Report
June 2022

Integrated Impact Assessment – Local Transport and Connectivity Plan

Tresor Consulting

Cambridgeshire and Peterborough Combined Authority

steer

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Non Technical Summary

Cambridgeshire and Peterborough Combined Authority is producing a refreshed Local Transport and Connectivity Plan (LTCP). Since the publication of the last Local Transport Plan in 2020 (2020 LTP), there have been several changes to local and national policy that meant this transport strategy needed to be revisited.

The revised vision reflects the importance of climate change and the need to level up the region in relation to health inequalities, social exclusion, and safety to ensure that the transport network provides enhanced access to opportunities that improve the quality of life for all. The LTCP comprises a number of goals, objectives, policies and projects.

An Integrated Impact Assessment (IIA) is being undertaken as part of the LTCP development so that environmental and social impacts are identified and mitigated as part of the updated plan. The IIA covers:

- Strategic Environmental Assessment (SEA), covering a range of environmental impacts.
- Habitats Regulations Assessment (HRA) which applies to sites which are internationally important for nature conservation.
- Community Impact Assessment (CIA) which assesses social impacts such as health and equalities.

This report documents the SEA process, but also draws on information from the other assessments so that they are integrated. The report focuses on changes to the 2020 LTP, the LTCP introduces new policies for connectivity and decarbonisation, and new projects, mainly under these new policies or to support active travel and public transport.

New policies for decarbonsiation and connectivity were assessed to have mainly positive environmental effects, particularly in relation to reducing road traffic, greenhouse gases and vulnerability to climate change. There were also positive effects for health and accessibility.

Policies and projects carried forward from the previous 2020 LTP which involve new infrastructure, particularly road and rail have potential negative effects from habitat loss and species disturbance, loss of agricultural land, water quality and flood risk issues, and effects on the setting of the historic environment and landscape character. Project impacts will largely depend on the location and design, as many of these are at an early stage of development. However, there are also opportunities for mitigation and environmental improvements.

The LTCP doesn't contain any new highways projects and additional projects supporting active travel, public transport, use of technology and alternative fuels will help to reduce carbon emissions and improve accessibility, air quality, safety and health. While these projects generally protect the natural and built environment, new infrastructure to support these projects can still have negative effects, for example on biodiversity, landscape, townscape and the setting of historic structures.

Mitigation has been proposed where there is potential for significant adverse effects, in addition to use of a number of indictors to monitor the effects of the LTCP.

1 Introduction

Background

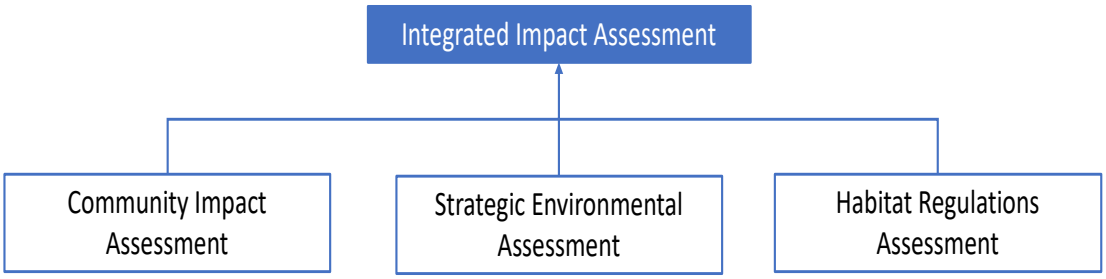
1.1 The Combined Authority for Cambridgeshire and Peterborough (CPCA) is producing a refreshed Local Transport and Connectivity Plan (LTCP). Since the publication of the last Local Transport Plan in 2020 (2020 LTP), there have been several changes locally in Cambridgeshire and Peterborough; in addition to revised national policy that meant the transport strategy needed to be revisited. These changes include the recommendations of the Cambridgeshire and Peterborough Independent Commission on Climate, new carbon dioxide (CO^2) and electric vehicle targets published by Government, policy development within the Oxford-Cambridge (OxCam) Arc, and the changes in travel caused by Covid-19.

1.2 An Integrated Impact Assessment (IIA) is being undertaken as part of the LTCP development. IIA combines several sustainability appraisal processes, so that environmental and social impacts are identified and mitigated as the plan develops.

Integrated Impact Assessment

1.3 The components of the IIA process for the LTCP are set out in Figure 1 below and each process is then briefly described.

Figure 1 Processes within this Integrated Impact Assessment.



Strategic Environmental Assessment (SEA)

1.4 SEA is used to describe the application of environmental assessment to plans and programmes in accordance with the "Environmental Assessment of Plans and Programmes Regulations" (SI 2004/1633, known as the SEA Regulations). The SEA Regulations place an obligation on local authorities to undertake SEA for certain plans and programmes which are likely to have significant effects on the environment, this usually applies to Local Transport Plans.

Habitats Regulation Assessment (HRA)

1.5 HRA is undertaken under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012, known as the Habitats Regulations) for plans or projects which are not directly connected to the management of the site and would be likely to have a significant effect on a European Site designated for nature conservation. These comprise Special Protection Areas (SACs), Special Protection Areas (SPAs) and Ramsar sites.

Community Impact Assessment (CIA)

1.6 The CIA incorporates a Health Impact Assessment (HIA) and an Equality Impact Assessment (EqIA). HIA is a process to identify the likely health effects of plans, policies or projects. EqIA is undertaken under the Equality Act 2010 to ensure that plans, policies or projects do not discriminate or disadvantage people. It applies to people with the following 'personal protected characteristics': age, disability, gender, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, and sexual orientation. Income is often included within EqIA as an additional consideration.

Purpose of Report

1.7 This report represents the SEA for the LTCP. It draws on information from the HRA and CIA[1] where there is over-lap with assessments of European Sites, health and equalities impacts. It draws on the extensive evidence base and IIA from the 2020 LTP which was undertaken 2018-2019. It summarises this information and provides updates to reflect the use of more recent information or changes. This report is set out over the follow sections:

- Section 2 provides an overview of the updated LTCP.
- Section 3 sets out the IIA methodology.
- Section 4 summarises up-to-date baseline information, future trends, and key sustainability issues and opportunities. It sets out a framework for assessing the LTCP.
- Section 5 details the updates to the assessment, including assessment of alternatives and cumulative effects.
- Section 6 sets out mitigation and monitoring.

[1] Mott MacDonald, May 2019, CPCA Local Transport Plan Community Impact Assessment (any updates will be provided with updated policies). Mott MacDonald, Dec 2019, CPCA LTP Habitats Regulation Assessment Task 1 Screening (n updated HRA will be sent to Natural England),

2 The Updated Plan

Background

2.1 The new Local Transport and Connectivity Plan (LTCP) aims to meet a range of challenges including on public health, accelerating carbon reduction, protecting the environment, the impact of Covid-19, access to jobs and education, reducing inequality and supporting economic growth.

2.2 The addition of 'Connectivity' to the plan, recognises the increasing influence that the internet has on transport. Working and learning, accessing leisure and services, and seeing friends and family have been increasingly done from home, impacting journeys. The plan also seeks ways to improve digital infrastructure to support these new ways of living.

Vision and Objectives

2.3 The revised vision reflects the importance of climate change and the need to level up the region in relation to health inequalities, social exclusion and safety, to ensure that our transport network provides enhanced access to opportunities that improve the quality of life for all. It is important that the work of the Combined Authority continues to develop its work in a compassionate, co-operative, and collaborative manner.

LTCP Vision

A transport network which secures a future in which the region and its people can thrive.

It must put improved public health at its core, it must help create a fairer society, it must respond to climate change targets, it must protect our environment and clean up our air, and it must be the backbone of sustainable economic growth in which everyone can prosper.

