area to improve skills and the economy. In light of COVID-19, and the impact on the economy nationally as well as locally, improving the skills and employability of local people, will be a key component in strengthening the local economy, which will assist with the post COVID-19 economic recovery.

In addition to the University, there are aspirations to relocate the Peterborough United Football Club Ground to a new stadium on the Embankment Area, and to replace the existing Regional Swimming Pool and Fitness Centre with a new centre on Pleasure Fair Meadow Car Park. Please note that these growth elements have not been included within the assessment at this stage, as plans are in the early phases of development and information is currently very limited.

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11 <https://cambridgeshirepeterborough-ca.gov.uk/assets/Growth-Funds/2020.09.22-CSR-University-for-Peterborough-phase-3-final.pdf>



## Wider City Centre Growth

Figure 2.10 details the City Centre Opportunity Areas identified by Peterborough City Council for re-development. Areas 5 and 6 on the Figure are the Embankment Development Area.

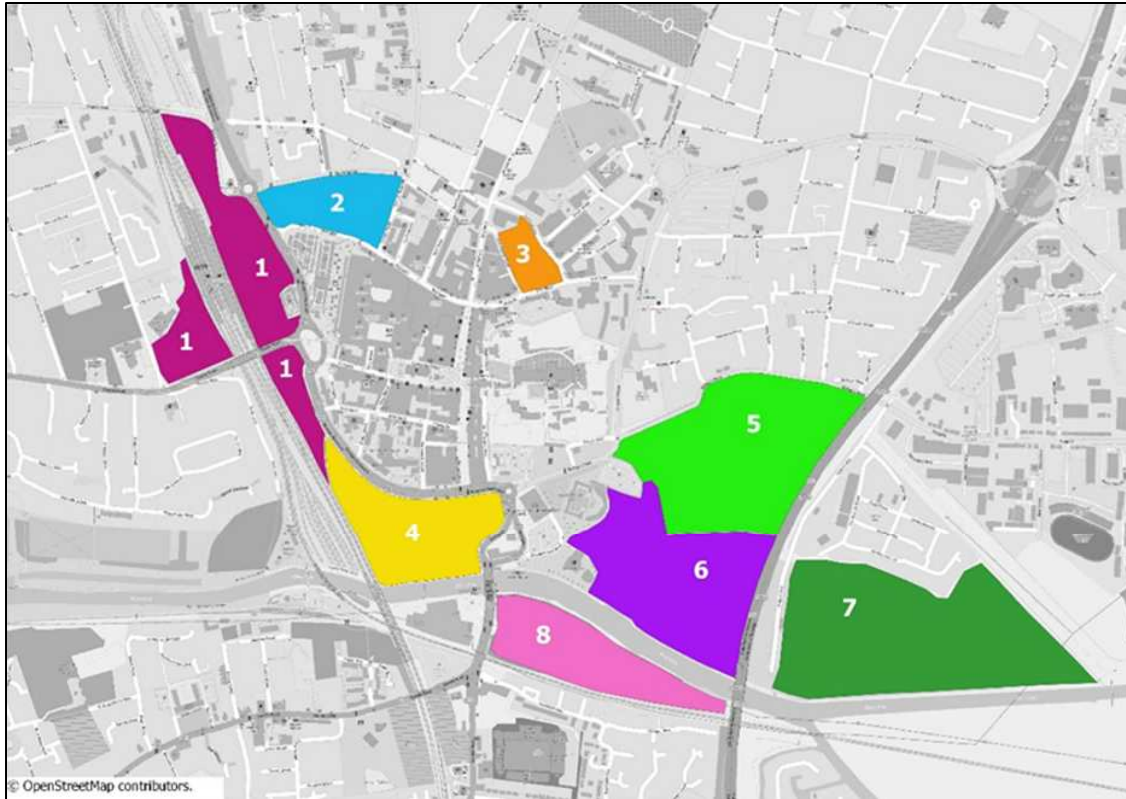


Figure 2.10: Peterborough City Centre Opportunity Areas

To the north west of the Study Area is the Northminster Opportunity Area (Area 3 in Figure 2.10), which is identified for residential-led regeneration including a new market hall for the existing Peterborough City Market. Traffic to this area, is likely to use New Road and Junction 39. Improvements will also benefit Opportunity Area 4 (Rivergate) and 7 (Fengate).

To complement these development aspirations, a City Centre Transport Vision was prepared to guide future planning policy and provide an ambitious vision that can provide consistency to future development and growth within the City Centre. The vision, shown in Figure 2.11, embraces emerging technologies and a shift in travel behaviour including the delivery of multi-functional transport hubs on the periphery of the City Centre providing the vast majority of City Centre car parking (private and public), transition points for goods and deliveries destined for the City Centre and as terminals for an Urban Transit System, linking the City Centre to a wider Peterborough Mass Rapid Transit system, and ultimately the Cambridge Metro (CAM).

The City Centre Transport Vision also states that as each area of the City Centre is planned and regenerated, it should:

- Create high quality Public Realm Corridors from the growth area into the City Centre
- Establish Transport Hubs to replace City Centre parking
- Remove highway capacity and reallocate space for urban realm improvements.



Figure 2.11: City Centre Transport Vision

As highlighted in the Existing Conditions section above, the current transport network within the Study Area is already subject to congestion and delay, with significant capacity issues at Junction 5, and other junctions on the local highway network in both the AM and PM peak hours.

It is acknowledged by the Council that if no changes are made to existing congestion and delay on major routes across the city, then growth aspirations will be compromised. The Local Transport Plan identifies the major infrastructure requirements that are needed to address existing capacity constraints on the network, and those that are required to enable the travel demand to increase in accordance with the city's growth aspirations. Transport improvements on this part of the network will reduce peak hour congestion and improve journey times, resulting in the east of Peterborough City Centre and Fengate becoming more attractive for employers to locate to these areas.

Longer-term highway improvements along the A1139 Frank Perkins Parkway, are considered key to the CPCA's Local Strategy for Peterborough.

### Combined Authority Support

The CPCA has identified a number of strategic projects which it believes will provide transformational benefits for the area. The feasibility study for highway improvements within the University Access Study is one of the studies shortlisted as a priority and was begun in the 2019/20 financial year.

The CPCA recognises that the development of a wider, multi-year pipeline of transport schemes can also contribute towards its objectives. The benefits of such a pipeline include:

- The provision of a steady flow of transport improvements over the short, medium and long-term including potential strategic projects of the future
- Greater opportunity to consider local issues and spread investment around the Combined Authority area
- Early investment in the development of schemes places the Combined Authority in a strong position to bid for and secure additional funding as alternative sources become available.

In order to facilitate the pipeline of work, the process includes initially exploring the feasibility of schemes, and then developing business cases. These are essential steps in defining an improvement and securing funding for its realisation.

In October 2017 the CPCA methodology was set out for prioritising investment, which was based on the criteria shown in Table 2.3.

Table 2.3: Combined Authority Criteria

Case	Criteria
<b>Strategic</b>	<ul style="list-style-type: none"> <li>• Reduce congestion</li> <li>• Unlock housing and jobs</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>• Scale of impact</li> <li>• Value for money</li> </ul>
<b>Financial</b>	<ul style="list-style-type: none"> <li>• Other funding sources / contributors</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>• Delivery certainty</li> <li>• Project risks</li> <li>• Stakeholder support</li> </ul>

The University Access Study has been prioritised for investment by the CPCA, and CPCA investment strategy is another internal driver for change, and an enabler for a scheme to be developed at this location.

## 2.7. External Drivers for Change

External drivers for change are factors that are driving the need for change, that are outside of the scheme promoter's organisation. Examples include public opinion, legislative changes, or response from other events.

There are currently no identified external drivers for change beyond the University Access Study.

## 2.8. Scheme Objectives

A transport scheme can have both primary and secondary objectives. The primary objectives are the fundamental outputs required from the scheme and therefore must be achieved. Secondary objectives are other outputs that are achieved along the way but are not necessary to the success of the scheme. The secondary objectives tend to be delivered as a consequence of delivering the primary objectives.

The primary objectives therefore represent the transport outcomes required by the scheme.

The primary and secondary objectives of the scheme are summarised below. These objectives build upon CPCA objectives outlined previously within this chapter and include objectives selected by Peterborough City Council.

Primary objectives include:

- **Tackle congestion and reduce delay:** Tackle congestion at key pinch points across the Study Area and reduce delay on routes to the Embankment Area
- **Support Peterborough's Growth Agenda and facilitate the development of the Embankment Area including the University of Peterborough:** Ensure the planned University development and other growth aspirations at the site can be accommodated within the highway network.

Secondary objectives include:

- **Positively impact traffic conditions on the wider network:** Positively impact the performance of local routes impacted by the traffic and congestion in and around the Study Area
- **Improve Road Safety:** Reduce personal injury accidents and improve personal security amongst all travellers
- **Limit impact on the local environment and enhance biodiversity:** Mitigate any adverse impact of a scheme and enhance biodiversity net gain within the Study Area.

Any schemes developed for the University Access Study will need to satisfy all of the primary objectives, and as many of the secondary objectives as possible.

Both the CPCA and Peterborough City Council have committed to combatting climate change and moving towards net zero carbon emission in communities and economies, as well as to protect and increase biodiversity. Any transport scheme must take this into account and work towards these objectives.

Any scheme identified for the University Access Study Area will look to mitigate any carbon emissions and biodiversity issues throughout the design stage in a number of ways, including, but not limited to:

- Tree planting
- Improvements to localised sustainable transport routes
- Use of sustainable material in construction
- Improved ways of working.

All Peterborough City Council decisions require a Carbon Impact Assessment to be undertaken prior to a project being given approval. This is one of the governance steps that the council has established after declaring a climate emergency and committing to net zero by 2030.

## 2.9. Measures of Success

Table 2.4 beneath sets out the measures for success against which any potential improvements should be monitored. The primary objectives are highlighted in white and the secondary objectives are highlighted in blue.

Table 2.4: Study Objectives and Measures of Success

Objective	Scheme Outcome
Tackle congestion and reduce delay	<ul style="list-style-type: none"> <li>Reduced congestion and delay on approaches to key junctions in the Study Area,</li> </ul>
Support Peterborough's Growth Agenda and facilitate the development of the Embankment Area including the University of Peterborough	<ul style="list-style-type: none"> <li>Ensure successful delivery of committed and statutory development at the Embankment Area, through increasing capacity on the road network, in order to cater for existing and future traffic demand</li> </ul>
Positively impact the wider network	<ul style="list-style-type: none"> <li>Positively impact the interaction between the A1139 Frank Perkins Parkway Junction 5, Junction 39, Junction 38 and Junction 37, and reduce delay within the wider area</li> </ul>
Improve road safety	<ul style="list-style-type: none"> <li>Reduce accidents across all modes of transport</li> </ul>
Limit impact on the local environment and enhance biodiversity	<ul style="list-style-type: none"> <li>Mitigate and offset any detrimental environmental impacts of a scheme, and enhance natural and historic features around the scheme at all opportunities</li> </ul>



## 2.10. Constraints

The following constraints have been identified:

- **Funding:** the cost of the scheme will need to compete with other transport infrastructure funding priorities which may exceed the CPCA's core transport investment budget allocation.
- **Environmental:** There are no ecology or biodiversity designations within the Study Area, however the Nene Washes are directly to the east along the River Nene. The Nene Washes are a designated Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI) and a Special Protection Area (SPA). There is a potential for archaeological constraints in the area. Flag Fen is close by and there have been other historical finds in the local area recently. The Bishop's Road Recreation Area, adjacent to the A1139 Frank Perkins Parkway has an avenue of ten Corsican Elms which are considered to be an important community asset.
- **Topographical:** The Embankment is located to the north of the River Nene and at the edge of the Fens, where the water table is typically quite high. Any schemes developed in this area will need to consider if mitigations for flood risk are required.
- **Land Ownership:** Improvements at the Boongate / Fengate Junction will require the purchase of a small portion of land. Early consultations with the landowners will be undertaken.
- **Funding / Budget:** Improvements will need to be achievable within the budgets available, but options should not be constrained by current funding, as other funding sources may be found to compliment CPCA budgets.
- **Structural / Highway Boundary:** Improvements will need to be achievable within the land available.
- **Disapproval from the Public or Stakeholders:** Both packages are likely to receive significant interest and a comprehensive consultation will be undertaken.
- **COVID-19:** it is not yet known what long term impact the COVID-19 will have on how the general public will interact with transport systems moving forward. Monitoring of traffic levels has been undertaken since March 2020. Data collected from a permanent monitoring sensor on nearby A1260 Nene Parkway demonstrates that peak hour road traffic is currently back to approximately 90% of pre COVID-19 levels (November 2020). Traffic levels will continue to be monitored as further work is undertaken to develop the scheme. Specific COVID-19 sensitivity tests will be undertaken as part of the Economic Assessment reported at OBC if still relevant.

### 2.11. Interdependencies

Beyond typical highway scheme risks, and the constraints listed above, there are not considered to be any internal or external factors upon which the successful delivery of a scheme is dependent.

The proposed improvements to the Boongate / Fengate Junction will require a small portion of land adjacent to the highway boundary. All of other land required is within the Council's ownership.

### 2.12. Key Risks

The scheme is considered to be low risk in construction terms. However, the COVID-19 pandemic saw a significant drop in highway usage during the national lock-down earlier in the year. It is not yet known what long term impact the COVID-19 pandemic will have on how the general public will interact with transport systems moving forward.

Data collected from a permanent monitoring site on the nearby A1260 Nene Parkway is being used as a proxy for traffic levels on the Parkway Network. The data collected has been used throughout the COVID-19 pandemic to track traffic levels on Peterborough's Parkway Network, and demonstrates that peak hour road traffic is currently back to approximately 90% of pre COVID-19 levels (November 2020). Monitoring will continue to be undertaken as the scheme develops.

Other key strategic risks identified include:

- Delay to decision on scope of scheme
- Project progress on hold
- Delay in obtaining approval to commence the next stage
- Land Ownership
- Statutory Undertakers
- Delay in sign off of grant agreement
- Delay to project
- Not coming to an agreement with developer
- Delay to delivery of the development.

Appendix B contains the Project Key Risk Register which identifies each of these risks and considers mitigation. The Risk Register is a live document which is managed by Peterborough City Council and reviewed regularly by the CPCA.

### 2.13. Stakeholders

The key stakeholders are considered to be:

- Cambridgeshire and Peterborough Combined Authority (CPCA)
- Peterborough City Council (The Council)
- University of Peterborough Promoters
- Other developers with interests in the Embankment Area
- Peterborough Investment Partnership
- Ward Councillors
- Environment Agency
- Public Transport Providers
- Businesses and residents situated within the vicinity of the scheme / s.

Engagement and communication with key stakeholders are an essential element of the planning process for major transport schemes. Stakeholder's needs and requirements should be considered as part of the final scheme design.

The CPCA and Peterborough City Council are directly involved in developing the scheme. Public consultation will be undertaken at the next stage of the scheme development, and results from the exercise will be reported in the OBC.

### 2.14. Powers and Consents

Peterborough City Council is the local highway authority and have all the necessary powers under the Highways Act 1980 to undertake the works within the highway boundary. These powers extend to Skanska under the PHS contract, which was granted following a full competitive tendering process.

The CPCA is the local Transport Authority, and responsible for strategic transport decisions and investment within the area. As such, the CPCA would be the recipient of the Grant Funding from the DfT and would provide the Section 151 sign off.

Elements of both Package 1 and Package 2 will require Community Related Asset (CRA) Land which is land owned by Peterborough City Council beyond the Highway Boundary, however it is possible for the Council to build on this. CRA Land is land within Peterborough that was previously owned by the Peterborough Development Corporation and has been set aside for future use Peterborough City Council for the benefit of Peterborough, including for transport improvements beyond the highway boundary, subject to Council approval.

Privately owned land is required for the proposed scheme at the Fengate / Boongate Junction. The land required is currently a grass verge with some vegetation. It is located directly adjacent to the

highway and is anticipated to serve no function to the landowner. Engagement with the landowner will begin once the Preliminary Design has identified the amount of land required. It is anticipated that improvements to the junction can still be made without the land acquisition, however the level of benefit would not be as great as currently proposed.

## 2.15. Option Development and Assessment

An option development workshop was held in February 2020 which was attended by representatives from Peterborough Highway Services. The workshop reviewed the existing conditions and issues across the Study Area, explored its relationship with the surrounding road network and discussed the various constraints at the site. The purpose of the workshop was to develop potential improvement options to be considered by this study.

A total of fourteen options were identified, with potential schemes ranging widely in estimated cost and level of impact on the network. These form the 'Long List' and are summarised in Table 2.5.

Table 2.5: Long List of Options for the University Access Study

Option Description	
<b>New Parkway Junction (Junction 4A)</b>	
1	New south facing slip roads into Embankment Area
2	New south facing slip roads connecting to Bishop's Road
3	Provision of new northbound off slip to Bishop's Road
<b>Junction 5</b>	
4	Signals at stop line of southbound off slip
5	Signalise both of the A1139 Frank Perkins Parkway off-slips
6	Left Dedicated Lane from Boongate east to A1139 Frank Perkins Parkway southbound on-slip
7	Carr Road eastbound only from Junction 5
<b>Junction 39</b>	
8	Alterations to entrance into Wellington Street car park
9	Reduce width of circulatory carriageway
10	Partial Signalisation – Boongate Approach
11	Dual Boongate between Junction 5 and Junction 39 in both directions
12	Dual Boongate eastbound only
<b>Junction 38</b>	
13	Bishop's Road westbound flare pulled back or dualled.
14	Signalise Vineyard Road / Bishop's Road Junction

## EAST Assessment

The DfT's Early Assessment and Sifting Tool (EAST) was used to assess the long list of options against objectives, to discount any schemes that are not considered to meet the fundamental scheme objectives.

