

Cambridgeshire and Peterborough Local Transport Plan: Cambridgeshire Autonomous Metro (CAM) Sub-Strategy

Local Transport Plan

Background

The Local Transport Plan (LTP) was published in March 2020 and was the first for Cambridgeshire and Peterborough. The Plan describes how transport interventions will help to address current and future challenges and opportunities for Cambridgeshire and Peterborough. It sets out the overarching 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 LTP provides a robust platform for the planning and delivery of the Authority's ambitious programme of priority transport schemes. The Authority continues to work closely with its partners in spatial planning and the delivery of transport priorities to identify the most appropriate time to refresh the LTP and/or its supporting daughter documents.

This document outlines the CAM draft sub-strategy, which is a daughter document of the LTP. It describes the policy framework for the CAM metro. Schemes which form part of the CAM metro will be compliant with the policies in this document.

Vision, Goals and Objectives

The overarching 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

This vision guides the Authority's overall direction of this sub-strategy and the underpinning sub-strategies. From the vision the Authority developed a number of key goals. These three goals are intended to outline what wider outcomes we want the transport network in Cambridgeshire and Peterborough to achieve.

- **Economy:** Deliver economic growth and opportunity for all our communities.
- **Society:** Provide an accessible transport system to ensure everyone can thrive and be healthy.
- **Environment:** Protect and enhance our environment and implement measures to achieve net zero carbon.

The LTP's overarching vision to deliver a world-class transport network for Cambridgeshire and Peterborough that supports sustainable growth and opportunity for all can only be realised if a public transport system that offers a genuine alternative to the car is implemented.

The LTP's ten objectives are strongly aligned to the goals outlined above. These form the basis against which transport schemes (such as CAM) should be and are assessed.

Local Transport Plan objectives

Goal	Objective	
Economy		Support new housing and development to accommodate a growing population and workforce, and address housing affordability issues
		Connect all new and existing communities sustainably so residents can easily access a good job within 30 minutes, spreading the region's prosperity
		Ensure all of our region's businesses and tourist attractions are connected sustainably to our main transport hubs, ports and airports
		Build a transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability
Society		Embed a safe systems approach into all planning and transport operations to achieve Vision Zero – zero fatalities or serious injuries
		Promote social inclusion through the provision of a sustainable transport network that is affordable and accessible for all
		Provide 'healthy streets' and high-quality public realm that puts people first and promotes active lifestyles
		Ensure transport initiatives improve air quality across the region to meet good practice standards
Environment		Deliver a transport network that protects and enhances our natural, historic and built environments
		Reduce emissions to 'net zero' by 2050 to minimise the impact of transport and travel on climate change

Supporting Sub-Strategies

The LTP sets out a plan to tackle Cambridgeshire and Peterborough's transport challenges. The Authority's overarching vision is to create a transport system in which walking, cycling and public transport (including CAM) are natural choices for the majority of journeys because they are affordable, healthy, convenient and safe alternatives to the private car.

The Authority continues to develop and iterate the supporting strategies for each specific area of transport planning that complement the LTP and will ensure its delivery. In addition, locational transport plans and strategies will evolve that focus

on the transport improvements within a specific area and therefore will be updated in a timely manner.

One of the strategies underpinning the LTP is this draft sub-strategy for CAM.

The Cambridgeshire Autonomous Metro – Policy Alignment

The need for CAM

To date, economic growth in the region has not been matched by basic infrastructure, particularly transport. New infrastructure is needed to support the delivery of new jobs and new homes, and enable existing communities to benefit from greater access to transport options, jobs and opportunities. CAM will connect key regional centres of employment, existing settlements, key railway stations, new homes and planned growth, to create a platform for sustainable and inclusive growth across the region.

Introduction to CAM

One of the LTP's key objectives is to connect all new and existing communities sustainably so residents can easily access a good job within 30 minutes, spreading the region's prosperity. In order to achieve this objective, the LTP outlines how large-scale investment in public transport must provide extra capacity for people to travel sustainably across the region.

To nurture and sustain growth, new infrastructure is needed to support the delivery of new jobs and new homes. The CAM vision is for an expansive high-quality, fast and reliable metro-style network that seamlessly connects regional settlements, major city fringe employment sites and key satellite growth areas across the region with key railway stations and urban centres.