And it must bring a region of cities, market towns and very rural areas closer together.

It will be achieved by investing in a properly joined-up, net zero carbon transport system, which is high quality, reliable, convenient, affordable, and accessible to everyone. Better, cleaner public transport will reduce private car use, and more cycling and walking will support both healthier lives and a greener region. Comprehensive connectivity, including digital improvements, will support a sustainable future for our region's nationally important and innovative economy.

2.4 The LTCP comprises six goals and eleven objectives associated with as set out below, the connectivity goal and objective is new to the LTCP:

Figure 2 LTCP Goals

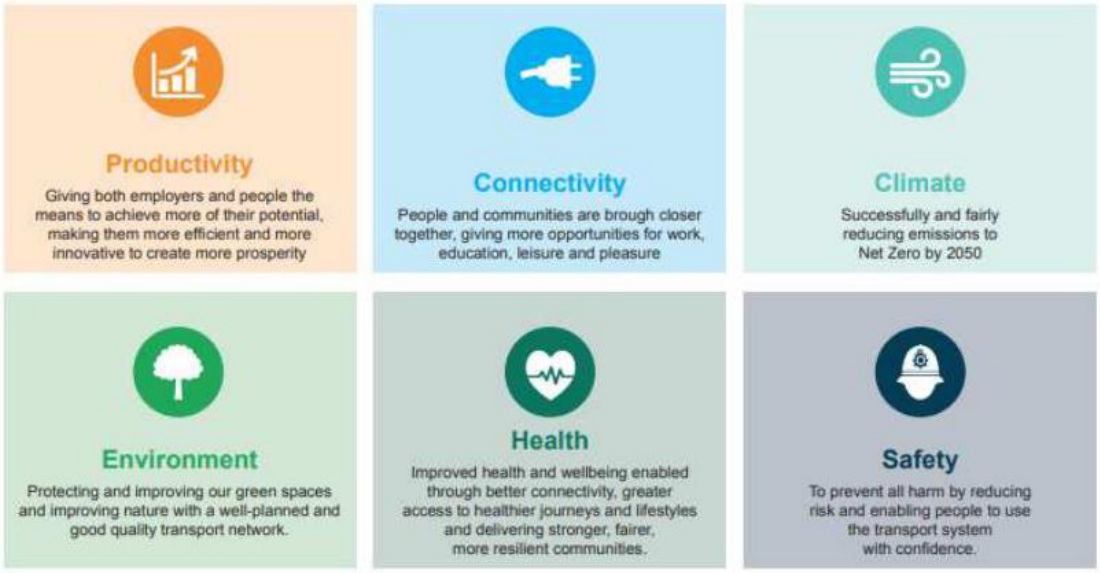


Table 1 LTCP Objectives

Goal	Objective	Objective Statement
Productivity	Housing	Support new housing and development to accommodate a growing population and workforce, and address housing affordability issues
Productivity	Employment	Connect all new and existing communities sustainably so all residents can easily access a good job within 30 minutes by public transport spreading the region's prosperity
Productivity	Business & Tourism	Ensure all our region's businesses and tourist attractions are connected sustainably to our main transport hubs, ports and airports
Productivity	Resilience	Build a transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability
Connectivity	Accessibility	Promote social inclusion through the provision of a sustainable transport network that is affordable and accessible for all
Connectivity	Digital	Communities are digitally connected, innovative technologies are supported and there is improved connectivity and mobility across the region.
Health	Health and Wellbeing	Provide 'healthy streets' and high-quality public realm that puts people first and promotes active lifestyles
Health	Air quality	Ensure transport initiatives improve air quality across the region to exceed good practice standards
Safety	Safety	Embed a safe systems approach into all planning and transport operations to achieve Vision Zero - zero fatalities or serious injuries
Environment	Environment	Deliver a transport network that protects and enhances our natural, historic and built environments

Climate	Climate change	Reduce emissions to 'net zero' by 2050 to minimise the impact of transport and travel on climate change

2.5 In addition to the previous policies aligned with the objectives in Table 1, the LTCP will include new policies on connectivity and decarbonisation. These are currently still under development.

2.6 The LTCP includes several new projects. Some of the projects from the 2020 LTP are no longer included, either because they are now complete or have not progressed. Table 2 below provides a comparison of projects in the two plans. It should be noted that some of the projects are being delivered by partners (e.g. Network Rail, National Highways).

Table 2 Comparison between LTP and LTCP Projects

Project type*	2020 LTP (no longer in LTCP)	In both 2020 LTP and LTCP	Projects new to LTCP
Road	• A47 Junction 18 improvements • A15 Paston Parkway Junction 22 to Glinton Roundabout • Stanground Access – junction improvements and dualling (completed) • North Westgate Redevelopment • A47 Wansford to Sutton • A16 Norwood Dulling • Frank Perkins Parkway Junction 4 - 5 widening • Hampton East Coast Main Line (ECML) Rail Crossing • Oxford to Cambridge Expressway and A428 Dualling • M11 'smart motorway' • Additional M11 Park and Ride capacity • Mill Road Railway Bridge Widening • A1 Baldock – Brampton capacity improvements • A1 Buckden roundabout capacity and safety improvements • Safeguarding of a future A141 northern Huntingdon bypass alignment • Huntingdon Third River Crossing • Dualling of the A10 between the A142 Witchford Road and the A142 Angel Drove • Queen Adelaide Road study	• A47 Dualling • A1 Wittering Improvement • A1139 Fletton Parkway Junction 3 – 3A • A505 Corridor Royston to Granta Park • Coldhams Lane roundabout improvements • Fengate Access Study - Phase 1 (Eastern Industries Access) • Fengate Access Study – Phase 2 (University Access) • King's Dyke Level Crossing • March Area Transport Study (MATS) • Wisbech Access Strategy • St Ives A141 (previously Safeguarding of future A141 bypass and other improvements) • A10 Ely to Cambridge • A142/Lancaster Way roundabout and the A142/A10 ('BP') roundabouts • A14 Junction 37 & 38 • Junction 21 of the A15 Paston Parkway • A1139 Fletton Parkway Junctions 3 and 3a • A605 – Junction 68 (Lynchwood Capacity Improvements) • A428 trunk road between the Black Cat roundabout on the A1 • A16 Norwood Improvements (A16 Norwood Dualling)	No new highways projects
Rail	• Werrington Dive Under • Huntingdon to Peterborough Four Tracking	• Cambridge South Station • Ely Area Capacity Enhancements	• Snailwell Loop (stand-alone)

	• Closure of level crossings • A10 Foxton Level Crossing • Newmarket to Cambridge Track Doubling • Electrification of Rural Rail Routes • Girton Interchange Improvements • Cambridgeshire Rail Capacity Study • Ely to Soham track doubling	• Regeneration of Fenland Railway Stations • Soham Station • Wisbech Rail • Peterborough Station Quarter • Fenland Stations • Cambridge South Station • East / West Rail (including second Rail Station at St Neots) • Newmarket West Chord (incl Snailwell Loop) • Waterbeach Station Relocation	
Public transport	• Sustainable Travel Improvements • Cambridge Autonomous Metro (CAM) • Rural Travel Hubs • High quality bus network infrastructure, St Ives (Busway) to Huntingdon • Bus access to North Ely development	• Bus Reform Task Force • Buses Reform • Queensgate Bus Interchange • Alconbury development • Waterbeach Public Transport Improvements • Cambridge South East Transport (previously part of CAM) • Cambridge Eastern Access (previously East Cambridge – Better Public Transport)	• ZEBRA - Zero Emission Buses • Future Bus Network 2030 • Demand Responsive Transport • Alternative bus station (HDC) • Cambourne to Cambridge Better Public Transport Project
Active travel	• Jesus Green Lock • St Neots River Great Ouse cycle bridge • St Neots northern link to Little Paxton • Pedestrian and cycle bridge – Henley Way to Merivale Way • Central March cycle bridge • Chisholm Trail Phase 1	• Active Travel Strategy and Schemes • A1134 Coldham lane cycle improvements • Green Wheel (previously Greenways) • Fletton Quays Footbridge • Crescent Bridge Pedestrian and Cycle Bridge • Chisholm Trail Phase 2	• E-scooter Trial and E-bikes • Thorpe Wood cycleway • First and last mile (including active travel)