The objectives used in the EAST assessment were formulated to reflect the scheme objectives and other factors which can influence the deliverability of a scheme, such as public and stakeholder acceptability. Scores were based on the discussion and collective opinion of the workshop delegates. The objectives used are outlined in Table 2.6 beneath.

Table 2.6: Scheme Objectives Assessed

Strategic Objectives
Ability to reduce congestion
Making best use of existing infrastructure
Safety Improvements
Ability to support the local growth agenda, including housing and employment growth
Economic Objectives
Affordability (Value for Money)
Scale of impact on local environment
Management/Deliverability Objectives
Land Acquisition an CPO
Scheme Risk / Buildability
Stakeholder support and public acceptability

The EAST Scoring Assessment is reported within the OAR. Scores were given in relation to the proportion of the expected impact on the entire junction and not just the section of road it occurs on. A neutral score was given when the score against an objective is uncertain, or there is a comparable negative and a positive element associated with the scheme.



Table 2.7 details the options taken forward for further assessment within the traffic modelling.

Table 2.7: Shortlisted Options

Option Description	
New Parkway Junction	
1	New south facing slip roads into Embankment Area
2	New south facing slip roads connecting to Bishop's Road
3	Provision of new northbound off slip to Bishop's Road
Junction 5	
4	Signals at stop line of southbound off slip
5	Signalise both of the A1139 Frank Perkins Parkway off-slips
6	Left Dedicated Lane from Boongate east to A1139 Frank Perkins Parkway southbound on-slip
Junction 39	
8	Alterations to entrance into Wellington Street car park
9	Reduce width of circulatory carriageway
10	Partial Signalisation – Boongate Approach
11	Dual Boongate between Junction 5 and Junction 39 in both directions
12	Dual Boongate eastbound only
Junction 38	
13	Bishop's Road westbound flare pulled back or dualled.
14	Signalise Vineyard Road / Bishop's Road Junction

Option 7 (Carr Road eastbound only) was the only option from the long list that was dismissed during the EAST assessment was Option 7. This scored negatively due to the minimal impact on enhancing capacity in the Study Area and also the likely lack of public support especially from local businesses in the area.

## Technical Assessment

The technical assessment of shortlisted options has been undertaken using the PTM3 model.

PTM3 has been developed using SATURN (Version 11.4.07), a traffic and assignment model which can be used to evaluate potential traffic schemes. Saturn focuses on whether a defined network can cope with a defined vehicle demand in a defined period of time.

The Saturn traffic model has been constructed to represent the morning (AM) peak hour from 08:00 to 09:00, and an evening (PM) peak hour from 17:00 to 18:00, in order to represent the most congested time periods. In addition, an Inter-Peak (14:00 to 15:00) model has also been constructed to understand the impact of any improvements outside of the congested periods of the day.

PTM3 has a 2019 baseline, and the model is validated and calibrated to ensure it represents the traffic conditions experienced on the network during the survey period.

To understand traffic conditions in future years, growth factors have been derived from the DfT's Trip End Model Presentation Program (TEMPro) from the appropriate National Trip Ends Model (NTEM) zone for each traffic input zone to the network in the forecast years 2026, 2031 and 2036. Local growth of LGV and HGV traffic has been estimated using 2015 Road Traffic Forecast data produced from the National Transport Model (NTM).

Do-Minimum (DM) models for 2026, 2031 and 2036 have been produced to enable an assessment of the options and a comparison to what would happen if no transport intervention(s) were delivered.

The technical assessment undertaken at this stage of the University Access Study has concentrated on the 2036 future year to capture the full impact of the Local Plan growth. Further information on this assessment is contained within the University Access Study OAR.

### Option Packaging

The detailed assessment within the PTM3 has identified two packages of schemes to address the congestion and delay that is expected to occur on the highway network across the Study Area as a result of growth in the City Centre, and specifically around the Embankment Area.

The common starting point for both packages was to alleviate the capacity issues at Junction 5 which are forecast to result in significant delays in both the 2036 AM and PM peak hours. The two packages each have a different approach to addressing the issues at Junction 5. Package 1 is based around the principle of providing a new northbound off-slip from the A1139 Frank Perkins Parkway to Bishop's Road, whereas the second package is based on the principle of upgrading the existing infrastructure by improving the capacity of the A1139 Frank Perkins Parkway Junction 5 and Boongate.

Both packages have impacts on the wider local transport network, particularly on routes providing access to and from Junction 5, where further options have been identified and tested. These options build upon the shortlisted options from the EAST assessment.

The detailed assessments of Package 1 and Package 2 are reported in full in the University Access Study OAR and are summarised beneath.

### Package 1: Detailed Assessment Summary

The following options have been assessed within the PTM3 to form Package 1:

- New northbound off-slip linking the A1139 Frank Perkins Parkway with Bishop's Road (Junction 4a)
- Junction 38 – 40m flare extension on Bishop's Road East
- Junction 5 – signalisation of the A1139 Frank Perkins Parkway southbound off-slip
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.

The implementation of this package reduces demand on the Junction 5 northbound off-slip, particularly in the AM peak hour, and effectively removes the existing and future year delay on this approach.

The creation of a new northbound off-slip onto Bishops Road increases traffic along this route and results in higher levels of delay at Junction 38 and the Fengate / Boongate Junction. The flare extension on Bishop's Road East and Fengate West mitigate the impact of this, and result in an improvement to the operation of Junction 38, and the Boongate / Fengate Junction in both the AM and PM peak hours.

The partial signalisation of A1139 Frank Perkins Parkway southbound off-slip at Junction 5 significantly changes the route choice of traffic in the eastern part of the city. The partial signalisation significantly reduces delay on the Carr Road and Boongate East approaches to Junction 5 and increases the attractiveness these routes to Junction 5 as they receive more opportunity to enter the circulatory. Consequently, the vehicle demand on Fengate and Boongate East has increased, whilst vehicle demand has decreased on Vineyard Road and St John's Street.

The Strategic Assessment of Package 1 has demonstrated that it can effectively reduce delay at Junction 5 of the A1139 Frank Perkins Parkway, and mitigate the impact on the local road network, leading to reductions in delay at key junctions within the Study Area across both peak periods.

#### Package 2: Detailed Assessment Summary

The following options have been assessed and form Package 2:

- Junction 5 – signalisation of A1139 Frank Perkins Parkway northbound and southbound off-slips, extension of the northbound off-slip left turn flare by approximately 20m, and provision of a left dedicated lane from the A1139 Frank Perkins Parkway northbound off-slip to Boongate West
- Junction 38 – 40m flare extension to Bishop's Road East
- Boongate West – dualling between Junction 5 and Junction 39
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – Creation of a roundabout.

The implementation of the partial signalisation of Junction 5 will significantly changes the re-routing of traffic in the eastern part of the city.

The partial signalisation of Junction 5 combined with the dualling of Boongate West has made this route more attractive for vehicles destined for the City Centre and the Embankment Area. The flare extension to the Bishop's Road East approach to Junction 38 has also encouraged vehicles to use this route to access to Parkway Network rather than via Fengate.

During the PM peak hour, the partial signalisation of Junction 5 increases the attractiveness of Carr Road and Boongate East approaches to Junction 5 as they are now provided more opportunity to enter the circulatory, and the delay on these approaches is significantly reduced in the PM peak hour.

The Package 2 improvements have increased the capacity of the existing, and significantly reduced delay at the key junctions across the network to enable growth at the Embankment Area.

### Remaining Delay at Junction 37

Significant delays still occur in both Packages at Junction 37. Interventions assessed at this location have not reduced delay, and the junction appears to remain over capacity in both peak hours in 2036. All approaches to the roundabout are 3-lanes and all exits are 2-lane, therefore no additional capacity can be gained at this roundabout unless it is signalised.

Consultation with traffic signal engineers has identified two improvements at this junction including the signalisation of the existing roundabout, and the creation of a new signalised junction, that have potential to improve the performance of the junction and reduce delay. The strategic nature of the PTM3 model means that it is unable to effectively model complex signalised junctions, and so these options will be assessed as part of the operational assessment undertaken at the next stage of the study.

## 2.16. Summary of Technical Assessment

The Strategic Assessment of both Package 1 and Package 2 has demonstrated that the improvements can effectively reduce delay at Junction 5 of the A1139 Frank Perkins Parkway, and mitigate the impact on the local road network, leading to reductions in delay at key junctions within the Study Area across both peak periods.

The Strategic Assessments has also shown that both Packages will increase the capacity of the highway network and reduce existing and future delay at the key junctions across the network to enable growth at the Embankment Area. This demonstrates that both Packages meet the scheme objectives outlined in Chapter 2, including:

- Tackle congestion at key junctions across the study area and reduce delay on routes to the Embankment Area
- Support Peterborough's Growth Agenda and facilitate the development of the Embankment Area including the University of Peterborough

As both packages meet the scheme objectives and reduce existing and future delay at the key junctions in the Study Area, Package 1 and Package 2 will be considered within the Economic Assessment.

## 2.17. Sustainable Transport Measures

A Non-Motorised User (MNU) audit was conducted across the Study Area to review the quality of the existing walking and cycling infrastructure, and to identify any potential improvements.

The audit identified the following potential improvements:

- Resurface all footpaths in the immediate vicinity of the Embankment Area, improving accessibility for all users. Resurfacing should reflect that on the most western section of Bishop's Road, where high quality upgrades to surface quality and shared use were implemented in 2018
- Implement controlled crossing points at the off / on slips of Junction 5 (southern side of circulatory) and along the Boongate approach / exit of Junction 39, increasing personal safety and reducing lengthy waiting times for active modes
- Improved lighting on routes which are set back from the roadside, as well as underpasses, improving the perceived safety of these areas.

In addition to these improvements, Peterborough City Council and the CPCA are preparing a plan of proposed walking and cycling improvements for the wider embankment area including the provision of a new footbridge over the River Nene and a riverside boardwalk linking the Embankment Area with Stanground.

Figure 2.12 shows the existing walking and cycling routes that should be prioritised for improvement. The routes provide key links to the wider walking and cycling infrastructure as well as the car parking sites that will be used by visitors to the Embankment Area (Wellington Street and Pleasurefair Meadow).



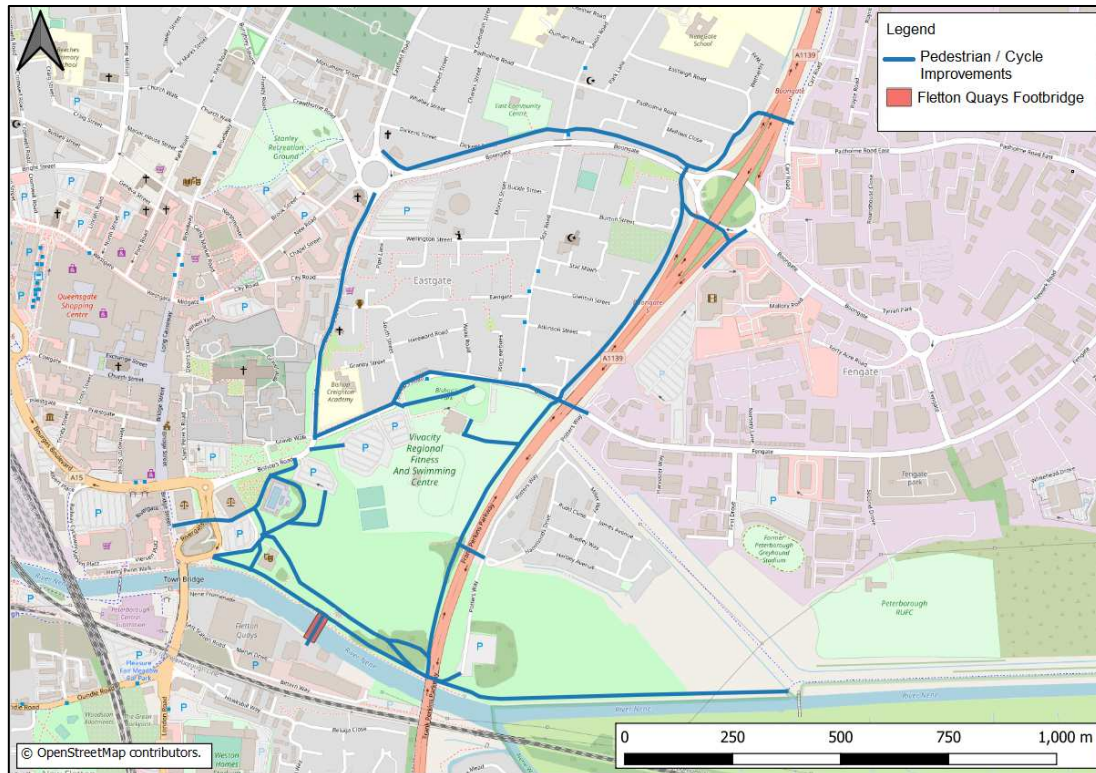


Figure 2.12: Existing Walking and Cycling Routes Identified for Improvement

These recommendations will be considered as they study progress to the next stage and be incorporated into the design process. It should be noted that the NMU audit and subsequent recommendations predate the adoption of the LTN1/20 Cycle Infrastructure Design guidance by Peterborough City Council, which will be used as the design standard for any future cycling improvements within Peterborough and will be incorporated into this project at Preliminary Design stage. Confirmation on the wider Embankment development plans is required before committing to individual walking and cycling schemes to ensure they fit with the wider masterplan for the area.

## 3. The Economic Case

### 3.1. Introduction

This section sets out the approach taken to assess the economic case for the University Access Study and demonstrates that the proposed package of schemes would offer High Value for Money.

The scheme appraisal focuses on the aspects of scheme performance that are relevant to the nature of the intervention and uses the latest WebTAG guidance (July 2020). These impacts are not limited to those directly impacting on the economy or those which can be monetised. The economic, environmental, social and distributional impacts of the proposal are all examined, using qualitative, quantitative and monetised information where appropriate.

### 3.2. Options Appraised

Details of the option development and assessment process are summarised in the Strategic Case and full details are provided in the OAR.

The technical assessment documented in the OAR has identified that both packages assessed within the modelling offered network wide benefits, and so an Economic Assessment was undertaken for each package.

For reference, Package 1 consisted of the following improvements:

- New northbound off-slip linking the A1139 Frank Perkins Parkway with Bishop's Road (Junction 4a)
- Junction 38 – 40m flare extension on Bishop's Road East
- Junction 5 – signalisation of the A1139 Frank Perkins Parkway southbound off-slip
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.

For reference, Package 2 consisted of the following improvements:

- Junction 5 – signalisation of the A1139 Frank Perkins Parkway Northbound and Southbound off-slip
- Dualling of Boongate between Junction 5 and Junction 39
- Junction 38 – 40m flare extension on Bishop's Road East
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.

### 3.3. Approach to Appraisal

The Economic Case for this scheme is focused on the following aspects:

- Assessing the monetised direct, localised, and economic efficiency benefits of the scheme
- Qualitative appraisal of wider scheme benefits, such as environmental, noise, and enablement of planned development
- Offsetting identified benefits against the scheme costs to provide a Benefit to Cost (BCR) ratio.

Details regarding the benefits and costs are detailed in the rest of this chapter.

The PTM3 model has been used to test the package of options, and model outputs, along with scheme costs, have been assessed in DfT's Transport User Benefit Appraisal (TUBA) tool to calculate a package Benefit to Cost Ratio (BCR).

The SATURN based highway model includes forecast years of 2026, 2031, and 2036, which have been used to appraise impacts of the core scenario. These modelled forecast years have been used in the current TUBA economic appraisal and operational assessment.

Travel demands in the core scenario are consistent between the Do Minimum and Do Something situations, for each forecast year. The model demonstrates that the preferred package of schemes will reduce congestion, leading to less delay and travel time.

Full details relating to the calibration and validation of the model can be found in the Local Model Validation Report (LMVR), and details about the forecasting procedure can be found in the Forecasting Report.

The model output files were then entered into the Transport User Benefits Appraisal (TUBA, 1.9.14) software to undertake the Economic Assessment and calculate a BCR. The annualisation factors shown in Table 3.1 below were specified within TUBA to calculate the likely annual transport user benefits for the AM, Inter, and PM peak hours and have been derived from nearby Highways England WebTRIS data. It was found that the 07:00 – 08:00 and 16:00 – 17:00 hour flows closely resembled the total flows observed within the modelled AM and PM peak hours. AM and PM annualisation factors have therefore been calculated that convert the single peak hour demand to annual peak period demand.

Table 3.1: Annualisation Factors

Time Slice	Duration (min)	Annualisation Factor	Period	Description
1	60	245	1	Convert from 08:00 – 09:00 to annual 07:00 – 09:00 period
2	60	525	2	Convert from 17:00 – 18:00 to annual 16:00 – 18:00 period
3	60	1518	3	Convert from 14:00 – 15:00 to annual 10:00 – 16:00 period

A proportionate approach focused on transport user benefits (Transport Economic efficiency; TEE) has been undertaken to demonstrate value for money from the preferred package of schemes. The TEE tables are provided in Appendix C.