Alignment to Local Transport Plan

Better connecting people, markets and businesses, and future transport provision will help to improve regional productivity. This will help the Authority to deliver its economic vision and improve quality of life for all. Public transport such as CAM will play a key part in achieving those outcomes.

CAM is an essential component of the overarching LTP vision and transport strategy as it will deliver a step change in connectivity, helping to deliver agglomeration benefits, and encouraging modal shift to low-carbon modes.

Alignment with the CPIER statements

The Cambridgeshire and Peterborough Independent Economic Review (CPIER) published its final report in September 2018. The report was developed by the Cambridgeshire and Peterborough Independent Economic Commission, chaired by Dame Kate Barker.

The report evidences the fast rate of economic and employment growth in the region and highlights the importance of planning now to ensure that strong growth will be sustainable and more inclusive. The report fully supported the development and

implementation of CAM and stated that *“in areas of more dense population, ambitious new projects such as the introduction of a form of rapid transit through the Cambridge Autonomous Metro (CAM) could transform the economy and many people’s day-to-day lives. These can provide for continued sustainable growth”*.

The CPIER report demonstrated that economic growth in the region has not been matched by investment in basic infrastructure, particularly transport. It recommended that:

“A package of transport, and other infrastructure projects to alleviate the growing pains of Greater Cambridge, should be considered the single most important infrastructure priority facing the Combined Authority in the short to medium term.”

A key conclusion to the report is that closer alignment between spatial and transport planning can allow economic growth without driving increased travel. It is essential that transport services are designed to support historic settlement patterns, particularly for residents and businesses located in rural areas. Another key contribution to the Authority’s efforts in this area is the work of the Bus Reform Task Force that will report in late 2020 and will subsequently impact on the overarching transport strategy for the Authority area, including that for CAM.

Alignment between CAM objectives and the Local Transport Plan objectives

The table below sets out the Authority’s objectives for the CAM and how they support the Authority’s overall aims and objectives.

Goal	Objective	CAM Objective	CAM sub-objective	Desirable	
<p>Economy</p>		<p>Support new housing and development to accommodate a growing population and workforce, and address housing affordability issues</p>	<p>CAM 1: Promote economic growth and opportunity</p> <p>CAM 2: Support the acceleration of housing delivery</p>	<ul style="list-style-type: none"> • CAM-E1: Promote agglomeration • CAM-E2: Support new employment by enhancing access to and attractiveness of key designated employment areas by specifically enabling, serving and supporting: <ul style="list-style-type: none"> - New settlements and enterprise zones already included in existing adopted Local Plans - New Garden Village settlements <p>Supporting the development of</p> <ul style="list-style-type: none"> - New settlements being brought forward by any future development corporations created in the Oxford-Cambridge corridor. <ul style="list-style-type: none"> • CAM-E3: Increase labour market catchment • CAM-E4: Serve and support new areas for sustainable housing development • CAM-E5: Provide overall transport capacity to enable and accommodate future growth 	<ul style="list-style-type: none"> • 24/7 operation • Possibility for a freight capacity • Utilisation of smart infrastructure
		<p>Connect all new and existing communities sustainably so residents can easily access a good job within 30</p>		<ul style="list-style-type: none"> • CAM-E6: Improve transport connectivity • CAM-E7: Improve journey time reliability 	

Goal	Objective	CAM Objective	CAM sub-objective	Desirable
	<p>minutes, spreading the region's prosperity</p>		<ul style="list-style-type: none"> • CAM-E8: Direct high-quality public transport access to key housing sites (existing designations) 	
	 <p>Ensure all of our region's businesses and tourist attractions are connected sustainably to our main transport hubs, ports and airports</p>		<ul style="list-style-type: none"> • CAM-E9: Directly serve and link into transport hubs including existing and planned rail stations • CAM-E10; At transport hubs, support easy and rapid mode changes and transfers • CAM-E11: At transport hubs facilitate first and last mile connectivity to the local area • CAM-E12: Support the development of demand responsive modes • CAM-E13: Integration with other modes, including bus. 	
	 <p>Build a transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability</p>		<ul style="list-style-type: none"> • CAM-E14: Integrated with main arterial corridors, including the projected East West Rail route and the upgraded A428, and key LTP infrastructure projects • CAM-E15: Dedicated segregated routes as default assumption. • CAM-E16: CAM will use technology, infrastructure and concepts of operations that deliver safe, reliable, regular, resilient and inclusive transport 	