Digital			• Digital Connectivity Strategy
Other	• Longstanton Park and Ride Expansion • Riverside Improvements Phase 2 between Priory Road and Stourbridge Common • Mitigation of Local Impacts of Waterbeach Development • Hartford transport interchange • Wyton Airfield Access • Improved parking and interchange facilities at Ely station • Improved parking and access facilities at Littleport station • Wisbech Garden Town feasibility studies	• City Centre Transport Vision – Peterborough • Milton and Histon Road Improvements • Making Connections (building on Choices for Better Journeys) – • Heavy Commercial Vehicle Strategy • Market Towns Programme & Ramsey improvements • Smart Cities Strategy – Peterborough • North Westgate regeneration	• EV Charging Schemes and Outcomes from AFVS • 20 is plenty • First and last mile (including freight)

- Project type may include elements of other modes, for example public transport schemes may include active travel measures

3 IIA Methodology

Strategic Environmental Assessment

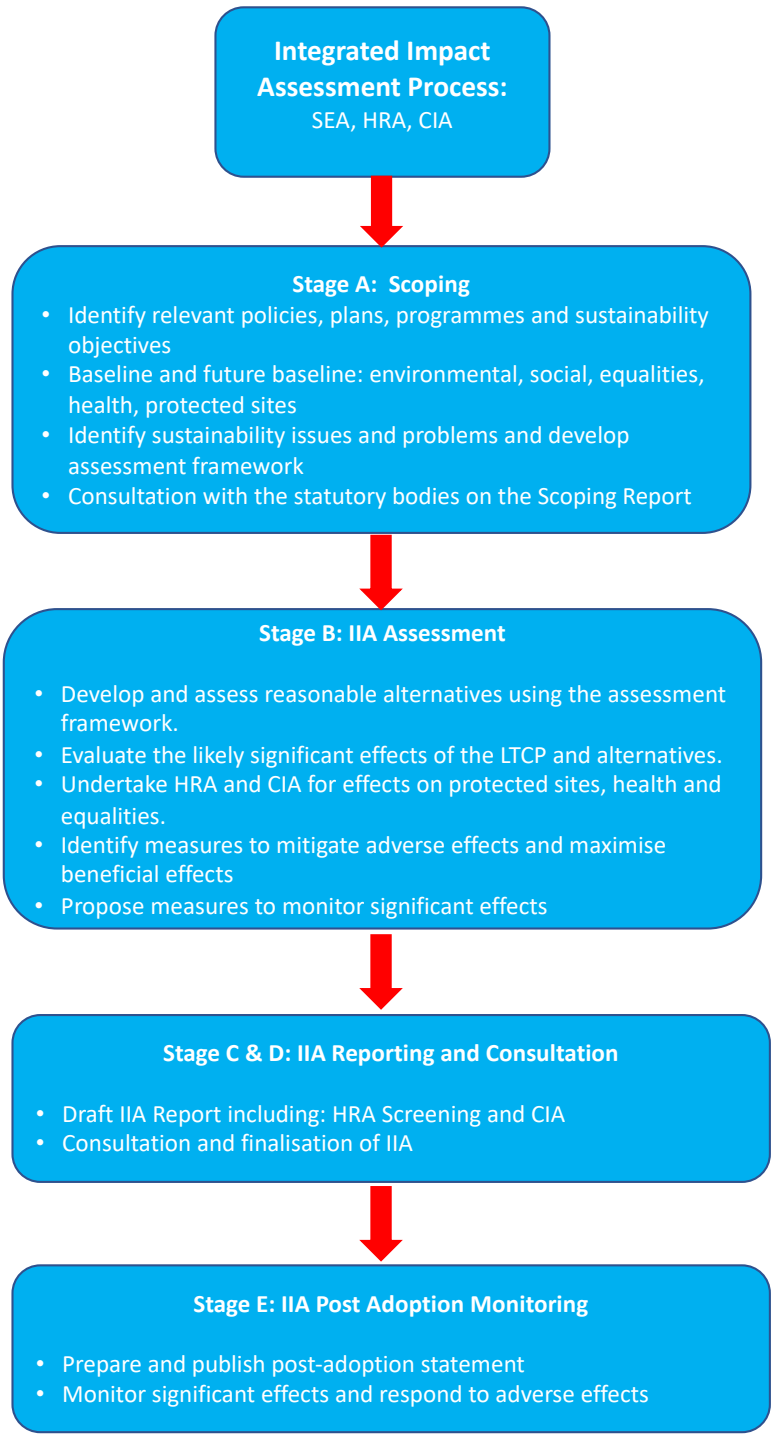
3.1 SEA is an iterative process of gathering data and evidence, assessment of environmental effects, developing mitigation measures and making recommendations to refine plans or programmes in view of the predicted environmental effects.

3.2 The approach adopted for the SEA of the LCTP follows that set out in Government Guidance[2] and meets the requirements of the SEA Regulations (see Appendix A for a checklist). It involves the development of an assessment framework comprising a series of SEA objectives, assessment criteria and indicators. This framework is developed from an understanding of environmental issues and opportunities identified through a review of existing baseline information and a review of other plans, programmes and environmental protection objectives relevant to the plan area.

3.3 Figure 3 shows how the SEA process was undertaken for the LTCP and based on the Government Guidance. It includes CIA and HRA inputs. This report is the product of Stages B and C, selecting and assessing options for the SEA and producing an Environmental Report for consultation.

[2] Government guidance on Strategic Environmental Assessment and Sustainability Appraisal available at: **https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal**

Figure 3 The IIA Process applied to the LTCP



Stage A: Scoping

3.4 A Scoping Report was issued in March 2022 and represents Stage A of the process described in Figure 3 above. This report sets the context and scope of the SEA through:

- An overview of the updated LTCP;

- Updated policies, plans, programmes and sustainability objectives which are relevant to the potential sustainability impacts of the LTCP;
- Up-to-date baseline information, future trends, and key sustainability issues and opportunities as well as a framework for assessment.

3.5 Consultation on the scope of the IIA was undertaken with the three consultation bodies (the Environment Agency, Historic England and Natural England). These organisations were consulted in March and April 2022. A summary of responses is presented in Table 3 below and a copy of responses is provided at Appendix B.