### 3.4. Economic Assessment - Package 1

#### Present Value Costs

A scheme cost estimate has been produced for Package 1. The Base Investment Costs are detailed in Table 3.2 below, and the subsequent steps taken to calculate the Present Value Costs (PVC) are described beneath.

The Economic Assessment has undertaken for a 60-year assessment period (2020 to 2080).

The Base Investment Cost is the capital cost required to construct the scheme in current year (2020) prices, without a risk allowance. This is derived from the scheme cost estimate based on the Preliminary Design produced by Highway and Structures Engineers.

Table 3.2 shows the Base Investment Cost profiled over the next five calendar years, and broken down into Construction, Land, Design and Supervision costs.

Table 3.2: Package 1: Base Investment Cost (2020 Prices)

Calendar Year	Construction Costs (Highways)	Construction Costs (Structures)	Land & Property Costs	Preparation / Supervision Costs	Other	Total
2021				569,869		569,869
2022				332,741		332,741
2023	1,398,130		100,000	280,398		1,778,528
2024	2,796,259			368,328		3,164,588
2025						
<b>Total</b>	<b>4,194,389</b>			<b>1,551,337</b>		<b>5,845,726</b>

Note that £100,000 has been allocated for land costs associated with improvements at the Boongate / Fengate Junction. The Preparation and Supervision Costs include Business Case development, all design work including site surveys and supervision during construction phases.

The PVC for use in the Economic Assessment has been calculated using the following steps:

- Real Cost increases were calculated based on the Base Investment Cost spend profile. The Base Cost adjustment factor was calculated by dividing the Construction Industry Inflation Rate (5%) by the Annual GDP Factor derived from the TAG Databook (July 2020) for each of the years within the assessment period. The inflation rate of 5% was derived from construction output price indices as well as previous knowledge of costs associated with past schemes in Peterborough. Peterborough Highways Services works is measured using BCIS indices, the Table 3.3 shows the categories and price increase (%) for 2019-2020.

Table 3.3: Inflation increases on Construction Costs 2019-2020

Category	Price increase 2019-2020
WC10/ 1 Routine, Cyclic and Time Charge Works	3.25%
WC10/ 2 Renewals and Construction Works	1.81%
WC10/ 3 Professional Services	3.62%
WC10/ 4 Machine Surfacing	4.23%
WC10/ 5 Hand Surfacing/Patching	3.04%
WC10/ 6 Surface Dressing	5.38%
WC10/ 7 Road Markings	1.76%
WC10/ 8 Street Lighting	1.56%

- A Risk Allowance of 10% (5% Construction Risk, 5% COVID-19 working practices) was then applied during the years of construction. The total cost of the Risk Allowance is £558,503. The risk associated with post-COVID19 includes working practices such as social distancing requirements, for example additional welfare facilities on site and increased site compound size.
- Optimism Bias was then applied in line with guidance provided in TAG unit A1.2 (July 2020). An Optimism Bias of 44% was applied to represent the maturity of the design. The total Optimism Bias applied was £2,703,152.
- Costs were then rebased back to 2010 using factors derived from the TAG Databook (July 2020) GDP Deflator.
- Costs were then discounted to 2010 in line with guidance provided in TAG unit A1.2 (July 2020).
- Finally, costs were converted to 2010 Market Prices using a factor of 1.19.

Table 3.4 beneath shows the costs described above.

Table 3.4: Package 1: Economic Case Scheme Cost Estimates

Description of Cost Type	Construction Cost (£)
Base Investment Cost	5,845,726
Base Cost with Real Cost Increases	6,527,592
Risk Adjusted Base Cost with Real Cost Increases	7,086,095
Risk Adjusted Base Cost with Real Cost Increases and Optimism Bias	9,787,839
Rebased to 2021 Price Year	8,231,309
Discounted to 2010 Prices	5,187,997
Adjusted to Market Prices	6,173,717

#### Present Value Benefits

The transport benefits of the scheme were assessed using the SATURN based PTM3 (built in v11.4.07H).

Full details relating to the calibration and validation of the model can be found in the Local Model Validation Report (LMVR), and details about the forecasting procedure can be found in the Forecasting Report.

Two core network scenarios were developed for the Economic Assessment, these were the Do Minimum (DM) and Do Something (DS) scenarios. The DM scenario represents future growth without highway intervention (without scheme), and the DS scenario includes the package of schemes within the model network (with scheme) with the same level of future traffic growth.



The difference between the DM and DS scenarios demonstrate the benefits of implementing the scheme. These benefits are measured using:

- Network assignment statistics
- Link flow changes
- Journey times
- Journey routing.

The Model output files were then entered into the Transport User Benefits Appraisal (TUBA, 1.9.13) software to undertake the Economic Assessment and calculate a BCR.

TUBA produces figures for a number of benefits, including Greenhouse Gases, User benefits, and Indirect Taxation. Indirect taxation often provides a negative benefit figure. This is a result of the reduced fuel being purchased as journeys become more efficient with the improvements. This in turn reduces the money the government receives in taxes.

This identifies the Present Value Benefits (PVB) to be **£32,145,000**. A breakdown of these benefits are shown in Table 3.5 beneath.

#### Benefit Cost Ratio

The Benefit Cost Ratio (BCR) is the ratio of PVB to PVC. Table 3.5 beneath summarises the BCR for the preferred scheme as calculated using TUBA.

Table 3.5: Package 1 AMCB Table

Value (£'000s) 2010 prices, benefits discounted to 2010	
Benefits	
Greenhouse Gases	557
Consumer Users (Commuting)	7,160
Consumer Users (Other)	15,127
Business Users/Providers	10,383
Indirect Taxes	-1,082
<b>Present Value of Benefits (PVB)</b>	<b>32,145</b>
Costs	
Broad Transport Budget	6,154
<b>Present Value of Costs (PVC)</b>	<b>6,154</b>
Net Benefit / BCR Impact	
<b>Net Present Value (NPV)</b>	<b>25,991</b>
<b>Benefit/Cost Ratio (BCR)</b>	<b>5.223</b>

The DfT uses the following thresholds to determine the Value for Money statement associated with a BCR:

- Low Value for Money if BCR = 1.0 to 1.5
- Medium Value for Money if BCR = 1.5 to 2.0
- High Value for Money if BCR = 2.0 to 4.0
- Very High Value for Money if BCR > 4.0.

Based on transport user benefits alone, this scheme will provide **Very High Value for Money**.

The Economic Efficiency of the Transport System (TEE) table can be found in Appendix C.

### Spread of Benefits

The TUBA results include a detailed breakdown of the scheme benefits including (but not limited to) benefits by time saving and benefits by distance. These benefits are broken down by vehicle type and journey purpose to better understand how different user types will benefit from the scheme. Table 3.6 below shows the time benefits saving by vehicle type.

Table 3.6: Package 1 Non-Monetised Time Benefits by Time Saving

Non Monetised Benefits by Time Saving							
Time Benefits (thousands of person hrs) by size of time saving							
Vehicle	Purpose	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	0	-4	-697	1129	225	0
Car	Commuting	0	-6	-1425	2482	448	0
Car	Other	0	-30	-10739	14665	2578	1
LGV Freight		0	-23	-1019	1420	566	0
OGV1		-1	-17	-509	473	137	11

Table 3.6 shows that car users experience the greatest time benefit from the implementation of the scheme. Within the car users, the 'other' journey purpose experiences the greatest impact, which is correlates with the composition of trip types across the model.

Table 3.7 below shows the journey time benefits by distance.

Table 3.7: Package 1 Non-Monetised Time Benefits by Distance

Non Monetised Benefits by Distance									
Time Benefits (thousands of person hrs) by size of time saving									
Vehicle	Purpose	< 1 km	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	> 200 kms
Car	Business	4	279	302	79	14	-23	0	-1
Car	Commuting	13	475	670	281	76	-24	6	3
Car	Other	74	4978	2126	-174	-100	-379	-27	-24
LGV Freight		4	188	378	253	104	30	-3	-9
OGV1		0	18	55	31	11	-10	14	-25

The table shows that those making trips of between 1km - 5kms benefit most from the proposed package. As with the time savings, car users experience the greatest level of benefit, and these apply mostly to those who travel for 'other' purposes.

Table 3.8 below shows that the scheme benefits are greatest in the Inter-peak period than for the other peak period, which is to be expected as the Inter-peak applies to a much greater time span. The AM peak hour experiences greater benefits than the PM peak hour, but all time period experience high benefits overall.

Table 3.8: Package 1 User Benefits by Time Period

User Benefits and Changes in Revenues (£,000s)	
Time Period	User Time
AM	5,756
IP	21,615
PM	1,921

#### Low Growth Sensitivity Test – Package 1

As the benefits of the scheme largely relate to reducing delay to existing and future traffic, a lower than anticipated future growth in traffic levels, is the greatest risk to the economic viability of the scheme. This could occur because of a delay to City Centre growth, which is considered unlikely given the progress and pace of the University development to date, or as a result of a more general economic downturn which could be caused by the COVID-19 Pandemic. Low Growth sensitivity tests have therefore been undertaken to consider the robustness of the scheme Value for Money in the event of these scenarios. The Low Growth sensitivity tests have been undertaken using the methodology outlined within WebTAG Unit M4.

Table 3.9 shows the AMCB for the Package 1 Low Growth Scenario. The BCR reduces to 2.476 in the Low Growth Scenario compared to the BCR of 5.223 in the core scenario.

Table 3.9: Package 1 Low Growth AMCB Table

Value (£'000s) 2010 prices, benefits discounted to 2010	
Benefits	
Greenhouse Gases	392
Consumer Users (Commuting)	3,274
Consumer Users (Other)	7,536
Business Users/Providers	4,794
Indirect Taxes	-762
<b>Present Value of Benefits (PVB)</b>	<b>15,234</b>

Costs	
Broad Transport Budget	6,154
<b>Present Value of Costs (PVC)</b>	<b>6,154</b>
Net Benefit / BCR Impact	
<b>Net Present Value (NPV)</b>	<b>9,080</b>
<b>Benefit / Cost Ratio (BCR)</b>	<b>2.476</b>

This test demonstrates that Package 1 will still offer Very High Value for Money in a low growth scenario.

### 3.5. Economic Assessment - Package 2

#### Present Value Costs

A scheme cost estimate has been produced for Package 2. The Base Investment Costs are detailed in Table 3.9 below, and the subsequent steps taken to calculate the Present Value Costs (PVC) are described beneath.

The Economic Assessment has undertaken for a 60-year assessment period (2020 to 2080).

The Base Investment Cost is the capital cost required to construct the scheme in current year (2020) prices, without a risk allowance. This is derived from the scheme cost estimate based on the Preliminary Design produced by Highway and Structures Engineers.

Table 3.10 shows the Base Investment Cost profiled over the next five calendar years, and broken down into Construction, Land, Design and Supervision costs.

Table 3.10: Package 2: Base Investment Cost (2020 Prices)

Calendar Year	Construction Costs (Highways) (£)	Construction Costs (Structures) (£)	Land & Property Costs (£)	Preparation and Supervision Costs (£)	Total Base Investment Cost (£)
2021				48,214	48,214
2022				26,786	26,786
2023	2,488,986	5,243,101	100,000		7,832,087
2024	4,977,972	10,486,202			15,464,173
2025					
<b>Total</b>	<b>7,466,957</b>	<b>15,729,303</b>	<b>100,000</b>	<b>75,000</b>	<b>23,371,260</b>

Note that £100,000 has been allocated for land costs associated with improvements at the Boongate / Fengate Junction. The Preparation and Supervision Costs include Business Case development, all design work including site surveys and supervision during construction phases.

The PVC for use in the Economic Assessment for Package 2 has been calculated using the following steps:

- Real Cost increases were calculated based on the Base Investment Cost spend profile. The Base Cost adjustment factor was calculated by dividing the Construction Industry Inflation Rate (5%) by the Annual GDP Factor derived from the TAG Databook (July 2020) for each of the years within the assessment period. The inflation rate of 5% was derived from construction output price indices as well as previous knowledge of costs associated with past schemes in Peterborough. Peterborough Highways Services works is measured using BCIS indices, the Table 3.11 shows the categories and price increase (%) for 2019-2020.

**Table 3.11: Inflation increases on Construction Costs 2019-2020**

Category	Price increase 2019-2020
WC10/ 1 Routine, Cyclic and Time Charge Works	3.25%
WC10/ 2 Renewals and Construction Works	1.81%
WC10/ 3 Professional Services	3.62%
WC10/ 4 Machine Surfacing	4.23%
WC10/ 5 Hand Surfacing/Patching	3.04%
WC10/ 6 Surface Dressing	5.38%
WC10/ 7 Road Markings	1.76%
WC10/ 8 Street Lighting	1.56%

- A Risk Allowance of 10% (5% Construction Risk, 5% COVID-19 working practices) was then applied during the years of construction. The total cost of the Risk Allowance is £2,072,973. The risk associated with post-COVID19 includes working practices such as social distancing requirements, for example additional welfare facilities on site and increased site compound size.
- Optimism Bias was then applied in line with guidance provided in TAG unit A1.2 (July 2020). Optimism Bias of 44% was applied for the highway elements and 66% applied to the structural elements of the scheme to represent the maturity of the design. The total Optimism Bias applied was £12,315,376.
- Costs were then rebased back to 2010 using factors derived from the TAG Databook (July 2020) GDP Deflator.
- Costs were then discounted to 2010 in line with guidance provided in TAG unit A1.2 (July 2020).
- Finally, costs were converted to 2010 Market Prices using a factor of 1.19.

Table 3.12 beneath shows the costs for Package 2.

Table 3.12: Economic Case Scheme Cost Estimates

Description of Cost Type	Construction Cost (£)
Base Investment Cost	20,990,426
Base Cost with Real Cost Increases	23,481,939
Risk Adjusted Base Cost with Real Cost Increases	25,554,912
Risk Adjusted Base Cost with Real Cost Increases and Optimism Bias	37,870,287
Rebased to 2021 Price Year	31,847,892
Discounted to 2010 Prices	20,035,214
Adjusted to Market Prices	23,841,904

### Present Value Benefits

The transport benefits of the scheme were assessed using the SATURN based PTM3 (built in v11.4.07H).

Full details relating to the calibration and validation of the model can be found in the Local Model Validation Report (LMVR), and details about the forecasting procedure can be found in the Forecasting Report.

Two core network scenarios were developed for the Economic Assessment, these were the Do Minimum (DM) and Do Something (DS) scenarios. The DM scenario represents future growth without highway intervention (without scheme), and the DS scenario includes the package of schemes within the model network (with scheme) with the same level of future traffic growth.

The difference between the DM and DS scenarios demonstrate the benefits of implementing the scheme. These benefits are measured using:

- Network assignment statistics
- Link flow changes
- Journey times
- Journey routing.

The Model output files were then entered into the Transport User Benefits Appraisal (TUBA, 1.9.13) software to undertake the Economic Assessment and calculate a BCR.



TUBA produces figures for a number of benefits, including Greenhouse Gases, User benefits, and Indirect Taxation. Indirect taxation often provides a negative benefit figure. This is a result of the reduced fuel being purchased as journeys become more efficient with the improvements. This in turn reduces the money the government receives in taxes.

This identifies the Present Value Benefits (PVB) to be £37,418,000. A breakdown of these benefits is shown in Table 3.12 beneath.

### Benefit Cost Ratio

The Benefit Cost Ratio (BCR) is the ratio of PVB to PVC. Table 3.13 beneath summarises the BCR for the preferred scheme as calculated using TUBA.

Table 3.13: Package 2 AMCB Table

Value (£'000s) 2010 prices, benefits discounted to 2010	
Benefits	
Greenhouse Gases	479
Consumer Users (Commuting)	8,892
Consumer Users (Other)	16,362
Business Users/Providers	12,598
Indirect Taxes	-913
<b>Present Value of Benefits (PVB)</b>	<b>37,418</b>
Costs	
Broad Transport Budget	23,776
<b>Present Value of Costs (PVC)</b>	<b>23,776</b>
Net Benefit / BCR Impact	
<b>Net Present Value (NPV)</b>	<b>13,642</b>
<b>Benefit/Cost Ratio (BCR)</b>	<b>1.574</b>

The DfT uses the following thresholds to determine the Value for Money statement associated with a BCR:

- Low Value for Money if BCR = 1.0 to 1.5
- Medium Value for Money if BCR = 1.5 to 2.0
- High Value for Money if BCR = 2.0 to 4.0
- Very High Value for Money if BCR > 4.0.

Based on transport user benefits alone, this scheme will provide **Medium Value for Money**.

The Economic Efficiency of the Transport System (TEE) table can be found in Appendix C.

## Spread of Benefits

The TUBA results include a detailed breakdown of the scheme benefits including (but not limited to) benefits by time saving and benefits by distance. These benefits are broken down by vehicle type and journey purpose to better understand how different user types will benefit from the scheme. Table 3.14 below shows the time benefits saving by vehicle type.