Goal	Objective	CAM Objective	CAM sub-objective	Desirable
			<ul style="list-style-type: none"> • CAM-E17: CAM must be deliverable within the current decade • CAM-E18: CAM must be future proofed and flexible in terms of capacity and technology. • CAM-E19: CAM will utilise sustainable, highly flexible, zero emission vehicles • CAM-E20: CAM will be designed to maximise passenger trips in both directions and across the whole day. 	
Society	 <p>Embed a safe systems approach into all planning and transport operations to achieve Vision Zero – zero fatalities or serious injuries</p>	CAM 3: Promote Equity	<ul style="list-style-type: none"> • CAM-S1: Provision of safe and secure CAM network – safe by design, safe in construction and safe in operation – to meet all standards and global best practice • CAM-S2: CAM will meet all planning and environmental requirements 	
	 <p>Promote social inclusion through the provision of a sustainable transport network that is affordable and accessible for all</p>		<ul style="list-style-type: none"> • CAM-S3: Affordable and fair fare structure. • CAM-S4: Compatible with county wide future integrated ticketing • CAM-S5: Promotes seamless connectivity between regional settlements, major city fringe employment sites and key satellite 	

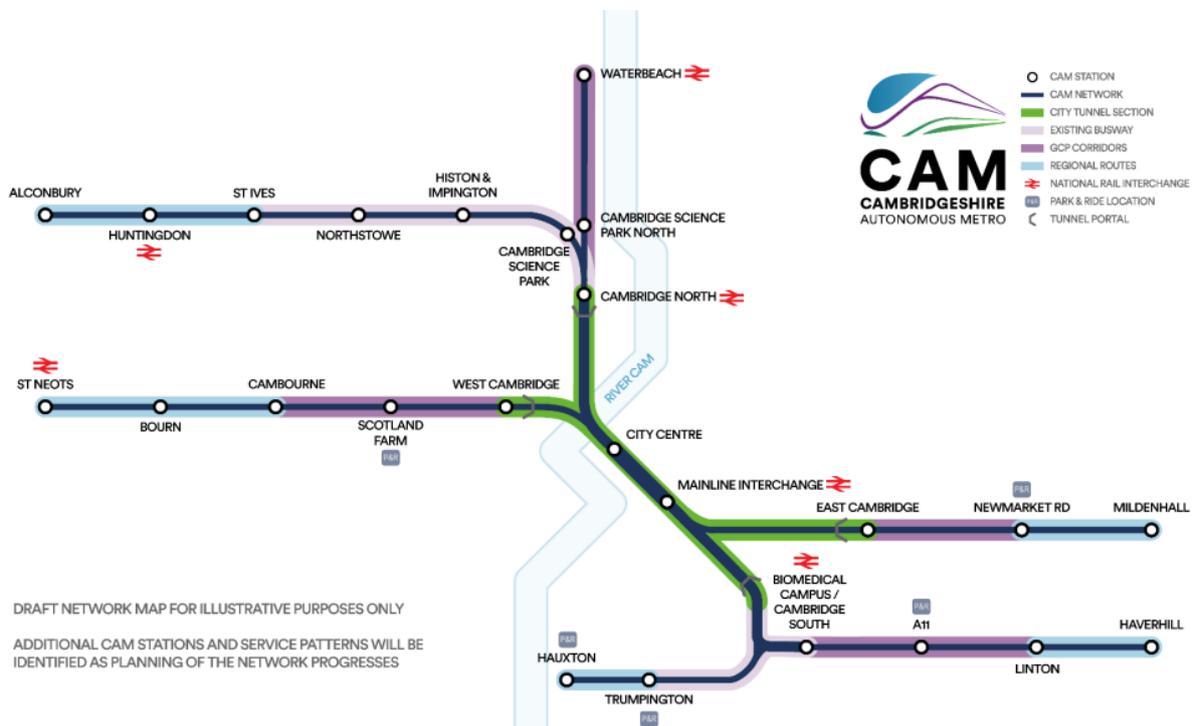
Goal	Objective	CAM Objective	CAM sub-objective	Desirable
			<p>growth areas across Cambridgeshire and Peterborough</p> <ul style="list-style-type: none"> • CAM-S6: Facilitates seamless cross country and city journeys to outlying regional settlements, urban fringe employment sites and key satellite growth areas • CAM-S7: Improve opportunities for all residents and communities • CAM-S8: Promotes high quality public realm at stations • CAM-S9: Reduces adverse impacts of public transport provision on city, urban and village centre mobility for pedestrians and cyclists 	
	 <p>Provide 'healthy streets' and high-quality public realm that puts people first and promotes active lifestyles</p>		<ul style="list-style-type: none"> • CAM-S10: Support and be complimentary to walking and cycling. 	
	 <p>Ensure transport initiatives improve air quality across the region to meet good practice standards</p>		<ul style="list-style-type: none"> • CAM-S11: Improve air quality • CAM-S12: Promote low carbon economy 	
Environment	 <p>Deliver a transport network that protects and enhances our</p>	CAM 4: Promote sustainable growth and development	<ul style="list-style-type: none"> • CAM-EV1: Support environmental sustainability <ul style="list-style-type: none"> - Minimises adverse impacts on conservation areas, heritage 	