Table 3 Summary of scoping responses and how they have been addressed

Summary of Response	How this has been addressed
Historic England	
Reference to environment in the LTCP Vision should refer to natural and historic environment.	The objectives provide further definition of environment and the historic environment is included here.
Provision of a list of programmes, policies, plans and sustainability objectives.	The Appendix to Scoping Report has been updated and includes the majority of these references, where suggested references would provide detail for individual sites or baseline information, they would be applied to impacts on individual sites at project level.
Provision of sources of baseline information.	Some of these sources are included, however, some sources would be used to inform design stages of transport projects. Historic Landscape Characterisation for the CPCA Region is beyond the scope of this Plan.
Identification of key sustainability issues and opportunities.	Where these are relevant to transport, they have been included in Table 5.
Suggestions for objectives and criteria for assessment.	While there is one objective for each topic, the aspects raised have been considered where relevant to the transport assessment. While proximity to schemes is considered in the assessment, other indirect effects like visual effects and traffic are also considered in the assessment.
Consideration of alternatives and impacts.	In this case the 2020 LTP is the main alternative, and the major transport projects have been carried forward to the LTCP. The performance of both plans against the Historic Environment objective is similar (see paragraph 5.4 and Table 13).
Archaeology and other assessment methodologies	These have been included where applicable in mitigation set out in Table 16.
Natural England	
Support Vision and Objectives, goals to protect and enhance the natural environment and reduce emissions to net zero are welcome.	No action required.
Review of plans, policies and programmes – provision of sources of evidence.	Some of these sources are included, however, some sources would be used to inform design stages of transport projects.
Satisfied with baseline, SEA framework and methodology proposed, including update of HRA update.	No action required.

Stage B: Assessment

3.6 The SEA for the 2020 LTP assessed 10 policy themes and 60 projects. While some of these have changed in the LTCP, others have remained the same. New policies and projects have been assessed against the SEA Assessment Framework developed during Scoping. Using the SEA objectives, positive and negative environmental effects have been identified.

3.7 The results of previous assessments relating to policies and projects which remain in the LTCP are then summarised so that environmental effects of the entire LTCP are represented together. The results have also been compared with the 2020 LTP so that the relative performance of the two plans against the SEA Objectives are understood.

3.8 Where the assessment identifies likely significant effects, mitigation and monitoring is proposed.

Stages C & D: Reporting and Consultation

3.9 This report sets out the results of the SEA and constitutes the Environmental Report under the SEA Regulations.

3.10 An SEA Statement will be prepared following the consultation period to summarise how responses to consultation and the SEA has influenced the development of the updated LTCP.

Stage E: Monitoring

3.11 This report sets out recommendations for monitoring the environment effects of implementing the LTP in Section 6 of this report.

Assumptions and Limitations

3.12 The SEA Regulations require that any difficulties encountered during the assessment of the plan are described[3]. The CPCA covers six local authorities so data collected and assessment is undertaken at a strategic level over a wide geographic area. It uses readily available on-line data to identify key constraints and opportunities for the assessment. This reflects the strategic level of information in the LTCP.

3.13 The CPCA is the local transport authority for the region and will be responsible for planning and delivery of policies and some of the projects in the LTCP. However, some of the larger projects will be delivered by partners including National Highways and National Rail. These projects remain part of the LTCP and as such are assessed at a strategic level in the IIA. However, these projects will also be subject to environmental legislation, including environmental assessment, through their delivery it is not within the scope of the IIA to duplicate this process.

3.14 Projects within the LTCP are at different stages of delivery. Some are the subject of feasibility studies, others are undergoing project level design and application for consent, whereas others are consented and under construction. Therefore, varying level of detail is available. Where information such as geographical location is not available, uncertainty is identified in the assessment. Where projects are likely to have significant effects, further environmental assessment is applied as part of consenting. Although this SEA draws on this information

[3] The Environmental Assessment of Plans and Programmes Regulations 2004, SI 1633, Schedule 2 (8)

where it exists, assessments are generally produced to the same level of detail to aid consistency and comparison.

Community Impact Assessment

3.15 The Community Impact Assessment for the 2020 LTP assessed 10 policy themes. The CIA takes a similar approach to the SEA and assesses new policies. It also groups projects into different types for assessment. The CIA Report will present any new assessments of the changed policies once these have been developed, and a summary of the results of the previous assessment.

Habitats Regulations Assessment

3.16 Habitats Regulations Assessment has three stages:

i. Screening: to check if the plan or project is likely to have a significant effect on a Natura 2000 site's conservation objectives. If not, no further assessment is required.
ii. Appropriate Assessment – to assess the likely significant effects of the plan or project in more detail and identify ways to avoid or minimise any effects.
iii. Derogation – to consider if proposals that would have adverse effects on a European Site have an exemption. This comprises three legal tests: whether there are any feasible alternative solutions that are less damaging, if the plan or project is required for reasons of over-riding public interest, and that compensatory measures can be achieved.

3.17 A screening report was produced for the 2020 LTP and this identified 13 European Sites within the zone of influence of the LTCP. The screening concluded that there are no likely significant effects on any European Site arising through adoption of the 2020 LTP either alone or in combination with other reasonably foreseeable plans and projects.

3.18 In order to update the HRA, an updated Screening Report has been produced to determine:

- Any additional European Sites,
- Whether the changes to policies and projects are likely to have a significant effect on any of the site's conservation objectives, and
- Update to the plans and projects considered for in-combination effects.

4 Baseline and SEA Framework

Introduction

4.1 Under the SEA process, relevant 'policies, plans, programmes' are reviewed at the scoping stage[4] to identify key environmental objectives which are applicable to the assessment. A review of the baseline information and trends over the timeframe of the LTCP are used to identify sustainability issues and opportunities. This section provides a summary of updated baseline information, building on the information provided for the SEA for the 2020 LTP and supporting appendices[5].

Policies, Plans and Environmental Protection Objectives

4.2 Several key themes and objectives were summarised from the previous review of policies, plans and programmes:

- The importance of natural capital and ecosystem services.
- Conserve flora and fauna and their habitats
- Conservation and wise use of wetlands and their resources
- Protection of wild birds and their habitats
- Promote and achieve biodiversity net gain
- The creation and long-term provision of green infrastructure
- Protection of landscape character and quality
- Improve water quality so all waters achieve 'good status' as set out in the Water Regulations
- Prevent or limit inputs of pollutants into groundwater
- Reduce and manage the risks of flooding
- Reduce greenhouse gas emissions and improve air quality
- Adapt to the impacts of climate change
- Increase resource efficiency and reduce natural resource use and waste
- Promote sustainable and active modes of transport, accessible for all
- Improve the health and safety of transport
- Create a green economy and promote sustainable growth
- Promote sustainable and healthy communities
- Promote social inclusion and community participation

[4] Government guidance on Strategic Environmental Assessment and Sustainability Appraisal available at: **https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal**

[5] Mott MacDonald, May 2019, Cambridgeshire and Peterborough Combined Authority Local Transport Plan, Strategic Environmental Assessment – Environmental Report; Appendix B Review of Policies, Plans and Environmental Protection Objectives and Appendix D Baseline Review.

- Protect historic environment assets including archaeology and built heritage
- Protect best quality soils and agricultural land
- Improve health and wellbeing of communities and reduce health inequalities.

Summary of Environmental baseline

4.3 A summary of the updated baseline review is presented below.

Table 4 Summary of the baseline

Topic	Key points from baseline
Natural Capital	• Sources of information include the Ox-Cam Local Natural Capital Plan (LNCP) and Green Infrastructure Opportunity Mapping project undertaken for the Greater Cambridge Local Plan. • Natural Capital spans many of the environmental topics listed below. It includes biodiversity, soils and land-use, climate change, air and water quality, physical and mental health.
Population and Health	• Population is expected to increase to over 1 million by 2036 due to the planned housing growth, primarily in Cambridgeshire. • 20% of the population under 15, and 18.5% over 65; ethnicity is predominantly white, urban areas have higher proportion of BAME. • In terms of Indices of Multiple Deprivation, Peterborough is the most deprived authority in CPCA and is in the most deprived 20% in England. • Health issues and opportunities relating to transport include poor air quality and road safety, in addition to opportunities for improving health and inequalities through active travel.
Biodiversity	• There are designated sites for nature conservation across the CPCA, ranging from international to national and local importance. • There are also Ancient Woodlands, protected species and Priority Habitats and Species. • The Cambridgeshire's Green Infrastructure Strategy[6] identifies a 'Strategic Network' of GI priorities to provide or enhance GI to 2031 and there are opportunities for biodiversity net gain.
Historic Environment	• There are a number of designated heritage assets including Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and Conservation Areas. • There are also undesignated assets, historic landscapes and unknown archaeology.
Landscape	• There are no national designations for landscape but there is a large area of designated Greenbelt around Cambridge, designated to prevent urban sprawl into open countryside. • The region lies within the arable agricultural core of England which dominates the rural landscape and is reflected in the 'National Character Areas' within the CPCA.
Soil	• There are 11 nationally designated geological sites within the CPCA. • Due to the underlying geology, the soil is rich in nutrients and the area is predominantly 'best and most versatile' agricultural land.
Water	• Flood risk is a significant concern across the CPCA. Without flood defences, 34.5% of the Cambridgeshire and Peterborough area is at high risk of flooding.