**Table 3.14: Package 2 Non-Monetised Time Benefits by Time Saving**

Non Monetised Benefits by Time Saving							
Time Benefits (thousands of person hrs) by size of time saving							
Vehicle	Purpose	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	0	-1	-640	1208	285	0
Car	Commuting	0	-3	-1393	2870	426	0
Car	Other	0	-11	-9670	14447	2529	0
LGV Freight		0	-18	-927	1473	567	0
OGV1		-2	-11	-465	467	210	10

Table 3.14 shows that car users experience the greatest time benefit from the implementation of the scheme. Within the car users, the 'other' journey purpose experiences the greatest impact, which is correlates with the composition of trip types across the model.

Table 3.15 below shows the journey time benefits by distance.

**Table 3.15: Package 2 Non-Monetised Time Benefits by Distance**

Non Monetised Benefits by Distance									
Time Benefits (thousands of person hrs) by size of time saving									
Vehicle	Purpose	< 1 km	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	> 200 kms
Car	Business	4	333	384	113	33	-15	2	-1
Car	Commuting	14	510	841	405	144	-31	13	2
Car	Other	40	5100	2452	104	-54	-316	-6	-26
LGV Freight		2	215	437	287	120	43	0	-9
OGV1		0	20	71	48	37	18	31	-15

The table shows that those making trips of between 1km - 5kms benefit most from the proposed package. As with the time savings, car users experience the greatest level of benefit, and these apply mostly to those who travel for 'other' purposes.

Table 3.16 below shows that the scheme benefits are greatest in the Inter-peak period than for the other peak period, which is to be expected as the Inter-peak applies to a much greater time span. The AM peak hour experiences greater benefits than the PM peak hour, but all time period experience high benefits overall.

Table 3.16: Package 2 User Benefits by Time Period

User Benefits and Changes in Revenues (£,000s)	
Time Period	User Time
AM	5,056
IP	27,766
PM	2,436

#### Low Growth Sensitivity Test – Package 2

The same Low Growth sensitivity test has been undertaken on Package 2 and has utilised the same reduced demand matrices that was tested against the Package 1 network.

Table 3.17 shows the AMCB for the Package 2 Low Growth Scenario. The BCR reduces from 1.574 to 0.861 in the Low Growth Scenario for Package 2.

Table 3.17: Package 2 Low Growth AMCB Table

Value (£'000s) 2010 prices, benefits discounted to 2010	
Benefits	
Greenhouse Gases	319
Consumer Users (Commuting)	4,740
Consumer Users (Other)	9,398
Business Users/Providers	6,589
Indirect Taxes	-587
<b>Present Value of Benefits (PVB)</b>	<b>20,459</b>
Costs	
Broad Transport Budget	23,776
<b>Present Value of Costs (PVC)</b>	<b>23,776</b>
Net Benefit / BCR Impact	
<b>Net Present Value (NPV)</b>	<b>-3,317</b>
<b>Benefit / Cost Ratio (BCR)</b>	<b>0.861</b>

The impact of a Low Growth scenario on Package 2 is more pronounced than on Package 1 due to the higher costs associated with it. Package 2 would return a BCR of 0.861 which is Poor Value for Money. However, this is not considered to be conclusive at this stage of the package development, as the modelling undertaken does not yet include all of the transport benefits (such as those associated with Junction 37), and the cost estimates have been produced without detailed design information, and therefore include high levels of risk allowance and Optimism Bias, particularly associated with the structures elements of the package.

Mode Shift

The Economic Appraisal has not included any benefits arising from modal shift. The scheme is predominantly a highway improvements scheme with the objective of relieving peak-time congestion and delay at Junction 5 on the A1139 Frank Perkins Parkway, and other local routes within the study area. There are walking and cycling improvements proposed as part of the improvement scheme, however these are not expected to stimulate significant modal shift.

Figure 3.18 shows the v/c ratios for the Study Area in the AM and PM peak hour for Package 1. Figure 3.19 show the v/c ratios for the Study Area in the AM and PM peak hour for Package 2

Table 3.18: 2036 Package 1 V / C Ratios for Study Area (AM Peak Hour left, PM Peak Hour right)

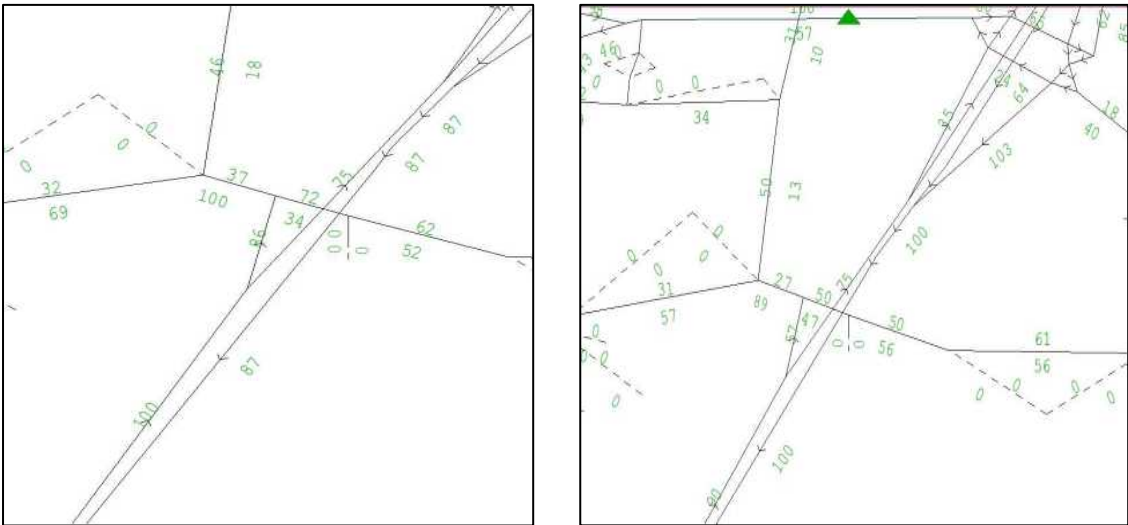
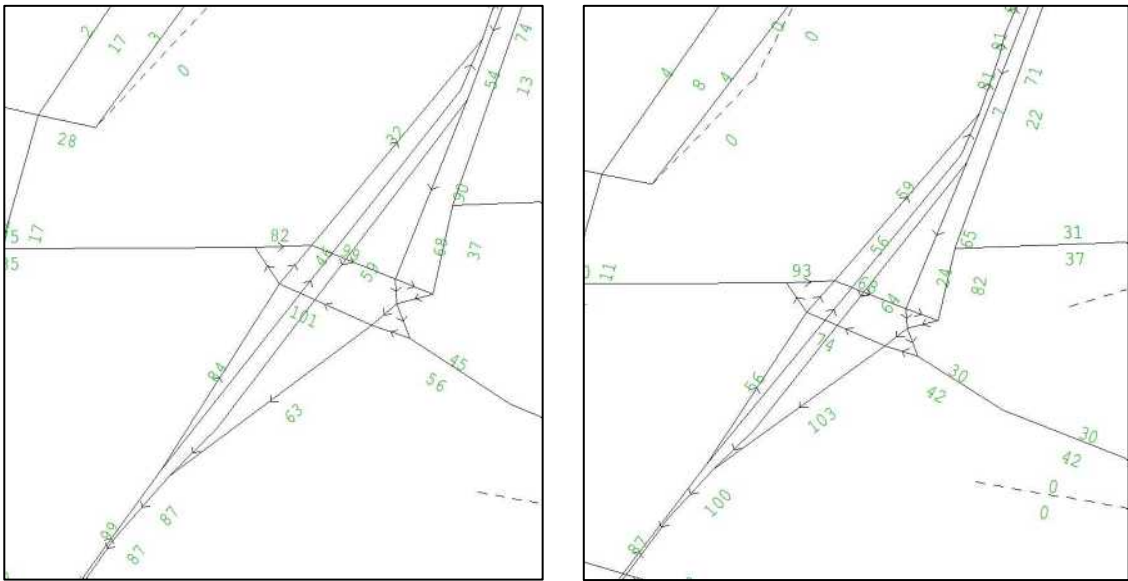


Table 3.19: 2036 Package 2 V / C Ratios for Study Area (AM Peak Hour left, PM Peak Hour right)



As demonstrated in the Figures above, in 2036 the A1139 Frank Perkins Parkway to the south of Junction 5 is operating at capacity in 2036, with V / C ratios in both the AM and PM peak hour close to, or at 100%. Therefore, it is not expected that the scheme will encourage significant modal shift to car users due to wider network constraints.

### 3.6. Additional Appraisal Elements

The scheme appraisal has focussed on the impacts directly impacting on the economy or those which can be monetised. An initial qualitative analysis has been undertaken for environmental, social and distributional impacts of a scheme, and input into an Appraisal Summary Table (AST) in Appendix D.

The additional appraisal elements are detailed in Table 3.16 below, along with the proposed assessment approach for the next stage of the Business Case process.

Table 3.20: Additional Appraisal Elements

Element	Approach to Assessment at OBC	Package 1	Package 2
Road Safety (Social)	Safe design and qualitative assessment	Impact not expected to be significant in terms of speeds, flows of types of traffic, an assessment will be conducted.	Impact not expected to be significant in terms of speeds, flows of types of traffic, an assessment will be conducted.
Noise (Environmental)	Quantitative assessment made using the SATURN model outputs	May be an impact on Noise, therefore an assessment will be undertaken.	May be an impact on Noise, therefore an assessment will be undertaken.
Air Quality (Environmental)		Scheme not expected to impact significantly upon air quality, assessment will be undertaken.	Scheme not expected to impact significantly upon air quality, assessment will be undertaken.
Landscape, Townscape, Historic Environment, Ecology and Water Environment	Qualitative assessment to be undertaken at OBC stage to inform the design process	The new off-slip will require removal of a row of 10 Corsican Elms which are an important community related asset. Loss of green space at Bishop's Road Recreation Area.	No significant impacts expected, Boongate dualling will be delivered on existing highway verge,
Physical Activity (Social)	Qualitative	Improvements to pedestrians and cycle infrastructure will form part of the scheme	Improvements to pedestrians and cycle infrastructure will form part of the scheme.
Access/Severance	Qualitative	Improvements to pedestrian and cycle infrastructure could ease severance.	Improvements to pedestrian and cycle infrastructure could ease severance

The Economic Assessment undertaken on both packages showed that Package 2 had a lower BCR than Package 1. Package 2 does provide greater benefits however the costs associated with the delivery of the improvements reduced the BCR.



The Environmental and Social Assessment of Package 1 and Package 2 show that there are some key environmental factors that require consideration when determining a preferred option. The new northbound off-slip in Package 1 will require the removal of ten well-established Corsican Elm trees, which have a high community asset value. There will also be a loss of green space at Bishop's Road Recreation Area. The improvements identified in Package 2 upgrade the existing infrastructure within the Study Area. Boongate dualling will utilise land that is currently highway verge and was earmarked for the dualling of Boongate since the New Town phase of development.

A preferred Package cannot be determined at this stage. Further assessment of the Packages using an operational model and design work is required to understand the benefits each package can provide as well as their wider impact on the environment. In addition, a greater level of certainty around further growth proposals for the Embankment Area is needed to inform this next phase of work.

### 3.7. Key Risks, Sensitivities and Uncertainties

The scheme is considered to be low risk in construction terms, especially since the majority of the required land is within ownership of Peterborough City Council. Improvements at the Boongate / Fengate junction will require a small portion of private land. Early engagement with the landowner once the design is confirmed will be essential in mitigating any risk associated with acquiring this. It should be noted that improvements at this junction are not dependent on the land acquisition, and a scheme can still be delivered if the land cannot be acquired, however this will have reduced benefit.

As the benefits of the scheme largely relate to reducing delay to existing and future traffic, a growth in future traffic levels beneath that anticipated is considered to be one of the key risks to the scheme.

The COVID-19 pandemic has caused a significant drop in highway usage as part of the national lockdown, and although this is slowly returning, no-one knows what overall impact this will have on future travel. Traffic levels within the Study Area will continue to be monitored as the package of schemes are developed, and full sensitivity testing on the impact of COVID-19 on transport demand will be undertaken at the next Business Case stage.

As part of the scheme design and costing process that will form part of further design, a Risk Register and a Quantified Risk Assessment (QRA) will be produced, and an updated risk allowance incorporated into the scheme costs used within the next Economic Assessment (whilst the Risk Allowance used within this assessment is considered to be robust for the level of detail available).

### 3.8. Value for Money Statement

#### VFM Category

Based on this initial assessment, it is considered reasonable that Package 1 will achieve **Very High Value for Money** and Package 2 will achieve **Medium Value for Money**.

The Package BCRs are expected to increase, and the performance to further improve once the Operational Modelling has been undertaken and wider benefits have been captured.

## 4. The Financial Case

### Introduction

This section presents the Financial Case for both packages being considered by the University Access Study. It concentrates on the affordability of the proposals and the funding arrangements.

Each of the steps taken to produce the cost estimates are explained beneath. The estimates have been costed based on initial design information, and include a risk allowance with COVID-19 related construction risks.

The scheme costs for both packages have been prepared using the parameters shown in Table 4.1 beneath.

Table 4.1: Scheme Costing Parameters

Input		
Years	DfT Base Year	2010
	Scheme Cost Estimate Year	2020
	Present Year (Assessment Year)	2020
	Scheme Start Year	2021
	Scheme Year of Opening	2023
	Analysis Period (Years)	60
Economic Values	Market Price Factor (Indirect Taxation)	1.19
	Normal Inflation Rate	1.025
	Construction Inflation Rate	1.05

The initial scheme cost estimates for both packages are presented beneath, and a breakdown of the costs by package are provided below.

#### 4.1. Scheme Costing: Package 1

The different Financial Case cost estimates for Package 1 are summarised in Table 4.2 beneath.

Table 4.2: Financial Case Scheme Cost Estimates - Package 1

Description of Cost Type	Cost (£)
Base Investment Cost	5,845,726
Risk Adjusted Base Cost	6,404,228
Risk Adjusted Base Cost with Construction Industry Inflation ( <b>Outturn Cost</b> )	<b>7,538,742</b>

##### Base Investment Cost

The Base Investment Cost is the capital cost required to construct the scheme in current year (2020) prices, without a risk allowance or inflation. This is the scheme cost estimate based on concept level designs.

Table 4.3 shows the Base Investment Cost for Package 1 broken down into Construction, Land, Design and Supervision costs (note that there are no 'Other' costs).

Table 4.3: Base Investment Cost (2020 Prices) – Package 1

Calendar Year	Construction Costs (£)	Land & Property Costs (£)	Preparation and Supervision Costs (£)	Other Costs	Total Base Investment Cost (£)
2021			569,869		569,869
2022			332,741		332,741
2023	1,398,130	100,000	280,398		1,778,528
2024	2,796,259		368,328		3,164,588
2025					
<b>Total</b>	<b>4,194,389</b>	<b>100,000</b>	<b>1,551,337</b>		<b>5,845,726</b>

The scheme Base Investment Cost for Package 1 in 2020 prices is £5,845,726. This includes £4,194,389 of Construction related costs and £1,551,337 of Design and Supervision costs (£998,844 Design and surveys / £552,492 Supervision). The Design costs include all necessary surveys and an allowance to undertake an Operational Assessment of the schemes and develop an Outline Business Case during the next stage of the project (and a future Full Business Case). The cost profile assumes construction will begin in September 2023.

The Base Investment Cost also includes £100,000 for the purchase of a small portion of land adjacent to the Highway Boundary at the Boongate / Fengate Junction. All of other land required is within the Council's ownership.

A breakdown of the package cost by scheme is provided in Table 4.4 beneath.

Table 4.4: Package 1 Costs by Scheme

Package 1	Scheme	Transport Planning	Site Surveys	Design		Construction	Land	Supervision	Total (No Risk)
				Preliminary Design	Detailed Design				
1.1	New A1139 NB Off-slip onto Bishops Road (Junction 4a)		£ 217,576	£ 163,182	£ 108,788	£ 2,719,699		£ 367,159	£ 3,576,405
1.2	Junction 38 Junction Improvements		£ 15,671	£ 11,754	£ 6,269	£ 195,893		£ 26,446	£ 256,032
1.3	Fengate / Boongate Junction Improvements		£ 18,853	£ 14,140	£ 9,426	£ 235,660	£ 100,000	£ 31,814	£ 409,893
1.4	Junction 5 Improvements		£ 9,013	£ 6,760	£ 4,506	£ 225,318		£ 30,418	£ 276,014
1.5	Junction 37 Improvements		£ 25,193	£ 18,894	£ 12,596	£ 314,908		£ 42,513	£ 414,104
1.6	Wellington Street Roundabout		£ 20,233	£ 15,175	£ 10,116	£ 252,910		£ 34,143	£ 332,577
1.8	Other Sustainable Transport Improvements		£ 20,000	£ 18,000	£ 12,000	£ 250,000		£ 20,000	£ 320,000
OBC	Further Study & Outline Business Case	£ 185,700	-	-	-	-		-	£ 185,700
FBC	Full Business Case	£ 75,000	-	-	-	-		-	£ 75,000
<b>Package 1 Total</b>		£ 260,700	£ 326,538	£ 247,904	£ 163,702	£ 4,194,389	£ 100,000	£ 552,492	£ 5,845,726

### Risk Adjusted Base Cost

The Risk Adjusted Base Cost includes a component for risk. A 10% risk allowance has been included within the cost estimate, which includes 5% for construction risk and 5% for COVID-19 related risk.