Goal	Objective	CAM Objective	CAM sub-objective	Desirable
	<p>natural, historic and built environments</p>		<p>and natural community assets, including protecting the character of villages and avoiding encouraging unsustainable village fringe development.</p> <ul style="list-style-type: none"> - Meets net gain requirements and where possible offers additional visual and environmental enhancements. 	
	 <p>Reduce emissions to 'net zero' by 2050 to minimise the impact of transport and travel on climate change</p>		<ul style="list-style-type: none"> • CAM-EV2: CAM infrastructure will utilise zero emission vehicles; other public transport zero emissions vehicles should be able to use sections of the CAM infrastructure if they are CAM compatible • CAM-S11: Improve air quality • CAM-S12: Promote low carbon economy 	

CAM sub-strategy

The CAM programme is comprised of several main elements to be delivered over time:

- The City Tunnel Section, including underground tunnels and planned major interchange hubs at the city centre and at the mainline railway station, under the city of Cambridge;
- Inner Corridors, often referred to as the 'GCP Corridors'; and
- Regional Routes to extend the system to reach Garden Villages, employment sites, etc.



Opportunities to expand the CAM network beyond the currently planned network will continue to be explored by the Authority, and as such, all planned network components must be designed to properly link with one another and not preclude future linkages.

In line with policies E9 and E14, these projected routes will need to complement and be integrated with other major transport infrastructure developments along the corridors they serve. National government's commitment to an East-West Rail route and proposed new heavy rail improvements and/or station developments at St Neots, West of Cambourne, Cambridge South, and Waterbeach will need to be taken into account in developing business cases. At the time of developing this document, this indicates the need for an interim review of emerging business cases for the Cambourne to Cambridge and Cambridge to Waterbeach routes.

Subject to planning permission, other approvals and funding, the Regional Routes are planned to become operational from 2024 onwards with the City Tunnel Section to follow by 2029.

CAM is designed to provide a best-in-class passenger experience in terms of journey time reliability, smoothness of ride, vehicle and stop quality, level boarding, fully electric operation and off-vehicle ticketing. CAM is currently anticipated to be segregated as a default assumption.

To enhance safety and reduce operating costs it is desirable for CAM to become driverless once autonomous vehicles have been approved for use in the UK and the appropriate safety regulations have been established.

The CAM scheme is scalable and has the potential to further increase carrying capacity in line with the future demands as it is anticipated that there may be a greater shift from the private car to CAM following the scheme's introduction.

The LTP ambition

The Authority's core transport strategies aim to encourage the shift to walking, cycling and public transport: from providing sustainable connectivity to and within new developments, to delivering world-class walking and cycling infrastructure, and a new, more integrated and accessible, public transport network. Major projects, such as CAM and East West Rail (EWR), will provide new journey opportunities, with fast, frequent services and competitive journey times, designed to act as a genuine alternative to the private car.

Complementing CAM will be a comprehensive, better integrated network of local bus services, connecting the suburbs of the major conurbations and smaller towns and villages to employment centres across the area and the CAM network. Existing and new transport hubs, interchanges and Park & Ride sites will provide sustainable travel options. These will be better integrated into surrounding local transport networks, acting as travel hubs with high-quality interchange between CAM and local bus and demand-responsive services, together with the walking and cycling network. Local buses – and demand-responsive transport – will be designed to ensure that no one is outside of the reach of safe, reliable public transport, and hence helping to maximise social inclusion for those who lack access to a car.

For CAM to be successful, high-quality interchanges will be needed. This means they will be attractive, safe, inclusive and secure with excellent information and integrated feeder transport arrangements – walking, cycling, bus, taxi and other modes.