[6] Produced by a partnership in June 2011: https://www.cambridge.gov.uk/media/2557/green-infrastructure-strategy.pdf

	• Cambridgeshire and Peterborough fall within the Anglian River Basin Management Plan, river catchments are the River Nene, River Welland, River Great Ouse, River Lark, and River Cam. Transport can contribute to poor river quality, through polluted run-off and altering the physical channel.
Air quality	• Air quality in the CPCA is varied and while in rural areas air quality is generally good, other areas have poor air quality due to transport or industry. • There are seven Air Quality Management Areas (AQMAs) designated because emissions from road traffic means that legislative objectives for air quality are not likely to be achieved.
Climatic factors	• Road transport accounts for a significant proportion of carbon emissions in Cambridge and Peterborough. • Climate change in the region means hotter temperatures, increased flooding and storms, all of which can affect transport.
Material assets	• The CPCA has an extensive transport network which supports the regional economy, it is well connected by road and rail. • Construction and management of transport infrastructure has the potential to use natural resources and generate waste.

Issues and Opportunities

4.4 Key issues and opportunities for the LTCP are identified in Table 5 below. These reflect issues and opportunities identified for the 2020 LTP and have been updated to reflect latest policy and guidance, baseline and comments from statutory consultees.

Table 5 LTCP Sustainability Issues and Opportunities

Topic	Issues	Opportunities
Natural Capital	There is potential for the LTCP to affect natural capital and the services the natural environment provides as set out under the topics below.	There is also the potential to enhance the region's natural capital through the LTCP, these are described under individual topics below.
Population, communities and human health	Travel by car and associated congestion can reduce the efficiency and reliability of the transport network, reduce accessibility, contribute to air quality and associated human health effects, and discourage investment and economic growth.	There are opportunities to ensure transport links are reliable and accessible for all; and promote active and sustainable modes of travel to reduce reliance on car use. There are opportunities to improve health through improving air quality, physical and mental health.
Biodiversity, flora and fauna	Transport infrastructure can directly or indirectly affect designated and non-designated sites, habitats and species through loss of land, disturbance and damage. Impacts include fragmentation of habitats, deposition from emissions to air, collision with road traffic and disturbance from physical presence, noise or lighting, including in some cases from pedestrians and cyclists insensitive areas.	The LTCP should seek to protect and enhance biodiversity. There are opportunities for biodiversity net gain, enhancing green infrastructure, promoting and sustainable design and increasing natural capital.
Historic Environment	Transport can affect designated and non-designated heritage assets and erode landscape/seascape/townscape character or quality, the historic environment and/or people's enjoyment	Transport has the potential to deliver heritage-led regeneration and supporting the vitality and viability of town centres

	of it. For example, traffic congestion, air quality, and noise pollution affects the historic environment.	It can help develop a stronger sense of place and local distinctiveness by informing design
Landscape	Transport infrastructure can affect the landscape and townscape character. New infrastructure, signage, lighting, traffic and noise are all sources of impact.	There is the opportunity to enhance green infrastructure and improve the quality of the built environment through infrastructure design and reducing vehicular traffic.
Soil	New transport infrastructure leads to the loss of soils which can have implications on biodiversity, flood management, water quality and carbon storage, particularly in relation to the lowland peat soils. It can also lead to soil contamination.	There are opportunities to maximise use of existing transport infrastructure to minimise impact from new land-take on soils and agricultural land.
Water	Transport can contribute to water pollution through spills and contaminated run-off. Transport infrastructure can also increase the impermeable layer, increasing the speed at which rainwater enters watercourses therefore contributing to flood risk.	There are opportunities to increase pollution protection and reduce flood risk through design, for example route alignments avoiding sensitive waterbodies or flood zones where possible and incorporation of Sustainable Drainage Systems.
Air	Increasing private vehicle use leads to congestion and air pollution, with associated impacts on human health and roadside vegetation.	There are opportunities to reduce emissions of nitrogen dioxide through providing efficient transport alternatives to the car, reducing congestion and encouraging alternative fuels including Electric Vehicles (EV).
Climatic factors	Transport is a significant source of carbon emissions and growth in journeys by road vehicles will increase emissions. Transport infrastructure is vulnerable to flooding. Climate change hazards, such as high temperatures and storms, can result in disruptions, delays and closure of transport modes.	The LTCP can contribute to climate change mitigation and adaptation measures. It plays a role in reducing carbon emissions, through reducing the need to travel by car. Provision of travel information and design of resilient transport networks provides adaptation to climate change.
Material assets	Increased housing and development can place additional pressures on the transport network resulting in construction of new transport infrastructure.	There is the opportunity to utilise existing transport infrastructure and minimise new infrastructure through improving digital connectivity and improving efficiency of connections to new and existing housing developments and key services.

SEA Framework

4.5 This section sets out the SEA Framework which will be used to assess the LTCP and alternatives. The SEA Framework is comprised of SEA Objectives and guide questions. The SEA Objectives are developed using:

- The review of policies, plans and programme in Section 3 and
- The baseline, trends and issues in Section 4.

4.6 The use of objectives is not a requirement of the SEA Regulations, but their use is a recognised method of assessing the effects of a plan. The SEA Framework is presented in Table 6 below.

Table 6 SEA Objectives

SEA Topic	LTCP SEA Objectives
Population, Communities and Human Health	1. Improve the health of the population and reduce health inequalities between areas and groups
	2. Improve the health and safety of the transport network, reducing the number of accidents and other incidents
	3. Improve accessibility to key services, employment and recreational areas for all areas of the community
	4. Support and contribute to local economic growth and competitiveness by delivering reliable and efficient transport networks
	5. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking
Biodiversity, Flora and Fauna	6. Protect and enhance biodiversity (including both habitat and species) and geodiversity at all levels
Historic Environment	7. Maintain, protect and enhance the historic environment, including archaeology and the historic landscape character
Landscape	8. Maintain, protect and enhance the diversity and distinctiveness of the landscape and townscape character
Soil	9. Protect and conserve the quality of soils, minimising the loss of agricultural/greenfield land, and seek to remediate contaminated land
Water	10. Protect and enhance the quality of the water environment
	11. Reduce the risk of flooding to transport infrastructure and minimise its contribution to flood risk
Air	12. Protect and improve local air quality, particularly in the AQMAs
Climatic Factors	13. Minimise greenhouse gas (GHG) emissions and reduce Cambridgeshire and Peterborough's contribution to climate change
	14. Reduce vulnerability to climate change by minimising the risk of flooding and effects from other climate hazards
Material Assets	15. Maximising the use and lifespan of existing transport infrastructure

5 SEA Assessment

Introduction

5.1 This section sets out the findings of the assessment as follows:

- Identification of alternatives to the LTCP, in this case the previous LTP.
- The assessment of LTCP Policies, both new policies and previous policies (Appendix C.
- The assessment of LTCP Projects, both new projects and previous projects (Appendix D).
- A comparison between the LTCP and previous 2020 LTP.