Table 4.5: Risk Adjusted Base Costs (2020 Prices) – Package 1

Calendar Year	Construction Costs (£)	Land & Property Costs (£)	Preparation and Supervision Costs (£)	Risk Allowance (£)	Risk Adjusted Base Cost (£)
2021			569,869		569,869
2022			332,741		332,741
2023	1,398,130	100,000	280,398	186,168	1,964,695
2024	2,796,259		368,328	372,335	3,536,923
2025					
<b>Total</b>	<b>4,194,389</b>	<b>100,000</b>	<b>1,551,337</b>	<b>558,503</b>	<b>6,404,228</b>

The addition of the risk allowance (£558,503) takes the Risk Adjusted Base Cost to £6,404,228.

### Inflated Risk Adjusted Cost (Outturn Cost)

The Inflated Risk Adjusted Cost, or Outturn Cost, is the Risk Adjusted Base Cost with construction industry inflation applied. An inflation of 5% per annum has been used based on the Office of National Statistics (ONS) Construction Output Price Indices (2019 / Q4) FOR 'New Work / Infrastructure'. As well as being derived from the Construction Output Price Indices, the inflation rate of 5% has been determined using knowledge of costs associated with recent schemes in Peterborough. Peterborough Highway Services works are measured using the BCIS Indices.

Inflation has been applied in line with the construction profile assumed within the scheme costing, and the cost of this is presented beneath in Table 4.6.

Table 4.6: Inflated Risk Adjusted Cost (2020 Prices) – Package 1

Calendar Year	Risk Adjusted Base Cost (£)	Cost of Inflation (£)	Total with Inflation (£)
2021	569,869		569,869
2022	332,741	28,493	361,235
2023	1,964,695	34,106	1,998,801
2024	3,536,923	309,685	3,846,608
2025		762,229	762,229
<b>Total</b>	<b>6,404,228</b>	<b>1,134,513</b>	<b>7,538,742</b>

The cost of inflation is £1,134,513 which brings Scheme Outturn Cost to £7,538,742. The Outturn Cost represents the amount required by Peterborough City Council to deliver the package of schemes.



## 4.2. Scheme Costing: Package 2

The Financial Case cost estimates for Package 2 are summarised in Table 4.7 beneath.

Table 4.7: Financial Case Scheme Cost Estimates – Package 2

Description of Cost Type	Cost (£)
Base Investment Cost	20,990,426
Risk Adjusted Base Cost	23,063,398
Risk Adjusted Base Cost with Construction Industry Inflation ( <b>Outturn Cost</b> )	<b>27,217,021</b>

### Base Investment Cost

Table 4.8 shows the Base Investment Cost broken down into Construction, Land, Design and Supervision costs (note that there are no 'Other' costs).

Table 4.8: Base Investment Cost (2020 Prices) – Package 2

Calendar Year	Construction Costs (Highways) (£)	Construction Costs (Structures) (£)	Land & Property Costs (£)	Preparation and Supervision Costs (£)	Total Base Investment Cost (£)
2021				1,821,317	1,821,317
2022				981,047	981,047
2023	2,754,115	2,488,986	100,000	952,288	6,295,389
2024	5,508,230	4,977,972		1,406,471	11,892,672
2025					
<b>Total</b>	<b>8,262,345</b>	<b>7,466,957</b>	<b>100,000</b>	<b>5,161,123</b>	<b>20,990,426</b>

The scheme Base Investment Cost for Package 2 in 2020 prices is £20,990,426. This includes £8,262,345 of Construction related costs and £5,161,123 of Design and Supervision costs. The Design costs include all necessary surveys and allowance to undertake an Operational Assessment of the schemes and develop an Outline Business Case during the next stage of the project (and a future Full Business Case). The cost profile assumes construction will begin in September 2023.

The Base Investment Cost also includes £100,000 for the purchase of a small portion of land adjacent to the Highway Boundary at the Boongate / Fengate Junction. All of other land required is within the Council's ownership.

A breakdown of the package cost by scheme is provided in Table 4.9 beneath.

Table 4.9: Package 2 Costs by Scheme

Package 2	Scheme	Transport Planning	Site Surveys	Design		Construction	Land	Supervision	Total (No Risk)
				Preliminary Design	Detailed Design				
2.1	Junction 5 Partial Signalisation		£ 48,403	£ 36,302	£ 24,201	£ 830,354		£ 112,098	£ 1,051,359
2.2	Fengate / Boongate Junction Improvements		£ 18,853	£ 14,140	£ 9,426	£ 235,660	£ 100,000	£ 31,814	£ 409,893
2.3	Boongate Dualling		£ 1,091,966	£ 818,975	£ 545,983	£ 13,649,577		£ 1,842,693	£ 17,949,193
2.4	Junction 38 Junction Improvements		£ 15,671	£ 11,754	£ 7,836	£ 195,893		£ 26,446	£ 257,599
2.5	Junction 37 Improvements		£ 25,193	£ 18,894	£ 12,596	£ 314,908		£ 42,513	£ 414,104
2.6	Wellington Street Roundabout		£ 20,233	£ 15,175	£ 10,116	£ 252,910		£ 34,143	£ 332,577
2.8	Other Sustainable Transport Improvements		£ 15,000	£ 18,000	£ 12,000	£ 250,000		£ 20,000	£ 315,000
OBC	Further Study & Outline Business Case	£ 185,700	-	-	-			-	£ 185,700
FBC	Full Business Case	£ 75,000	-	-	-	-		-	£ 75,000
<b>Package 2 Total</b>		£ 260,700	£ 1,235,319	£ 933,239	£ 622,159	£ 15,729,303	£ 100,000	£ 2,109,706	£ 20,990,426

### Risk Adjusted Base Cost

The Risk Adjusted Base Cost includes a component for risk. A 10% risk allowance has been included within the cost estimate, which includes 5% for construction risk and 5% for COVID-19 related risk.

**Table 4.10: Risk Adjusted Base Costs (2020 Prices) – Package 2**

Calendar Year	Construction Costs (Highways) (£)	Preparation and Supervision Costs (£)	Risk Allowance (£)	Risk Adjusted Base Cost (£)
2021		1,821,317		<b>1,821,317</b>
2022		981,047		<b>981,047</b>
2023	2,754,115	952,288	690,991	<b>6,986,380</b>
2024	5,508,230	1,406,471	1,381,982	<b>13,274,654</b>
2025				
<b>Total</b>	<b>8,262,345</b>	<b>5,161,123</b>	<b>2,072,973</b>	<b>23,063,398</b>

The addition of the risk allowance (£2,072,973) takes the Risk Adjusted Base Cost to £23,063,398.

### Inflated Risk Adjusted Cost (Outturn Cost)

The Inflated Risk Adjusted Cost, or Outturn Cost, is the Risk Adjusted Base Cost with construction industry inflation applied. An inflation rate of 5% per annum has been used based on the Office for National Statistics (ONS) Construction Output Price Indices<sup>12</sup> (2019 / Q4) for 'New Work / Infrastructure. Inflation has been applied in line with the construction profile assumed within the scheme costing, and the cost of this is presented beneath in Table 4.11.

**Table 4.11: Inflated Risk Adjusted Cost (2020 Prices) – Package 2**

Calendar Year	Risk Adjusted Base Cost (£)	Cost of Inflation (£)	Total with Inflation (£)
2021	1,821,317		1,821,317
2022	981,047	91,066	1,072,113
2023	6,986,380	100,557	7,086,938
2024	13,274,654	1,101,228	14,375,882
2025		2,860,771	2,860,771
<b>Total</b>	<b>23,063,398</b>	<b>4,153,622</b>	<b>27,217,021</b>

The cost of inflation is £4,153,622, which brings the Scheme Outturn Cost to £27,217,021. The Outturn Cost represents the amount required by Peterborough City Council to deliver this package of schemes.

<sup>12</sup> <https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/datasets/interimconstructionoutputpriceindices>

### Further Refinement

The scheme cost will be re-evaluated based on more mature design information, including Site Surveys, Preliminary Designs and a Quantified Risk Assessment, as the preferred scheme is carried forward to the Outline Business Case. The scheme costs will then be used to identify and secure funding, and to undertake further economic assessment using the Transport User Benefit Appraisal package (TUBA) to re-determine value for money.

Future maintenance costs / works associated with the schemes will also be considered and added to the maintenance inventory and funded from the Council's maintenance budgets. Beyond the provision of either a new slip road (Package 1) or dualling Boongate (Package 2), it is not anticipated that the provision of new or upgraded assets will significantly impact upon future maintenance liabilities. Maintenance costs will be included within the Economic Assessment as part of the Outline Business Case once the full suite of benefits (such as those from Junction 37) have been incorporated into the assessment.

## 4.3. Budgets and Funding Cover

### Availability of Funds

It is anticipated that the full scheme Outturn Cost will be jointly funded by the CPCA from the Single Investment Fund, the DfT's Major Road Network (MRN) Fund and a S106 Developer Contribution secured from the Red Brick Farm Site (£120,000 towards the Boongate / Fengate Junction). Note that the developer contribution has not been included within the Financial or Economic Assessment undertaken to date and will ultimately reduce the total requirement from the CPCA Single Investment Fund.

The Cambridgeshire and Peterborough Combined Authority will contribute to the development and construction of the Fengate Phase 2 (University Access) project which is set out in the Medium-Term Financial plan (MTFP). The MTFP has a total allocation of £2.1m over a three-year period. Further funding is being sought from the Department for Transport (DfT) Major Road Network (MRN) Fund to complete the design and business case work, and ultimately for construction. An application was submitted at the pre SOBC stage, this application will be updated with the latest information from the SOBC to inform the application and seek funding. The requirement to seek funding from DfT is a key constraint to the project.

### Funding Constraints

Completion of the design and business case work, as well as scheme construction, will ultimately be dependent on the availability of funding from the DfT's MRN fund.

The £120,000 developer contribution secured from the Red Brick Farm Site can only be used for improvements to the Boongate / Fengate junction.

### Completion of the Business Case

Subject to acceptance of the SOBC, The CPCA will move to Outline Business Case (including Operation Modelling), site surveys and Preliminary Design work.

Costs for the Preliminary Design and Outline Business Case tasks are included within the scheme costs reported within this chapter and the Value for Money assessment undertaken within the Economic Case. However, funding to progress the Preliminary Design and Outline Business Case needs to be secured to enable this work to progress.

The CPCA request that the funds required to undertake the next phase of work are split into two phases due to the scale of costs associated with the site surveys and Preliminary Designs for both packages. The first phase will consist of the Operational Modelling and further design work based on Statutory Undertakers information. This first phase would be used to identify a Preferred Package along with Public Consultation, with the decision approved by the DfT before releasing the funds required to undertake the second phase of work which would consist of Site Surveys and Preliminary Design on the Preferred Package of Schemes.

The CPCA therefore request that £157,350 is released to enable the first phase of the work described above to be undertaken. This work is provisionally programmed to be undertaken between April 2021 and October 2021, with a view to an Outline Business being submitted in February 2023, and construction of the preferred package starting in April 2024.

## 5. The Commercial Case

### 5.1. Introduction

The Commercial Case demonstrates that both packages of schemes can be reliably procured and implemented through existing channels, whilst ensuring value for money in delivery of the scheme.

### 5.2. Output Based Specification

The University Access Study Option Assessment Report (OAR) details the work undertaken to develop multiple improvement options at this location, and the modelling undertaken to identify two viable packages of schemes. A preferred Package cannot be determined until operational modelling and further design work have been undertaken, and there is a greater level of certainty around further growth proposals for the Embankment Area.

The OAR discusses the process through which the two packages of schemes have been identified and assessed.

Package 1 will include the following outputs.



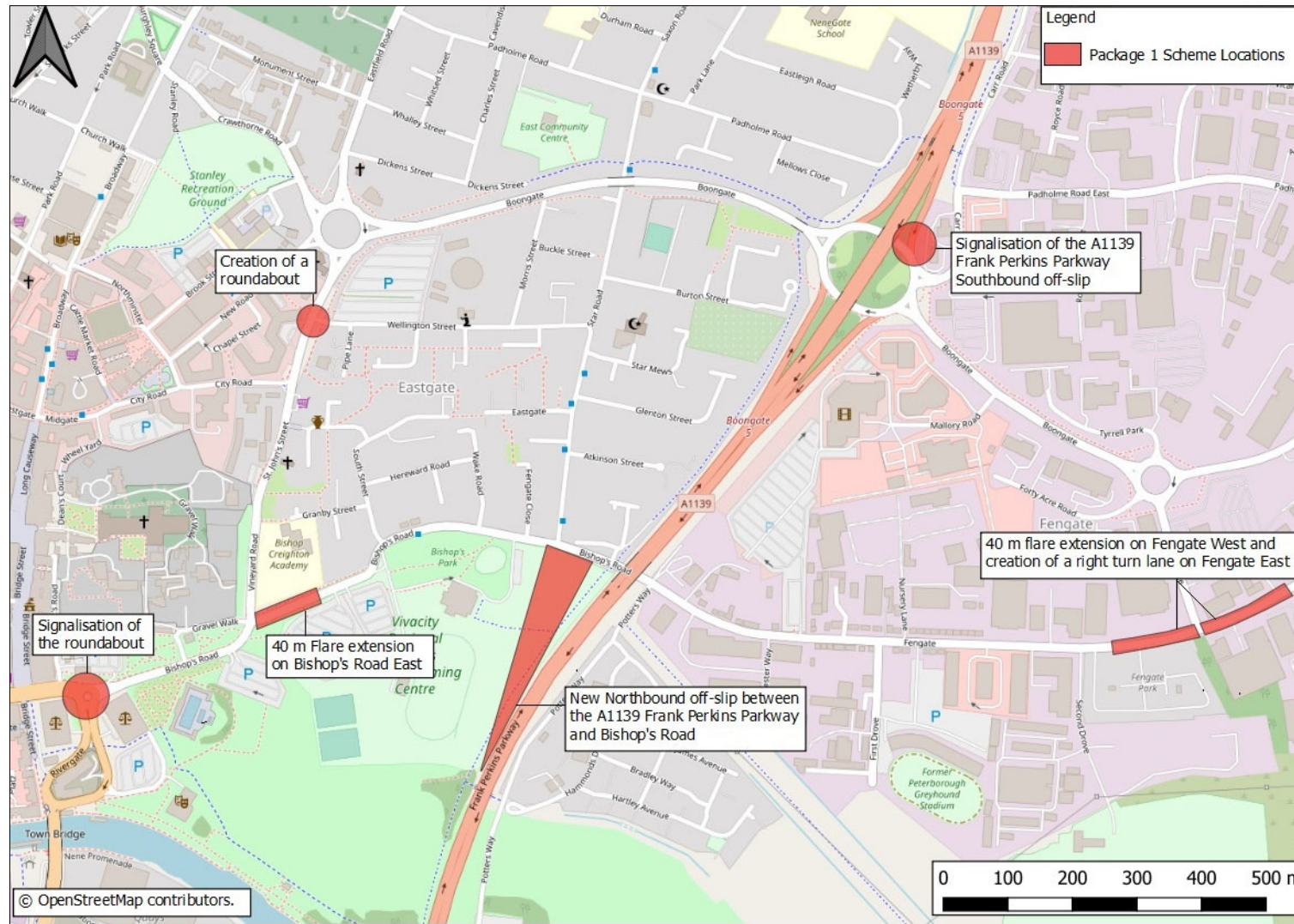


Figure 5.1: Package 1 Schemes

Package 2 will consist of the following outputs.