To ensure that the CAM system is accessible to our customers and communities, we propose involving our communities, including older people, disabled people and young people in the design and delivery of the CAM system.

CAM 1: Promote economic growth and opportunity

The CPIER highlighted the incredible economic success story of the Cambridge-focused science and tech industries over the last 50 years, underpinned by the presence of the Universities and science parks in and around Cambridge. The area is a global leader in innovation and commercialisation of ideas, and a magnet for companies across the globe. In the last few years this has delivered employment and business growth far above average. However, CPIER also found that this

growth was uneven, with surrounding parts of Cambridgeshire not necessarily sharing in that same level of success. The CPIER also noted the clusters of activity in other towns, for example advanced materials (composites) in Huntingdon.

The Local Industrial Strategy has a priority to improve the long-term capacity of the area by supporting the foundations of productivity. It also has a priority to broaden the base of economic growth, including by spreading the benefits of high growth beyond the Cambridge area. There are, however, signs that constraints on growth are starting to bite. In particular, transport issues will significantly reduce this success if not dealt with.

The CAM, in providing an integrated network through its Regional Routes, will connect many towns and key locations, including science parks. This will help deliver the Local Industrial Strategy priorities. Firstly, the CAM will improve employment opportunities as more residents will have 30 minutes or better access by high quality sustainable travel to key employment locations. Secondly, it will increase the attractiveness of surrounding towns to businesses to establish and expand their operations, thus spreading the growth benefits of the science and tech economy across the wider region.

CAM 2: Support the acceleration of housing delivery

As a result of its strong economy, the world-class education offer and good living environment, this part of Cambridgeshire has seen rapid growth in both employment and households (but also increases in house prices as supply has not kept up with demand). To cater for that growth, local councils in the area have plans in place for an additional 61,000 homes by 2031. The CAM is critical to delivering sustainable transport to support that growth.

Much of the new development is on the edge or outside of Cambridge in large-scale developments. These include new settlements on proposed CAM routes at places such as Northstowe, Bourn Airfield, north of Waterbeach, and Alconbury Weald, Huntingdon. Some of these locations will continue to provide housing beyond 2031. The plans for the Greater Cambridge area are also under review to extend them cover the period to 2040.

As highlighted in the Combined Authority's Growth Ambition Statement, the CAM enables the development of new sustainable settlements along its route. They can be designed from the ground-up to be integral with the CAM, including walking and cycling access, maximising the sustainable travel benefits. As Garden Villages these communities will be exemplars in sustainable ways of living and working, with local community infrastructure, job opportunities and attractive green space and public realm areas. Long-term stewardship of community assets is a feature of Garden Villages. Locations of Garden Villages will be examined through the planning process.

In the March 2020 budget, the Government announced that it was going to examine and develop the case for new Development Corporations in the Oxford-Cambridge Arc with a focus on St Neots/Sandy, Cambourne and Cambridge. This included plans to explore the case for a New Town at Cambridge. It is therefore important

that the CAM scheme is adaptable and helps to meet the travel demands emerging from these new developments through its integration into the fabric of the development with appropriate interchange and services.

CAM 3: Promote Equity

Integration with the wider passenger transport network

The public transport strategies for Cambridge and Peterborough (previously developed by the County and City Councils) set out the long-term strategy and short-term delivery plan for public transport. As with the other all the underpinning daughter documents to the LTP, these strategies will be reviewed and refreshed in a timely manner. It is essential that the CAM scheme is fully integrated with the wider public transport network to enhance the opportunities for all. Therefore, it is imperative that CAM delivers the following:

- CAM will be fully integrated and embedded within the public transport provision to ensure a high-quality network with appropriate interchange opportunities are provided;
- The scheme provides services and develop infrastructure that meets the needs of customers; the residents of, employees based within, and visitors to Cambridgeshire and Peterborough, whilst at the same time having regard to economy, efficiency, and effectiveness; and
- CAM will provide a high-quality, integrated passenger transport network to provide people, in both the urban and rural areas, with access to the opportunities and benefits that contribute to the enjoyment of a better quality of life.