Identification of Alternatives

5.2 Four broad transport strategies were considered by Mott MacDonald in the development of the 2020 LTP[7]. Each strategy placed a different level of focus on investment and financial support for the highway network, bus and rail network, and walking and cycling network as follows:

- Strategy 1: 'Highway – max' – intensive investment in highway infrastructure, limited investment in public transport and walking/cycling.
- Strategy 2: 'Public Transport – max' – intensive investment in public transport, limited investment in walking/cycling, 'do minimum' investment in highways.
- Strategy 3: 'Managed demand' – limited investment in public transport and walking/cycling; 'do minimum' investment in highways.
- Strategy 4: 'Blended' – intensive investment in walking/cycling, with complementary, intensive investment in public transport and highway infrastructure dependent on local context and objectives, supported by demand management.

5.3 Strategy 4: 'Blended' was adopted for the 2020 LTP. This strategy provided the best balance of benefits against all the objectives – economic, social, and environmental. This blended approach has also been carried through to the LTCP.

5.4 The alternative to implementing the LTCP is to continue the adopted 2020 LTP. The 2020 LTP is aligned to the Strategic Spatial Framework (non-statutory) and Local Plans. Phase 1 of the Strategic Spatial Framework sets out how the CPCA will support the implementation of development strategies in Local Plans to 2036, so the 2020 LTP could reasonably remain in place without an update. As described in paragraphs 2.1 – 2.2 above, the main reasons for update is to reflect changes in environmental policy; travel patterns as a result of COVID-19, including increasing importance of digital technology; as well as addressing socio-economic challenges. This has led to additional policies and updated projects.

5.5 A summary of the assessment of the 2020 LTP is presented below:

[7] Mott MacDonald, January 2020, Cambridgeshire and Peterborough Combined Authority Local Transport Plan, Strategic Environmental Assessment – Environmental Report.

Summary of 2020 LTP

The SEA undertaken for the Cambridgeshire and Peterborough LTP has helped to identify the likely effects of the LTP policies and projects. The LTP strategy focuses on a range of significant capital investments in highway, public transport and walking and cycling infrastructure, designed to support a significant increase in travel demand (expected to be generated by significant new development) but tailored to the local geographic and travel context. Overall the LTP is likely to have significant positive social effects from increased accessibility (both affordability and connectivity), increased choice and reliability of sustainable transport modes, economic growth, and health benefits. The LTP promotes sustainable transport modes including low and zero emission vehicles which will help reduce transport-related emissions providing benefits for air quality, GHG reduction and health.

The LTP promotes new road and rail transport infrastructure which has the potential for positive or negative effects depending on the location of the projects and mitigation measures incorporated into the design. Negative effects could include habitat loss and fragmentation, death, injury or disturbance to species, visual impacts, damage to heritage assets an archaeology, effect on setting of heritage assets, land take including loss of agricultural land, and water pollution. There is also opportunity to provide positive effects through design and co-ordination with partners and other organisations, including habitat creation and enhancement, incorporation of green infrastructure, increased access to the natural and historic environment (although increased pressure on these assets would need to be managed), increased accessibility and connectivity, and facilitating economic growth. The LTP also contains policies that aim to reduce negative effects associated with transport infrastructure and protect and enhance the natural and built environment including requiring a Construction Environmental Management Plan (CEMP) and considering environmental protection and enhancement within project design. The SEA process has also resulted in mitigation and enhancement measures being identified for the LTP to strengthen environmental outcomes.

Mott MacDonald, 2020, Cambridgeshire and Peterborough Combined Authority Local Transport Plan – Strategic Environmental Assessment – Environmental Report, Non Technical Summary

Assessment of Policies

5.6 The policies from the 2020 LTP have all been carried forward to the LTCP and a summary of the previous assessment is presented below in Appendix C. There will be additional policies for digital connectivity and decarbonisation. The assessment for digital connectivity is based on the Digital Connectivity Strategy[8] and is presented in Table 7. The CPCA are in the process of developing decarbonisation policies so the assessment at this stage is indicative and presented in Table 8 and will need to be confirmed when the LTCP is updated following consultation. The assessment is based on the following scale:

[8] CPCA, 2021, Digital Connectivity Strategy 2021-2025: https://cambridgeshirepeterborough-ca.gov.uk/wp-content/uploads/documents/Strategies/digital-sector-strategy/Digital-Connectivity-Infrastructure-Strategy-2021-2025-Nov-2021.pdf

Assessment scale	Significance of effect
+++	Major positive effect
++	Moderate positive effect
+	Minor positive effect
0	Neutral or no effect
-	Minor negative effect
--	Moderate negative effect
---	Major negative effect
?	Requires further classification or mixed effects

5.7 Significance is determined using a range of factors, including the sensitivity of receptors, magnitude of effects, as well as professional judgement. Neutral and minor effects are not considered 'significant' in terms of the SEA Regulations.

Table 7 Assessment of Digital Connectivity Policies

Objective: Digital Connectivity

LTCP Policy Theme: Digital Connectivity

SEA Objectives	Policies				Summary of effects.
	Broadband	Mobile	Smart	Access & Inclusion	
1. Improve the health of the population and reduce health inequalities between areas and groups	+	++	++	++	Broadband infrastructure can improve access to healthcare and reduce health inequalities, it can also increase the divide for those that cannot afford the service. The Strategy includes public access Wifi provision and digital connectivity infrastructure for social housing residents. Increasing digital connectivity coverage can increase access to healthcare services, e.g. through 'tele-health', and also help with mental health and social isolation. While members of the public sometimes have health related concerns regarding mobile phone masts, however, there is no evidence of adverse helath effects within the current guidance[9]. New technologies can also support care by sensing e.g. if someone has fallen.
2. Improve the health and safety of the transport network, reducing the number of accidents and other incidents	0	0	0	0	Digital connectivity policies are unlikely to affect safety on the transport network.
3. Improve accessibility to key services, employment and recreational areas for all areas of the community	+++	+++	++	++	Target of 85% gigabit-capable broadband by 2025. 95% of adults have access to a mobile phone while Ofcom reported that in 2020, the vast majority (85%) of all adults used a smartphone to go online for a wide range of activities, including socialising, shopping, home working, banking, healthcare and entertainment. This can be improved through initiatives

[9] https://www.gov.uk/government/publications/mobile-phone-base-stations-radio-waves-and-health/mobile-phone-base-stations-radio-waves-and-health

					such as public Wifi in Peterborough City Centre, CambWifi amd connectivity for social housing.
4. Support and contribute to local economic growth and competitiveness by delivering reliable and efficient transport networks	+/-	++	++	0	Integrating fibre ducting in transport and other infrastructure schemes, means a 'dig once' approach. However, there is also short term disruption, including road closures from installation of fibres. Mobile and smart technology provides information to users of all transport modes which improves journey choices and efficiency.
5. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking	+++	+++	+++	0	While digital connectivity can avoid the need to travel by car, mobile connectivity is also an important underpinning technology to improve bus services. To be successful, Demand Responsive Transport (for example, for booking public transport online) and new travel hubs will need travellers to be able to book, track services and understand disruptions to give the best possible customer experience. Better real-time travel information can help residents make more sustainable journeys.
6. Protect and enhance biodiversity (including both habitat and species) and geodiversity at all levels	0	?	?	0	Broadband infrastructure largely ustilises routes of existing services – commonly using pavements and streets. Where small areas outside these are affected, any effects would need to be mitigated, e.g. through reinstatement.
7. Maintain, protect and enhance the historic environment, including archaeology and the historic landscape character	0	---	0	0	Broadband infrastructure largely ustilises routes of existing services – commonly using pavements and streets. Where small areas outside these are affected, any effects would need to be mitigated, e.g. through reinstatement. Upgrading of mobile masts and new masts for 4G and 5G operators requires taller structures (18-20m) and this can affect the setting of historic assets.
8. Maintain, protect and enhance the diversity and distinctiveness of the landscape and townscape character	0	---	0	0	Broadband infrastructure largely utilises routes of existing services – commonly using pavements and streets. Where small areas outside these are affected, any effects would need to be mitigated, e.g. through reinstatement. Upgrading of masts and new masts for 4G and 5G operators requires taller structures (18-20m) and this can affect landscapes and townscapes. 'Street clutter' can also result from deployment of small cells, infrastructure sharing (e.g. multi-use poles) can help mitigate these effects.