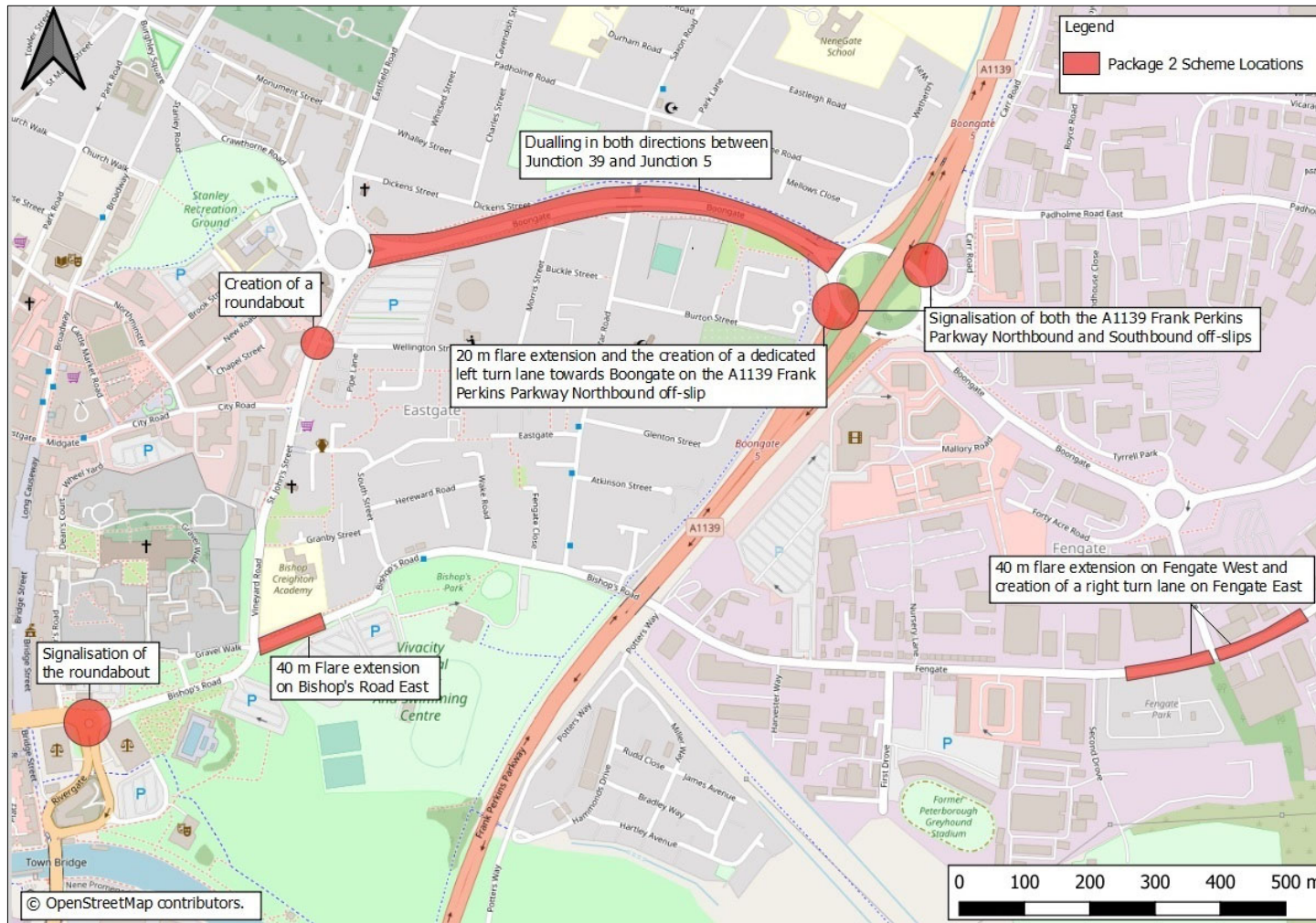


Figure 5.2: Package 2 Schemes

Both Package 1 and Package 2 meet all of the primary scheme objectives outlined in the Strategic Case. Details of how the scheme will be measured against these objectives are discussed within the Management Case.

### 5.3 Procurement Strategy

All phases of the scheme, including Design, Construction and Site Supervision will be delivered by Peterborough Highway Services (PHS).

PHS is a ten-year NEC3 Term Service Contract between Peterborough City Council and Skanska, with responsibility for improving and maintaining Peterborough's highway network. The collaboration began in 2013 and runs to 2023, with the possibility of a further ten-year extension.

The contract is built upon a collaborative and multi-disciplined team capable of developing schemes from policy concept right through to design and construction, and then maintaining them.

#### Market Maturity

PHS has successfully developed and delivered multiple highway schemes around Peterborough since the beginning of the contract in 2013, including several schemes on behalf of the CPCA. PHS has been responsible for all planning and design work undertaken on the University Access Study to date. All skills and competencies to deliver this scheme are available within the PHS contract.

To ensure that the procurement remains commercially competitive and offers value for money, all subcontract packages will be subject to competitive tendering.

#### Procurement Experience

The scheme will be delivered by Peterborough Highway Services, using sub-contractors to assist with the delivery of the scheme.

A pool of pre-qualified subcontractors for the provision of key work streams will be selected based on a considered selection criterion including:

- Technical Competence
- Financial Health
- Robustness of HSEQ Management and Risk Management Systems
- Previous Performance
- Ethical Standards
- Collaborative Behaviours
- Commitment to Inclusion
- Diversity and Equality
- Commitment to Community Investment and Social Value.



These providers / disciplines are regularly reviewed, including the undertaking of joint KPI performance reviews, to ensure that PHS has the right supply chain in place to provide healthy competition and delivery resilience for our forward pipeline of work.

For larger projects, individual packages of work are competitively tendered, and quotations are obtained from a minimum of 3 subcontractors. These quotations are then subjected to a structured tender adjudication with a balanced assessment including, but not limited to, cost, programme, quality, experience and performance to inform selection.

Subcontracts are let on a NEC Framework contract and individual packages of work awarded under Task Orders. All effort will be made to avoid any sub-subcontracting of works. In any case, the use of sub-subcontractors must be approved prior to their appointment.

This process has been used on a number of major scheme projects over recent years and has enabled major schemes to be delivered successfully and to a high standard in Peterborough.

#### 5.4 Risk Allocation and Transfer

Because the PHS contract is already established there is limited opportunity to modify the allocation of risk, however the contract does include inherent features that encourage effective risk management and mitigation, such as:

- Each party is required to notify each other of any matter which could affect the cost, completion, progress or quality of the project through Early Warning Notices. This is to promote early intervention which could reduce the impact of any potential risk
- In the case of Option C (Target Price) both parties are incentivised to reduced cost through the pain / gain mechanism.

The above will also be supplemented with good project management practices during the delivery of the scheme. Both parties will maintain a shared Risk Register, which will be reviewed regularly at project progress meetings. Further details on the management of risk are provided in the Management Case.

Detail about the allocation of project risk between the CPCA and Peterborough City Council, and the responsibilities for managing this, can be found within Chapter 6 of the CPCA's Assurance Framework.

## 6. The Management Case

### 6.1. Introduction

The Management Case explains how Peterborough City Council will successfully manage the delivery of the proposed scheme and achieve the expected outcomes.

### 6.2. Evidence of Similar Projects

Peterborough has a long history of significant growth spanning back to its designation as a New Town in 1967, and consequently the City is used to managing and delivering large highway infrastructure projects.

The Council, through PHS, has completed the following highway improvement schemes in recent years. Both of these schemes are located on the Parkway Network at strategically sensitive location, and demonstrate PHS' ability to successfully manage and deliver highway scheme of this scale.

#### Junction 20 Improvement Scheme (A47 Soke Parkway / A15 Paston Parkway) - £5.7m

This scheme was constructed between summer 2016 and spring 2017 and involved fully signalling a grade separated roundabout and adding significant capacity through the creation of additional lanes on the approaches and the circulatory of the roundabout. The scheme was required to relieve congestion and to enable nearby housing growth.

Since completion, the scheme has met its objectives and reduced congestion and improved journey times at a crucial section of the network. It has also provided additional network capacity, enabling the initial phase of development at Paston Reserve to be progressed, which will ultimately include 945 homes and a secondary school.

Junction 20 is a major interchange on Peterborough's network, located approximately 500 metres to the west of the A16, and at the time of construction up to 4,500 vehicles an hour passed through it. With such a high traffic demand, the careful planning and implementation of the traffic management required to construct the scheme was crucial. Close collaboration between all delivery partners meant that this was achieved with limited disruption to the highway network.

The Junction 20 scheme was completed on time and within the £5.7m budget. Funding for the scheme was secured from the Greater Cambridgeshire and Greater Peterborough Local Enterprise Partnership.



Figure 6.1: Junction 20 Improvement (Post Scheme)

#### Junction 17 – Junction 2 Improvement Scheme (A1139 Fletton Parkway) - £18m

This scheme was constructed between spring 2014 and summer 2015 and consisted of the widening of the A1139 Fletton Parkway from two to three lanes between the A1 (M) and Junction 2 in Peterborough to provide significant and critically needed capacity improvements. The total cost of the scheme was £18 million, funded through the Greater Cambridgeshire and Greater Peterborough Local Enterprise Partnership, Developer Funding and Council Capital Funding.

The scheme successfully delivered a major upgrade to Peterborough's Parkway network. Despite extensive ground investigations during the design phase, abnormally high levels of soil contamination were discovered during construction throughout the site, and significant volumes of soil had to be sent for specialist treatment and disposal. However, through careful management and collaborative working amongst all partners, there was a minimal impact on the scheme delivery programme, and additional funding was provided by the DfT due to the severity of the contamination which had not been detected despite all of the industry standard Waste and Contamination (WAC) tests being undertaken as prescribed.





Figure 6.2: Junction 17 (A1M) Improvement (Post Scheme)

### 6.3. Programme / Project Dependencies

The scheme programme will need to consider the following key dependencies:

- **Embankment Area Development** – the packages being considered are intended to accommodate the traffic growth generated by the developments at the Embankment Area, including the University of Peterborough which is expected to occur by 2036. The business case and scheme programme will need to adjust if the development programme changes, or further growth is confirmed within the area.
- **Programme Constraints** – the construction programme will need to carefully consider any other infrastructure works that may be underway on the highway network during the same period. The programme will be planned to avoid works that may compound the disruption caused to road users as a result of the package of measures, although this will be limited through the careful planning of traffic management arrangements
- **Construction Disruption** – The Council have significant recent experience of undertaking maintenance and delivering improvements on its highway network, particularly on strategic routes, and is proficient in mitigating the impact of this.
- **Utility Diversions** – unexpected utility diversions have the potential to cause significant programme delays and cost increases. Full Statutory Undertaker (STATS) searches will be undertaken as part of the Preliminary Design work during the next phase of the scheme development.



## 6.4. Governance, Organisational Structures and Roles

The CPCA are the organisation ultimately responsible for the delivery of the University Access Study schemes. The CPCA will engage with the DfT on all aspects of the project.

Delivery of the scheme will be managed by a Project Team led by a Peterborough City Council Project Manager and consisting of all the key project delivery partners. The Project Team will be responsible for the daily running of the project, coordinating with all key stakeholders, and managing the delivery programme.

A joint CPCA / Peterborough City Council Project Board will oversee the continued development and delivery of the scheme by the Project Team, and to make key decisions relating to the delivery of the project. The Project Board will be supported by technical specialists, and key stakeholders will be invited to attend as necessary.

### Project Management Team

The Project Management Team will report to the Project Board, and ultimately to the CPCA Board.

The Project Team will be responsible for delivery, and the day-to-day management of the consultants and contractors. They will co-ordinate inputs from technical advisors responsible for the delivery of key work streams within an agreed programme, including:

- Stakeholder Engagement
- Design Development
- Transport Modelling
- Environmental Assessment
- Business Case Development
- Early Contractor Involvement (ECI) and Scheme delivery.

The key roles and lines of accountability for the development and delivery of the scheme are shown beneath in Figure 6.3.

The project team has successfully developed and delivered multiple highway schemes around Peterborough since the beginning of the contract in 2013, including several CPCA schemes. The Major Schemes Project Director has significant experience at delivering major projects across the UK. The Peterborough City Council Senior Engineer (Highway Infrastructure) has over 20 years' experience of designing and managing the delivery of major highway improvements across Peterborough.

PHS has been responsible for all planning and design work undertaken on the University Access Scheme to date. All skills and competencies to deliver this scheme are available within the local PHS contract.

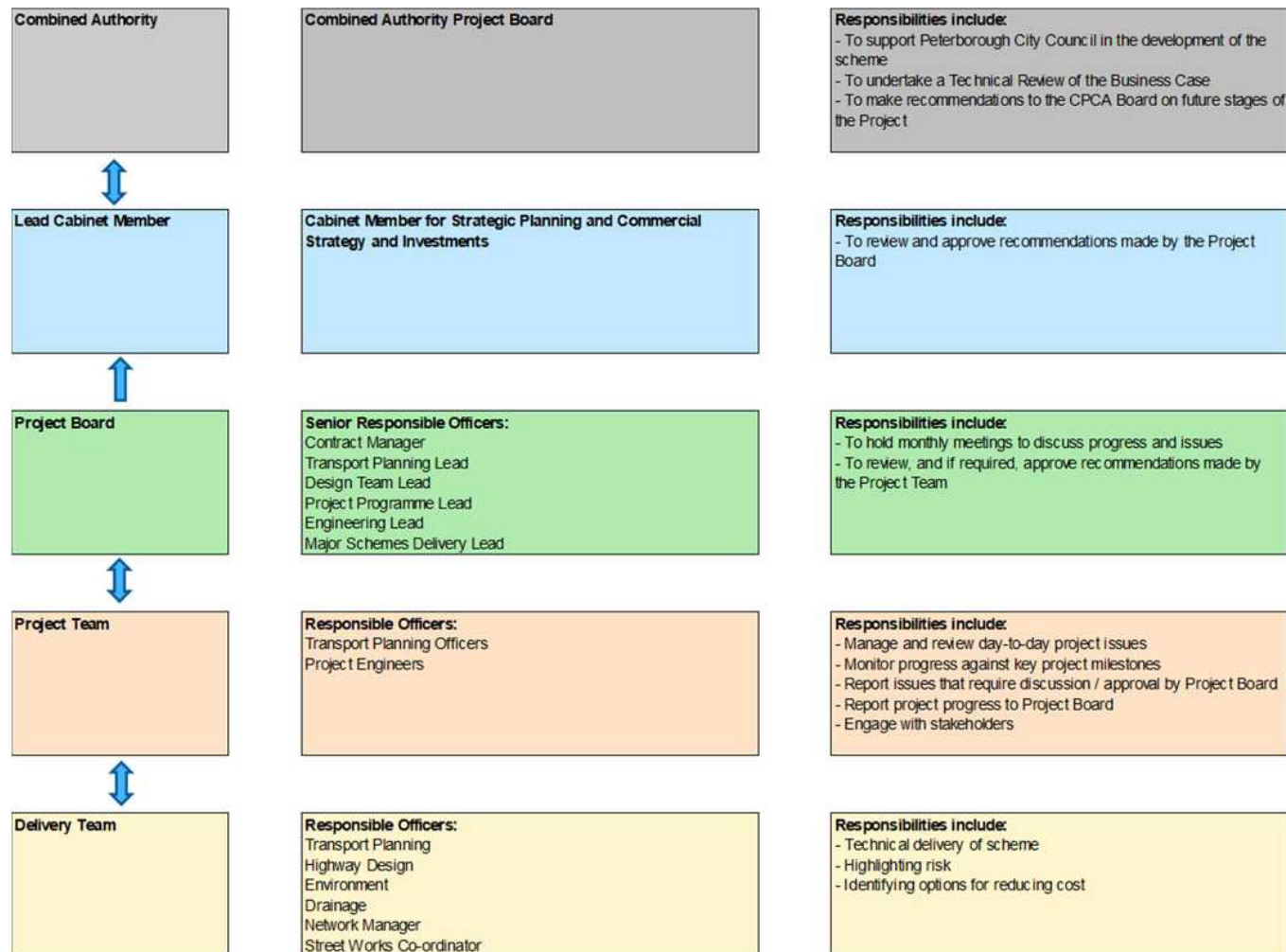


Figure 6.3: Key Project Roles and Responsibilities

## 6.5. Programme / Project Reporting

The Project Manager will report how the project is performing against the project objectives / key milestones. This will be completed using established finance and programme management tools such as Verto and reported on a regular basis to the Project Board.

Every month the Project Manager will also submit a highlight report to the CPCA recording what progress has been made and whether there are any new risks that could impact the scheme. Financial progress will be reported to the PHS Dashboard, which monitors the progress of work delivered through the PHS contract, and approval for any key decisions is made by the Project Board.

Regular Project Progress Meetings will be held throughout the duration of the scheme to allow key staff to discuss important issues that could affect the delivery of the scheme.

Delivery of the scheme through the PHS Framework contract ensures that all stages of work are conducted in-house, ensuring a smooth transition of information and communication between the different delivery teams.

## 6.6. Project Plan: Reporting and Timescales

Key project milestones for progressing to scheme delivery are outlined in Table 6.1.

Table 6.1: Key Project Milestones

Timescale	Milestone Activity
January 2020	Strategic Outline Business Case and Option Assessment Report Submitted to CPCA and DfT
January 2021 - March 2021	Strategic Outline Business Case reviewed by DfT and approval sought from CPCA Board to release funding to undertake Phase 1 of the Outline Business case
April 2021 – October 2021	Phase 1 of Outline Business Case (Further detailed study, including microsimulation modelling to determine preferred package)
November 2021 – December 2021	Phase 1 of Outline Business Case reviewed by DfT and approval sought for the release of funding to undertake Phase 2 of Outline Business Case and Preliminary Design
January 2022 – February 2023	Outline Business Case produced and Preliminary Design undertaken
February 2023	Outline Business Case and Preliminary Design Submitted to DfT
March 2023	Outline Business Case reviewed by DfT and approval sought from for the release of funding to undertake Detailed Design and produce a Full Business Case
April 2023 – February 2024	Detailed Design undertaken and Full Business Case produced
February 2024	Full Business Case and Detailed Design Submitted to DfT
March 2024	Full Business Case reviewed by DfT and approval sought for the release of funding to undertake construction
April 2024 onwards	Commencement of construction of scheme

## 6.7. Assurance and Approvals Plan

The CPCA will manage the project in line with their existing assurance and approvals process. The CPCA Programme Manager, working closely with the Peterborough City Council Project Manager, will be responsible for the daily running of the project, and any approvals required will be provided by the Project Board.

The Cambridgeshire and Peterborough Combined Authority Assurance Framework sets out the fundamental principles in relation to the use and administration of the Cambridgeshire and Peterborough Investment and outlines a culture underpinned by processes, practices and procedures. The Assurance Framework sits alongside a number of other Cambridgeshire and Peterborough Combined Authority documents including the Constitution and Devolution Deal.

As part of the CPCA Assurance Framework, an Independent Technical Evaluation (ITE) of the Business Case will be undertaken at each stage of the project. The ITE will be undertaken by a third-party organisation and will assess the Business Case (and supporting information) against the CPCA's Technical Assurance Framework to make a recommendation to the CPCA Transport Board as to whether each phase of the Business Case is ready for submission to the DfT for review.