Alignment to the Bus Reform Task Force

The Bus Reform Task Force (BRTF) was launched in early 2019 and is exploring the best operating and delivery model for our public transport network. It has three main workstreams: to establish an integrated framework to assess subsidy requirements, to identify and implement tangible short-term improvements to bus services, and to develop and examine the business case for a number of alternative delivery options for bus services in Cambridgeshire and Peterborough. CAM will be aligned with the conclusions from the BRTF that are due to be published in late 2020.

Alignment to emerging public transport schemes (such as East-West Rail and Cambridge South Station)

The Authority continues to explore opportunities to enhance strategic public transport accessibility and support growth through new infrastructure and the connectivity between the CAM and other public transport schemes and networks. The developments in the transport network need to be successfully planned to integrate with the CAM network and the EWR proposals. The interchange and connectivity between the two networks and the traditional bus network needs to be seamless to maximise the benefits of these complimentary modes to reduce the dependency on the private car by offering a real alternative and opportunity to the people of the region. This integration of modes will significantly reduce journey times to major

cities elsewhere, creating new opportunities for work and leisure for our residents while supporting expanding the labour market and Cambridgeshire and Peterborough's productivity.

East-West Rail

CAM should complement the new EWR link, serving the smaller communities that the heavy rail line will pass without stopping. It is important to consider how the EWR route relates to the CAM network, to maximise integration between modes and how they will interact. This interaction needs to be understood to ensure that the schemes genuinely complement each other thereby maximising the benefits for all. Providing appropriate and effective interchanges between CAM and EWR that are safe, accessible, sustainable and seamless to provide a fully integrated public transport network that maximises the "offer" between St Neots and Cambridge.

Cambridge South Station

A key element in the development of Cambridge South Station as a multi-modal interchange is understanding the requirements of the users, both existing and potential travellers and how this scheme will seamlessly interact with CAM.

Integration with emerging highways schemes (A428, A10, A505)

The Authority is currently developing schemes within the A428, A10 and A505 corridors and examining how connectivity can be improved along and through the corridor, with a particular focus on improving the "offer" to the people of Cambridgeshire and Peterborough. Any developments and/or improvements to the highway network needs to fully integrate with CAM to ensure a truly seamless network is delivered with adverse impacts minimised wherever possible. Therefore, as and when these schemes and others being developed by the Authority and the Greater Cambridge Partnership, it is essential that due consideration is given to CAM's requirements.

CAM 4: Promote sustainable growth and development

Integration with walking and cycling

- CAM interchanges with easy step free access will ideally located at either major attractors or generators of passengers and within 10 to 15 minutes' walk to key locations ensuring ease of access to major attractors;
- Pedestrian and cycling access should be designed to radiate from CAM stops; and
- Locating the CAM stops at the optimum location for accessibility helps to reinforce the sustainable transport message.

Programme

During 2018, the CPCA and the GCP delivered a Green Book compliant Strategic Outline Business Case (SOBC) for the CAM Network. The SOBC was approved by the CPCA Boards in March 2019. The organisations approved proceeding to an OBC to strengthen and clarify further the strategic rationale for the initiative, the expected economic benefits and costs, the approach to funding and financing the project, an analysis of how the programme could be taken to the market, and the approach to managing the scheme. This also included advancing the design and engineering feasibility of the scheme. The key project milestone to date are as follows:

Milestone (Draft)	Date
Cambridge Rapid Mass Transport Options Appraisal published	Dec 17
The Vision for Transport Report published	May 18
Strategic Outline Business Case (SOBC) published	Mar 19
Approval to develop Outline Business Case (OBC)	Aug 19
Public consultation on OBC	Feb – Mar 20

It is the intention that the Outline Business Case (OBC) for the CAM City Tunnel Section will be finalised during 2020.

Milestone (Draft)	Date
Findings from consultation and draft OBC report to the CAMs Board	Jul 20
Commence Environmental Impact Assessment (EIA) Activities	Mid – Late 20
Ongoing Consultation Activity	Aug 20 – Feb 21
Submission of Final OBC to DfT for review / approval	Late 20
Commence Financial Business Case (FBC)	March 21
Commence development of Transport Works Act (TWA) application	March 21
Submit Transport Works Act (TWA) application to the Secretary of State	Late 21 / Early 22

Findings from further consultation and draft FBC report to the CAMs Board	Early 23
Commence Procurement of Design and Construction Consortia	Jan 24
Determination stage commences	Late 21 / Early 22
Decision on the TWA application (24 Months assumed)	Late 23 / Early 24
Design and Construction starts	Late 24
Construction completed	End 29