9. Protect and conserve the quality of soils, minimising the loss of agricultural/greenfield land, and seek to remediate contaminated land	0	-/+	0	0	Broadband infrastructure largely utilises routes of existing services – commonly using pavements and streets. Where small areas outside these are affected, any effects would need to be mitigated, e.g. through reinstatement. New masts for 4G and 5G. Agricultural IoT devices will allow farmers to better measure crop health.
10. Protect and enhance the quality of the water environment	0	0	++	0	Broadband infrastructure largely utilises routes of existing services – commonly using pavements and streets. Where small areas outside these are affected, any effects would need to be mitigated. Monitoring of water usage and flooding, allowing better management regimes to lower water consumption
11. Reduce the risk of flooding to transport infrastructure and minimise its contribution to flood risk	0	0	0	0	Broadband infrastructure unlikely to reduce risk of flooding or contribute to flood risk.
12. Protect and improve local air quality, particularly in the AQMAs	0	0	+	0	Broadband infrastructure unlikely to affect air quality. There may be some temporary congestion during road works to install fibres, but this is considered neglgible. In future, air quality sensors can measure pollution, informing policies to reduce the impact on residents' health.
13. Minimise GHG emissions and reduce Cambridgeshire and Peterborough's contribution to climate change	++	++	++	+	Digital connectvity can reduce journeys by car and other forms of transport, reducing GHG emissions, although emissions from use of data remain. Increasing the number of people who can access this information has potential to further reduce GHG emissions.
14. Reduce vulnerability to climate change by minimising the risk of flooding and effects from other climate hazards	++	++	++	+	Telecommunications is one of 13 sectors overseen by Government as part of the Critical National Infrastructure (https://www.ncsc.gov.uk/section/private-sector-cni/cni) and systems can be at risk from extreme climate events. However digital connectvity can improve reilience by providing information regarding climate events, such as flood alerts, and enable the population to take mitigative actions. Increasing the number of people who can access this information, increases resilience.
15. Maximising the use and lifespan of existing transport infrastructure	+	-	+	0	Integrating fibre ducting in transport maximises existing use of infrastructure. Requirement for new infrastructure including masts. In

					order to reduce this requirement, there is an opportunity for multi-use poles to integrate small cell mobile coverage and wifi access points with street lighting and other functions.

Table 8 Assessment of Decarbonisation Policies

Objective: Climate

LTCP Policy Theme: Decarbonisation (policies to be confirmed)

SEA Objectives	De-carbonisation	Summary of effects.
1. Improve the health of the population and reduce health inequalities between areas and groups	+ ?	Policies for decarbonisation have potential for health benefits including increased active travel and improved phyiscal and mental health; and reduced traffic emissions, which can benefit air quality and respiratory disease. There is also improved wellbeing associated with tackling climate change, which can reduce anxiety. The extent of these effects, for example replacing car travel with other modes, will depend on policies so there is some uncertainty.
2. Improve the health and safety of the transport network, reducing the number of accidents and other incidents	0?	Policies for decarbonisation are unlikely to contribute directly to improved health and safety.
3. Improve accessibility to key services, employment and recreational areas for all areas of the community	0?	Policies for decarbonisation are unlikely to directly improve accessibility.
4. Support and contribute to local economic growth and competitiveness by delivering reliable and efficient transport networks	0?	Policies for decarbonisation are unlikely to affect reliability of transport network in relation to economic growth and competitievness.
5. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking	+++?	Policies for decarbonsiation will need to focus on reducing travel by car and improving sustainable modes of transport.

6. Protect and enhance biodiversity (including both habitat and species) and geodiversity at all levels	+?	Policies which reduce greenhouse gas emissions will help mitigate climate change, this is likely to reduce the impact of environmental changes (for example seasonal changes and reproduction, flooding and water scarcity, predation and availability of prey, change in habitats, extreme weather events etc) which will affect biodiversity. Reduced emissions will also reduce deposition of nitrigen dioxide and also potentially particular matter.
7. Maintain, protect and enhance the historic environment, including archaeology and the historic landscape character	+?	Policies for decarbonisation are unlikely to directly affect the historic environment, although indirectly, reduced traffic (congestion, noise and emissions to air) may improve the setting of heritage assets.
8. Maintain, protect and enhance the diversity and distinctiveness of the landscape and townscape character	+?	Policies for decarbonisation are unlikely to directly affect landscape and townscape, although indirectly, reduced traffic (congestion, noise and emissions to air) may improve the setting of heritage assets.
9. Protect and conserve the quality of soils, minimising the loss of agricultural/greenfield land, and seek to remediate contaminated land	0?	Policies for decarbonisation are unlikely to affect soils and greenfield land.
10. Protect and enhance the quality of the water environment	0?	Policies for decarbonisation are unlikely to water resources.
11. Reduce the risk of flooding to transport infrastructure and minimise its contribution to flood risk	+?	Policies which reduce greenhouse gas emissions will help mitigate climate change, including impacts such as flooding.
12. Protect and improve local air quality, particularly in the AQMAs	+?	Decarbonisation policies which reduce travel by car have the potential to improve air quality through reduced emissions. However, use of alternative fuels (EV) may still affect air pollution from some particulate matter (tire wear and road surfaces), so the extent will depend on the nature of the policies.
13. Minimise GHG emissions and reduce Cambridgeshire and Peterborough's contribution to climate change	+++?	Minimising greenhouse gas emissions is central to the inclusion of decarbonisation policies.
14. Reduce vulnerability to climate change by minimising the risk of flooding and effects from other climate hazards	++?	Policies which reduce greenhouse gas emissions will help mitigate climate change, including extreme weather and impacts such as flooding.

15. Maximising the use and lifespan of existing transport infrastructure	0?	Decarbonisation policies are unlikely to affect existing transport infrastructure alone, any impacts of developing new infrastructure for sustainable transport modes would be captured in project level assessments.

Assessment of LTCP Projects

5.8 Table 2 (Updated LTCP projects) sets out the projects which have been carried over from the previous 2020 LTP and projects which are new to the LTCP. New projects have been assessed in Table 9- Table 12. The assessment of projects from the 2020 LTP is in Appendix D. The assessment scale is the same as that applied to policies above.