Further to the above, the Combined Authority has developed the 10 Point Guide which outlines project management governance requirements which should be followed throughout the life cycle of the project. It details the requirements at project initiation including, establishing a Project Board with the Combined Authority and delivery partners. The purpose of the Project Board is to provide oversight to the project, ensure appropriate governance, risk management and to provide assurance in accordance with the scope, budget and programme.

The Project board is to be held monthly and should be attended by the Combined Authority's head of Transport and Transport Programme Manager alongside Peterborough City Council's Project manager and by Group Manager for Highways and Transport. The project board should also establish a RACI chart, a copy of the RACI template is in the Combined Authority's 10 Point Guide.

## 6.8. Communications and Stakeholder Management

Communication and Stakeholder engagement will consist of:

- Providing regular updates on delivery progress and key activities for the local community, businesses, and key stakeholders
- Engaging with the local community, businesses, and key stakeholders regarding delivery of the schemes. This is to ensure local needs are taken into account throughout the duration of the project
- Ensuring information is shared using appropriate methods of communication to all sectors of the community, business, and key stakeholders.

### Project Liaison Officer

A designated Project Liaison Officer (PLO) will be assigned to the scheme throughout the public consultation period and during construction and act as a single point of contact for outgoing and incoming communication. The PLO will be attached to the scheme delivery team and their responsibilities will include issuing progress updates via email and social media in the lead up to, and during construction, and coordinating responses to members of the public and key stakeholders when queries are raised.

### Stakeholder Consultation

Stakeholder consultation will be undertaken by the Project Team as part of the Outline Business Case and Preliminary Design. This consultation will enable feedback from key stakeholders to be taken into consideration ahead of the Detailed Design stage.

The key stakeholders identified for this consultation event include:

- Cambridgeshire and Peterborough Combined Authority (CPCA)
- Peterborough City Council (The Council)
- University of Peterborough Promoters
- Other developers with interests in the Embankment Area
- Peterborough Investment Partnership
- Ward Councillors
- Environment Agency
- Public Transport Providers
- Businesses and residents situated in the vicinity of the scheme / s.

All key Stakeholders will be consulted via email for comments. Key Stakeholders will also be communicated to regularly throughout the construction phase by the PLO.

## Public Consultation

Public consultation on the concept of a scheme at this location has already been undertaken as part of the CPCA Local Transport Plan<sup>13</sup> that was adopted in January 2020.

An online consultation exercise will be undertaken at the next stage of scheme development, and results from this consultation will be reported in the OBC and used to inform future Detailed Design. Subject to COVID-19 restrictions, it is anticipated that a public consultation event will be held ahead of construction.

## 6.9. Risk Management Strategy

A Risk Register was produced during the project initiation to identify potential risks and to evaluate factors that could have a detrimental effect on the project. The Risk Register identifies potential risks, considers the impact they may have, the likelihood of them occurring, and the measures that will be taken to mitigate these.

The Risk Register is a live document and is reviewed regularly at progress meetings and updates are reported to the CPCA through the monthly Highlight Reports. A copy of the Risk Register has been provided in Appendix B.

## 6.10. Scheme Evaluation Plan (Benefits Realisation and Monitoring)

The Scheme Evaluation Plan for the University Access Study Improvement Scheme will be prepared prior to scheme construction to set out how this scheme's effects should be evaluated following implementation.

The Scheme Evaluation Plan comprises the Benefits Realisation Plan and the Monitoring and Evaluation Plan.

The purpose of the Scheme Evaluation Plan is to clearly set out which indicators should be monitored to verify that the scheme achieves its objectives. Post monitoring is important for determining that the scheme has been successful.

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<sup>13</sup> <https://cambridgeshirepeterborough-ca.gov.uk/assets/Transport/Draft-LTP.pdf>



### Expected Benefits

The scheme objectives, outputs and outcomes are summarised below. These objectives are described within the Strategic Case and explain what the scheme is expected to deliver.

Primary objectives include:

- **Tackle congestion and reduce delay:** Tackle congestion at key pinch points across the Study Area and reduce delay on routes to the Embankment Area
- **Support Peterborough's Growth Agenda and facilitate the development of the Embankment Area including the University of Peterborough:** Ensure the planned University development and other growth aspirations at the site can be accommodated within the highway network.

Secondary objectives include:

- **Positively impact traffic conditions on the wider network:** Positively impact the performance of local routes impacted by the traffic and congestion in and around the Study Area
- **Improve Road Safety:** Reduce personal injury accidents and improve personal security amongst all travellers
- **Limit impact on the local environment and enhance biodiversity:** Mitigate any adverse impact of a scheme, and enhance biodiversity net gain within the Study Area.

### Benefits Monitoring and Evaluation

The Monitoring and Evaluation plan for the University Access Study takes a proportionate and targeted approach, which will aim to demonstrate how the scheme has performed in relation to its objectives and intended outcomes. The principal aims of Monitoring and Evaluation are to determine whether a scheme has been delivered as planned and whether it has delivered the expected benefits. Where outcomes differ from those expected, data collected for Monitoring and Evaluation evidence base will assist in understanding the reasons for this and the lessons that can be learnt.

Monitoring and evaluation of the schemes performance against its objectives must be undertaken to determine whether the scheme has been a success. Details of how this will be measured are provided in Table 6.2 beneath. These costs are thought to be representative for either Package 1 or Package 2.

Table 6.2: Benefits Realisation Monitoring

	Indicator / Metrics	Source	Reporting Programme			Ownership	Indicative Cost
			Baseline	Implementation	Post Implementation		
Inputs							
Scheme Funding	CPCA Funding	CPCA Funding submission Final Scheme Cost Data	Planned	Actual	-	CPCA / PCC	Package 1 - £7,538,742 Package 2 - £27,217,021
Outputs							
Infrastructure	Infrastructure delivered as part of the scheme	Site Inspection	September 2022	September 2023	January 2025	PCC	£1,000
Outcomes							
Tackle Congestion	Average AM and PM peak journey time	Trafficmaster / Satellite Navigation Data	Planned for Spring 2022		Spring 2025	PCC	£500 cost to process the data
Address journey time reliability on the primary approaches to key junctions in Study Area	Queue Length Data	Automatic Traffic Counters Video survey footage	Planned for Spring 2022		Spring 2025	PCC	£5,000 cost of surveys and processing data
Positive impact on conditions of wider network							
Improve walking and cycling routes	New walking and cycling infrastructure	Site Inspection / Video survey footage	Planned for Spring 2022		Spring 2025	PCC	£1,000 cost of site vist and processing data
Improved Road Safety	Number of KSI incidents	Peterborough database of road traffic records	Planned for Spring 2022		Spring 2025	PCC	£250 cost to process the data
Improve Biodiversity	Biodiversity Calculation	Site Survey and desk based assessment	Planned for Spring 2022		Spring 2025	PCC	£2,000 cost to process the data
Support Growth Agenda including University of Peterborough	Local economic growth and development figures post scheme opening	PCC Planning Portal Local and regional economic reports	Available on-line		Spring 2030	PCC/CPCA	£250 cost to process the data
Create Wider Economic Benefits							
Reporting							
Baseline and Year 1 reports summarising the outcomes of the monitoring and evaluation work			2022		2024	PCC	£3,000
Year 5 report summarising local economic growth, scheme impacts and development figures prior and post opening of the scheme					2030	PCC	£3,000
Total Monitoring and Evaluation Budget							£16,000

### Scheme Logic Mapping

The logic map detailed in Figure 6.4 highlights the links between context, inputs, outputs, outcomes and impacts of the scheme and gives a visual representation of where Monitoring and Evaluation should be focused. The logic model outlines the causal chain of events that represent the process by which the desired outcomes and scheme objectives are to be achieved. The logic model has informed the approach proposed in this M&E plan and will help ensure monitoring resources are targeted appropriately through the timeline of scheme development and provide effective measurement of objectives and outcomes.

The implementation of the Monitoring and Evaluation Plan will help provide an understanding of the following:

- Inputs (did we apply the money and resources that we said we would?)
- Outputs (how much did we build / provide?)
- Outcomes (what changes in behaviour came about as a result?)
- Impacts (what effect did the outcomes have on the economy, society and environment?).

The logic model also incorporates the use of bounding objectives which represent positions beyond which it is not proposed to attribute effects resulting from the scheme. However, the outcomes of the Monitoring and Evaluation plan will help understand the potential for wider impacts resulting from the scheme as outlined in the Logic Map.

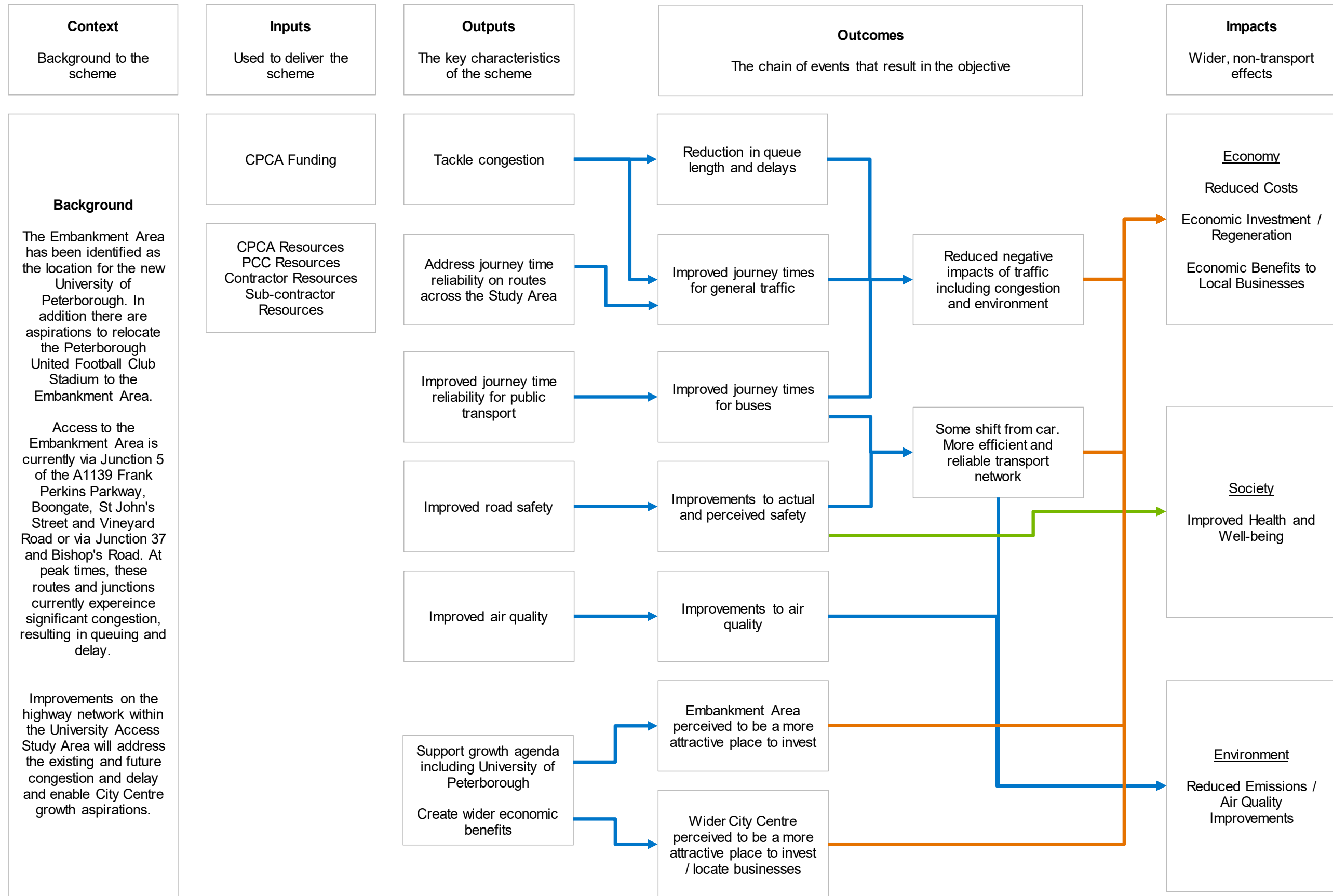


Figure 6.4: University Access Study Monitoring and Evaluation Logic Map

## 7. Appendices

## Appendix A: Wider Policy Context

## Appendix A: Wider Policy Context

### National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and should be considered in the preparation of development plans. Proposed development that accords with an up to date Local Plan should be approved unless other material considerations indicate otherwise.

The NPPF states that all plans are expected to be based upon and to reflect the presumption in favour of sustainable development with clear policies that will guide how the presumption should be applied locally.

The scheme will contribute to delivering the following NPPF objectives:

- **Delivering a sufficient supply of homes.** The scheme will provide crucial transport capacity along the network which will support the housing growth set out for Peterborough within the Local Plan.
- **Building a strong, competitive economy.** The NPPF states that development proposals should support economic growth and productivity. The scheme will provide essential network capacity at a crucial location to enable Peterborough to deliver the homes set out in the Local Plan.
- **Promoting healthy and safe communities and sustainable transport.** The NPPF stipulates that communities should be safe, accessible and supportive of a healthy lifestyle through the provision of cycling and walking facilities. The scheme not only provides highway capacity for strategic trips, but will also include local sustainable transport infrastructure improvements to the immediate area.



## Department for Transport Single Departmental Plan

The single departmental plan for the Department for Transport sets out the strategic objectives to 2020 and the plans for achieving them. The DfT's overall mission is to create a safe, secure, efficient and reliable transport system that works for the people who depend on it; supporting a strong productive economy and the jobs and homes people need.

The objectives outlined in the plan are:

- Support the creation of a stronger, cleaner more productive economy
- Help to connect people and places, balancing investment across the country
- Make journeys easier, modern and reliable
- Make sure transport is safe, secure and sustainable
- Prepare the transport system for technological progress, and a prosperous future outside the EU
- Promote a culture of efficiency and productivity in everything we do.

## Department for Transport: Transport Investment Strategy

The Transport Investment Strategy<sup>1</sup> published in 2017 is the DfT's response to the aims of the Governments Industrial Strategy, and sets out the DfT's approach to investment, in which they seek to:

- Create a more reliable, less congested, and better-connected transport network that works for the users who rely on it
- Build stronger, more balanced economy by enhancing productivity and responding to local growth priorities
- Enhance global competitiveness by making Britain a more attractive place to trade and invest
- Support the creation of new housing.

The Strategy states that investment in the transport network will be in different ways, but fundamentally addressing the network's core capability – its condition, capacity, and connectivity – but also improving the user experience and adapting the network to safeguard environment and health.

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<sup>1</sup> <https://www.gov.uk/government/publications/transport-investment-strategy>

To deliver balanced investment programmes, the DFT will:

- Ensure investment consistently meets the needs of users and helps to create a balanced economy: by focusing on schemes that tackle clearly defined problems or unlock specific opportunities.
- Focus on getting the best value out of the network and our investment: by continuing to prioritise value for money and rigorous business case appraisal.
- Retain a resolute focus on delivery: by continuing to prioritise predictable funding and a stable long-term pipeline of projects.
- Remain adaptable in the face of change: by seeking balance and diversity across the investment portfolio.

The strategy confirms that where local authorities come together to form combined authorities at a local level, they will be supported these through bespoke devolution deals that provide greater freedoms and powers. The devolved funding will be supplemented with specific investment on a competitive basis, both for larger projects across the country which are too big to fund locally (such as the University Access schemes), and for projects which deliver national priorities, such as the local transport schemes within the National Productivity Investment Fund, or schemes which encourage cycling and walking.

### Department for Transport Major Road Network Policy Objectives

In December 2018, the Department for Transport published guidance for the Major Road Network (MRN) and Large Local Majors (LLM) Programme<sup>2</sup>.

The Major Road Network forms the middle tier of the country's busiest and most economically important local authority 'A' roads, sitting between the national Strategic Road Network and the rest of the local road network. The A1139 Fletton Parkway / Frank Perkins Parkway is part of the MRN, and therefore any improvement scheme on this road, or benefitting this road, could be eligible for funding.

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<sup>2</sup> <https://www.gov.uk/government/publications/major-road-network-and-large-local-majors-programmes-investment-planning/major-road-network-and-large-local-majors-programmes-investment-planning-guidance#mrn-objectives>

The MRN has five objectives which build on the commitments made in the Transport Investment Strategy. The objectives are:

- Reduce congestion - Alleviating local and regional congestion, reducing traffic jams and bottlenecks.
- Support economic growth and rebalancing - Supporting the delivery of the Industrial Strategy, contributing to a positive economic impact that is felt across the regions.
- Support housing delivery – Transport infrastructure is key to unlocking development and delivering places people want to live.
- Support all road users - Recognising the needs of all users, including cyclists, pedestrians and disabled people.
- Support the Strategic Road Network - Complementing and supporting the existing SRN by creating a more resilient road network in England.

### Peterborough City Council's Vision and Strategic Priorities

The Council's vision is to

*'Create a bigger and better Peterborough that grows the right way and through truly sustainable development and growth:*

- *Improves the quality of life of all its people and communities, and ensures that all communities benefit from the growth and the opportunities it brings*
- *Creates a truly sustainable Peterborough, the urban centre of a thriving sub-regional community of villages and market towns, a healthy, safe and exciting place to live, work and visit, famous as the environmental capital of the UK'.*

The strategic priorities for the Council are:

- Drive growth, regeneration and economic development
- Improve education attainment and skills
- Safeguard vulnerable children and adults
- Implement the Environment Capital agenda
- Support Peterborough's culture and leisure trust Vivacity
- Keep all our communities safe, cohesive and healthy
- Achieve the best health and wellbeing for the city

## Peterborough City Council Local Plan

The Local Plan (adopted July 2019) updates the 2011 Core Strategy and looks to deliver 19,940 new homes between 2017 and 2036, and 17,600 jobs between 2015 and 2036. The development strategy for the new Local Plan is to focus the majority of new housing development in, around and close to the urban area of the city of Peterborough. Only a small percentage of residential development is allocated to the villages and rural area. Similarly, employment development will be focussed on the city centre, urban area or urban extensions.

The Local Plan will deliver the council's corporate priorities (listed below) which aim to improve the quality of life for all residents and communities.

- Drive growth, regeneration and economic development
- Improve education attainment and skills
- Safeguard vulnerable children and adults
- Implement the Environment Capital agenda
- Support Peterborough's culture and leisure trust Vivacity
- Keep all our communities safe, cohesive and healthy
- Achieve the best health and wellbeing for the City.

Policy LP13: Transport states that the impact of growth on the city's transport infrastructure will require careful planning and that new development must ensure that appropriate provision is made for the transport need that it will create.

Policy LP14: Infrastructure identifies that the major growth and expansion of Peterborough will be supported by necessary infrastructure such as roads, schools and health and community facilities is in place to help the creation of sustainable communities.

Appendix B: Risk Register

Risk ID	Date Identified	Cause(s)	Risk Event	Effect(s)	Risk Type	Risk Status	Proximity	Date Last Review	Mitigation Plan	Action Owner	Date Mitigation Due	Date Action Closed	Likelihood (1-5)	Impact (1-5)	RAG score (likelihood x impact)	Approx. Financial Impact (£k) TOTAL £0	Comments/Notes/Assumptions	Risk Owner	Escalation Required?	Date Closed
2	Feb-20	Delay in use of PTM3	<b>Modelling Issues</b> The PTM3 Saturn Model is still being validated and therefore any delays to the PTM3 programme will impact on this programme	Likely effect is that a delay would be caused	External	Open	Imminent	Nov-20	Priority is being given to the PTM3 project in terms of resources to ensure it is ready to test options for this project.	Lewis Banks	Apr-20		2	3	6		There is a delay to the PTM and we are monitoring this risk. - UPDATE issues are still being experienced hindering progress, therefore score has been increased. FURTHER UPDATE the PTM has now been validated therefore score has been reduced.	Lewis Banks	No	
3	Dec-19	Results of surveys which may necessitate alterations to proposed works scope or methodology	<b>Change in proposals</b> There also is a possibility that the data may provide results that may require change in what we propose as improvements.	Likely effect is that a delay would be caused	Strategic	Open	Approaching	Nov-20	Ensure all investigations are carried out at an early design stage	Lewis Banks	Mar-02		2	3	6		This risk will be monitored. UPDATE model has now been validated and ready to use.	Lewis Banks	No	
15	Nov-20	New Peterborough United stadium to be located at the Embankment	<b>Changes to traffic modelling proposed for the University</b> Relocation of Peterborough United football stadium to the Embankment would fundamentally alter traffic patterns and potential schemes. Will need to be explored further at OBC.	Traffic forecasts for University will need further review	Strategic	Open	Approaching	Nov-20	As the SOBC stage is nearing completion, the impact of relocating the football ground will be further reviewed at the OBC stage.	Lewis Banks	Apr-21		2	3	6		This is a possible risk and will therefore be monitored.	Lewis Banks	No	
1	Mar-20	Delay to project	<b>Coronavirus outbreak</b> There is risk that with the rise of coronavirus cases that some of the staff working on the project may become infected and would have to self isolate.	Likely effect is that a delay would be caused	Internal	Open	Imminent	Nov-20	Government guidance would be followed. Any member of staff or their family do become unwell, they would be recommended to work from home for a 14 day period/self isolate.	Lewis Banks	Mar-20		2	2	4		This will be closely monitored. UPDATE score has been reduced. UPDATE with cases now rising this will be monitored. UPDATE score has been slightly increased with the introduction of the latest lockdown.	Lewis Banks	Yes	
4	Dec-19	Inaccuracy or delay in receiving survey information	<b>Data issues</b> Issues with the data such as a road closure/accident may not provide accurate data.	If needed we may decide to undertake another survey to provide us with more data to analyse.	Strategic	Open	Imminent	Nov-20	We will plan to schedule the survey at a time when there are no other road works on the network close to the site of the survey. We will contact survey company at an early stage so they can provide a date when the survey can be carried out to avoid a delay, if there is delay then we will contact other survey companies to ask if they have availability/resource to carry out the survey.	Lewis Banks	Feb-20		2	2	4		This is a possible risk, but we feel confident that it can be dealt with should it arise.	Lewis Banks	No	
5	Dec-19	Public and stakeholder objections	<b>Consultation</b> There is good possibility that we may receive objections for the improvements that we may decide to undertake for the project.	Likely effect is that a delay would be caused	Political	Open	Distant	Nov-20	Early consultation/notification as deemed necessary by PCC. Develop publicity strategy and liaise with businesses/residents affected by the works and scheme mobilisation	Lewis Banks	TBC		2	2	4		This is a possible risk, but we feel confident that it can be dealt with should it arise.	Lewis Banks	No	
6	Feb-20	Budget escalation	<b>More funding required</b> Work to develop options or time take to model the options may take longer than originally anticipated	Likely effect is that more funding would be required	Financial	Open	Distant	Nov-20	Programme has allowed for additional time for option development and modelling tasks based on experience of previous projects. Overall budget for project is being managed closely to ensure it is to programme, and early warnings can be given if an overspend is likely.	Lewis Banks	Dec-20		2	2	4		Not an issue at the moment, but will be monitored.	Lewis Banks	Yes	
7	Feb-20	Failure to achieve project outcomes	<b>Not meeting outcomes</b> Preferred option does not deliver the original project outcomes	Likely effect is the scheme will not resolve the original problems identified.	Political	Open	Distant	Nov-20	Scheme objectives will be developed based on the problems identified at the junction and the wider policy objectives. Options will be scored against scheme objectives to ensure that they fit with what is to be achieved.	Lewis Banks	TBC		2	2	4		Not an issue at the moment, but will be monitored.	Lewis Banks	Yes	
8	Feb-20	Poor value for money	<b>BCR Score</b> BCR for scheme is poor/low value for money.	Likely effect is the scheme will not be deliverable/funded	Financial	Open	Close	Nov-20	Options are developed with a good understanding of the existing problems, including an understanding of the current congestion/delay at the junction. Therefore is is likely that a preferred scheme would deliver a positive BCR. If a only a poor BCR is achievable, the project will be halted at SOBC stage and not progressed further.	Lewis Banks	Nov-20		2	2	4		This is a possible risk, but we feel confident that it can be dealt with should it arise.	Lewis Banks	No	
9	Feb-20	Unknown STATS	<b>Unknown Stats</b> STATS maybe found at the junction and cause a delay to design or construction if not found early enough	Likely effect is that a delay would be caused	External	Open	Distant	Nov-20	STAT Plans are being requested at an early stage of the project prior to design to ensure engineers are aware of the STATS that are present within the vicinity of the junction	Lewis Banks	TBC		2	2	4		This is a possible risk and will therefore be monitored.	Lewis Banks	No	
10	Feb-20	Unknown Environmental Issues	<b>Environmental Issues</b> Environmental issues such as noise, air or ecology may cause a delay to design and construction if suitable mitigation approaches not considered	Likely effect is that a delay would be caused	External	Open	Approaching	Nov-20	Desktop Environmental study will be undertaken at SOBC stage to identify any possible environmental issues. At OBC stage an environmental report will be undertaken to identify any environmental impacts and mitigation measures	Lewis Banks	TBC		2	2	4		This is a possible risk and will therefore be monitored.	Lewis Banks	No	
11	Feb-20	Adverse publicity	<b>Disruption to network</b> There is possibility that adverse publicity may be received due to the disruption to the network during construction	Likely effect is that a delay would be caused	External	Open	Distant	Nov-20	Advise the public as early as possible about the construction timetable. Avoid busy periods such as Christmas to minimise the delays to travelling public	Lewis Banks	TBC		2	2	4		This is a possible risk and will therefore be monitored.	Lewis Banks	No	
12	Nov-19	Delay in obtaining approval to commence project Raising order to Skanska	<b>Fully spending grant within financial year</b> Due to the project starting late, it will become difficult to spend all of the grant allocated (£130k) before end of March 2020.	There will be grant unspent, which could impact future grant allocations for other projects.	Financial	Closed	Imminent	Nov-20	To hold a meeting with Skanska to discuss what can be achieved within funding period. Also inform CPCA at the earliest opportunity so that the necessary processes and approvals are obtained in order to slip the unspent grant allocation into 2020/21.	Lewis Banks	Feb-20	Apr-20	1	1	1		We are currently working with our internal finance team and Skanska colleagues to understand how much we think we are likely to spend in 2019/20 - <b>UPDATE</b> Project is to continue into 2020/21.	Lewis Banks	Yes (Corporate)	Apr-20
13	Oct-19	Delay in obtaining approval to commence project Raising order to Skanska	<b>Time frames for delivery</b> Due to not receiving approval it becomes difficult to set time frames for programme of works.	Skanska will not be able to provide accurate programme of works for the project. Therefore it will not be known how much of the budget will be spent.	Financial	Closed	Imminent	Nov-20	Utilise Peterborough Highways contract to ensure best use of available time and resources. Getting the programme confirmed early so that arrangements can be made to slip money if required.	Lewis Banks	Dec-19	Jan-20	1	1	1		We are working closely with our Skanska colleagues and providing them with an update as to how we are progressing with the approval process.	Lewis Banks	No	Jan-20
14	Sep-19	Delay in obtaining approval to commence project	<b>Unable to raise order to Skanska</b> Without approval to start the project we will not be able to get a works order over to Skanska.	Skanska will not be able to start work on business case.	Financial	Closed	Imminent	Nov-20	To hold a meeting with Skanska to discuss order and schedule of works for rest of the financial year	Lewis Banks	Dec-19	Jan-20	1	1	1		Currently working on internal governance process to get approval to raise order.	Lewis Banks	No	Jan-20

Appendix C: Economic Efficiency of the Transport System (TEE) Table for Package 1 and Package 2



Economic Efficiency of the Transport System (TEE)						
	Package 1			Package 2		
Consumer - Commuting User Benefits	All Modes		Road	All Modes		Road
Travel Time	2,934		2,934	4,575		4,575
Vehicle operating costs	339		339	164		164
User charges	0		0	0		0
During Construction & Maintenance	0		0	0		0
NET CONSUMER - Commuting Benefits	3,274		3,274	4,740		4,740
Consumer - Other User Benefits	All Modes		Road	All Modes		Road
Travel Time	6,483		6,483	8,782		8,782
Vehicle operating costs	1,053		1,053	616		616
User charges	0		0	0		0
During Construction & Maintenance	0		0	0		0
NET CONSUMER - Other Benefits	7,536		7,536	9,398		9398
Business	All Modes	Road Personal	Road Freight	All Modes	Road Personal	Road Freight
Travel Time	3,705	983	2,721	5,717	1,695	4,022
Vehicle operating costs	1,089	199	890	872	240	633
User charges	0	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0	0
Subtotal	4,794	1,182	3,611	6,589	1,935	4,655
Private Sector Provider Impacts						
Revenue	0			0		
Operating costs	0			0		
Investment costs	0			0		
Grant/subsidy	0			0		
Subtotal	0			0		
Other business Impacts						
Developer contributions	0			0		
NET BUSINESS IMPACT	4,794			6,589		
TOTAL	Package 1			Package 2		
Present Value of Transport Economic Efficiency Benefits (TEE)	15,604			20,727		

Appendix D: Appraisal Summary Table (AST)

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Appendix C: Appraisal Summary Table

Impacts		Summary of key impacts	Assessment – Package 1		Assessment – Package 2	
			Qualitative	Quantitative (Monetary)	Qualitative	Quantitative (Monetary)
Economy	Business Users & Transport Providers	Transport user benefits have been calculated using the Peterborough Transportation Model 3 (PTM3) and Transport User Benefits Appraisal (TUBA) tool. Benefits have been discounted to the 2010 base year and expressed in 2010 market prices.	Not Assessed	£10,383,000 (PVB)	Not Assessed	£ 12,598,000(PVB)
	Reliability Impact on Business Providers	Business users are expected to benefit from more reliable journey times because of congestion and delay reductions.	Moderate Beneficial	Not Assessed	Moderate Beneficial	Not Assessed
	Regeneration	Increased capacity on highway network to help enable delivery of Embankment Opportunity Area and Wider City Centre Redevelopment aspirations	Moderate Beneficial	Not Assessed	Moderate Beneficial	Not Assessed
	Other impacts – impact on local business	The Study Area is to the east of the city centre and close to the Fengate Industrial Area. Any proposed measures to improve journey time reliability and reduce congestion should help to keep the city centre and Fengate Industrial Area as an attractive location for businesses.	Slight Beneficial	Not Assessed	Slight Beneficial	Not Assessed
Environmental	Noise	Package 1 may have an impact on the residential dwellings on Bishop’s Road due to increased traffic. Package 2 may have an impact on residences on Star Road due to dualling of Boongate. Further assessments to be undertaken to determine impact as scheme progresses.	Neutral	Not Assessed	Neutral	Not Assessed
	Air Quality	The reduction in queueing, and therefore idling, may have a beneficial impact on air quality at receptors near the scheme site. However, further assessments will be required as the scheme progresses.	Slight Beneficial	Not Assessed	Slight Beneficial	Not Assessed
	Greenhouse Gases	Due to the decrease in congestion, there it is likely a small positive impact on greenhouse gas emissions will be seen upon scheme completion. Further assessments will be undertaken as the scheme progresses	Slight Beneficial	£557,000 (PVB)	Slight Beneficial	£479,000 (PVB)
	Landscape	Most of the works are within the highway boundary / urban area and designs will be sensitive to local area – neutral impact	Neutral	Not Assessed	Neutral	Not Assessed
	Townscape	Most of the works are within the highway boundary / urban area and designs will be sensitive to local area – neutral impact	Neutral	Not Assessed	Neutral	Not Assessed
	Historic Environment	Most of the works are within the highway boundary and designs will be sensitive to local area – neutral impact	Neutral	Not Assessed	Neutral	Not Assessed
	Biodiversity	Biodiversity will be assessed as the scheme progresses and any mitigation measures identified. The provision of a new northbound off-slip in Package 1 will require removal of 10 Corsican Elm trees which have a high community asset value. Plus loss of greenspace at Bishop’s Road Recreation Area. Package 2 will utilise highway verge which has safeguarded for the potential dualling of Boongate.	Moderate Negative	Not Assessed	Neutral	Not Assessed
	Water Environment	There are parts of the study area that are included in Flood Zone 2 and 3. Any highway scheme, will need to be careful consideration of flood risk in any scheme design.	Neutral	Not Assessed	Neutral	Not Assessed
Social	Commuting & Other Users	Transport user benefits have been calculated using the Peterborough Transportation Model 3 (PTM3) and Transport User Benefits Appraisal (TUBA) tool. Benefits have been discounted to the 2010 base year and expressed in 2010 market prices. Users are expected to benefit from improved journey times because of reduced congestion.	Not Assessed	£ 22,287,000 (PVB)	Not Assessed	£ 25,254,000 (PVB)
	Physical Activity	Improvements for pedestrians and cyclists will be considered as part of the scheme and will encourage sustainable travel across the Study Area	Slight Beneficial	Not Assessed	Slight Beneficial	Not Assessed
	Journey Quality	Driver’s frustration caused by unreliable journey times is likely to be reduced significantly. Overall improvement in safety.	Slight Beneficial	Not Assessed	Slight Beneficial	Not Assessed
	Accidents	Scheme improvements at junctions is expected to have a slight benefit on road safety.	Slight Beneficial	Not Assessed	Slight Beneficial	Not Assessed
	Personal Security	Routes for improvements have been identified and further plans will be discussed at OBC	Slight Beneficial	Not Assessed	Slight Beneficial	Not Assessed
	Access to the transport system	The provision of a new northbound off-slip in Package 1 and the dualling of Boongate in Package 2 will improve the access to and from the parkway network. Journeys will also be more reliable.	Slight Beneficial	Not Assessed	Slight Beneficial	Not Assessed
	Affordability	No specific changes to the cost of travel (public transport fares, road user pricing or car parking increases	Neutral	Not Assessed	Neutral	Not Assessed
	Severance	Improvements in pedestrian and cycling facilities will ease severance across the key junctions in the study area,	Slight Beneficial	Not Assessed	Slight Beneficial	Not Assessed
	Option & Non-Use Values	Not Applicable	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Public Accounts	Cost to Broad Transport Budget	The cost to the Broad Transport Budget (PVC) has been calculated	Not Assessed	£6,154,000 (PVC)	Not Assessed	£23,776,000 (PVC)
	Indirect Tax Revenues	The Indirect Tax Revenues have been calculated	Not Assessed	- £1,082,000	Not Assessed	- £913,000

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