Table 9 Assessment of Snailwell Loop

Intervention name	Snailwell Loop
Intervention type	Rail
Description	To develop a business case in collaboration with partners for the reinstatement of this line which not only connects communities but provides resilience in part of the rail network currently under extreme strain. Reopening the 'Snailwell Loop' would provide a direct service between Newmarket and Cambridge by reinstating a portion of the line removed in 1965. This would allow passengers to travel from Soham direct to Cambridge without changing at Bury St Edmunds or Ely.
Local Authority/ Location	East Cambridgeshire/ Snailwell
Current status	Feasibility/ Business case
baseline	Chippenham Fen (Special Area of Conservation, Ramsar site, National Nature Reserve) – 3km north Newmarket Heath Site of Special Scientific Interest – 800m Southeast Entrance drive to Chippenham Hall Park and Garden (Grade II Listed) – 600m East

SEA Objectives	Assessment	Summary of effects.
1. Improve the health of the population and reduce health inequalities between areas and groups	+	Provision of public transport, reduced emissions to air and related respiratory problems.
2. Improve the health and safety of the transport network, reducing the number of accidents and other incidents	0	
3. Improve accessibility to key services, employment and recreational areas for all areas of the community	+++	Connects communities – Soham (assuming new rail station) would have a direct link to both Newmarket (no current connection) and Cambridge (currently need to change at Ely) to provide better access to jobs, education, health care and other services.

4. Support and contribute to local economic growth and competitiveness by delivering reliable and efficient transport networks	++	Soham, including 2,300 new homes proposed on the eastern and southern edges of the town, would benefit from the reinstatement, alongside a new rail station, allowing direct access to Cambridge.
5. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking	++	Providing a car-free alternative to the City of Cambridge, reducing traffic and congestion.
6. Protect and enhance biodiversity (including both habitat and species) and geodiversity at all levels	+/-	There is no anticipated impact on Newmarket heath SSSI designated for calcareous grasslands, which lies on the other side of the Bury St Edmonds rail line and A1304 from the proposed Snailwell Loop. The disused route will be utilised and is surrounded by intensive agriculture, playing fields and horse paddocks. There are may be opportunities to enhance green infrastructure through improving connectivity of hedgerows adjacent to the line, which may also be impacted during reinstatement works. Any impacts on protected species would need to be identifies and mitigated as part of project implementation.
7. Maintain, protect and enhance the historic environment, including archaeology and the historic landscape character	0	The Snailwell loop is separated from the entrance to the Chippenham Hall by the Cambridge to Bury Line (which also croses the 3.2km drive), so is not expected to introduce new infrastructure into the setting of registered gardens. Potential for some increased noise from intermittant rail movements, however, in the context of existing rail movements and traffic on the A1304 and A14, this is not anticipated to be significant. There are no oher designated assets likely to be affected by the proposal, which follows a disused line. There are limited opportunities to enhance heritage assets due to the nature and location of the proposal, although there may be wider positive effects of connecting communities with the historic centres of Cambridge and Newmarket.
8. Maintain, protect and enhance the diversity and distinctiveness of the landscape and townscape character	0	The project lies within the Brecks National Landscape Character Area, no designated landscapes would be affected. The reinstatement of existing linear feature would not have a signifcicant adverse effect. There may be opportunities to enhance green infrastructure through improving connectivity of hedgerows adjacent to the line, which may also be impacted during reinstatement works.
9. Protect and conserve the quality of soils, minimising the loss of agricultural/greenfield land, and seek to remediate contaminated land	+	The project uses an existing route, minimising impact on agricultural and other greenfield land. The existing line is likely to contain some contamination, there may be an opportunity to ensure that continued use is consistent with land quality.

10. Protect and enhance the quality of the water environment	0	There are no main rivers crossed by the proposal but the Watercourse lies approximately 1.5km to the southwest in Newmarket. There is likely to be some existing contamination along the former rail line, and pollution prevention measures would need to be taken during construction to prevent contaminated run-off.
11. Reduce the risk of flooding to transport infrastructure and minimise its contribution to flood risk	0	The line is within Flood Zone 1 (less than 1 in 1000 risk of flooding) and does not introduce new areas of hardstanding or other sources of flood risk.
12. Protect and improve local air quality, particularly in the AQMAs	++	The project will provide a direct line to Cambridge, reducing traffic emissions that contribute to the Cambridge AQMA.
13. Minimise GHG emissions and reduce Cambridgeshire and Peterborough's contribution to climate change	++	The project will reduce carbon emissions from road traffic and will not signficiantly increase emissions from rail.
14. Reduce vulnerability to climate change by minimising the risk of flooding and effects from other climate hazards	0	Sections of the line between Soham and Cambridge cross Flood Zone 1, so the project would not improve resilience, although there is no negative impact on existing resilience to climate hazards.
15. Maximising the use and lifespan of existing transport infrastructure	+++	The reuse of disused rail line makes best use of existing infrastructure, minimising environmental impact.

Table 10 Assessment of Cambourne to Cambridge Bus Improvement Scheme

Intervention name(s)	**Cambourne to Cambridge**
Intervention type	Public Transport, Active Travel
Description	A new route, bypassing other road traffic, will provide a public transport alternative to avoid congestion and make quicker journeys, with provision for walking and cycling, in addition to a new travel hub (Scotland Farm) including park and ride off the A428/A1303
Local Authority/ Location	Cambridge and South Cambridgeshire
Current status	Design – Preparation of planning application, Environmental Impact Assessment, Habitats Regulations Assessment

Baseline	Outline Business Case January 2020 for assessments[10] • Designated sites for nature conservation: Eversden and Wimpole Woods SAC is located approximately 6.5km to the south; Madingley Wood SSSI 0.9km to the east; Caldecote Meadows SSSI is 1.6km to the south; Hardwick Wood SSSI is 1.7km to the south • Undesignated sites: Madingley Slip Road RSV County Wildlife Site (CWS) to the north of the Phase 2 route opposite the Long Road/St Neots Road junction – separated from the proposed scheme by the existing carriageway of A428; Bucket Hill Plantation Grassland CWS – 0.9km to the south on Bourn Airfield; and Scrubland east of the M11 CWS – within the footprint of Phase 1 of the scheme • Landscape: Part of the route is within designated greenbelt • Listed Buildings: numerous buildings including settings of St Peters Church in Cotton and the American Cemetery on Madingly Hill • Conservation Areas: Coton Village and West Cambridge

SEA Objectives	Assessment	Summary of effects.
1. Improve the health of the population and reduce health inequalities between areas and groups	++	A Social Impact Appraisal was undertaken as part of the Outline Business Case (OBC). Assessment of physical activity found there was a moderate beneficial effect, as part of the scheme encourages walking and cycling. A Distributional Impact Appraisal was also undertaken for the OBC, to consider the variance of transport intervention impacts across different social groups, seeking to identify those social groups that would be

[10] Mott MacDonald, 2020, Outline Business Case and supporting assessments. **https://www.greatercambridge.org.uk/asset-library/Transport/Transport-Projects/C2C/C2C-OBC-Jan-2021/C2C-Jan-2020-App-2-Non-technical-summary-report.pdf** and current consultation: https://consultcambs.uk.engagementhq.com/c2c-eia-2022

		adversely or beneficially disproportionately impacted by the intervention. The scheme has been assessed as mostly generating positive impacts across the social groups identified.
2. Improve the health and safety of the transport network, reducing the number of accidents and other incidents	+	A Social Impact Appraisal was undertaken as part of the OBC. Assessment of accidents found there was a slight beneficial effect, the scheme provides a designated route for pedestrians and cyclists.
3. Improve accessibility to key services, employment and recreational areas for all areas of the community	+	A Social Impact Appraisal was undertaken as part of the OBC. Assessment of accidents found there was a slight beneficial effect.
4. Support and contribute to local economic growth and competitiveness by delivering reliable and efficient transport networks	++	The proposed scheme would significantly improve East-West connectivity and presents an opportunity to support Cambridge's growing population and workforce in conurbations to the west of the city, whilst managing the growing travel demand. The project would help to connect such growing communities, whilst enabling them to evolve and access the increasing number of jobs and opportunities in the city and on its periphery.
5. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.	+++	The scheme provides alternative travel options to the car. Analysis of journey times for the OBC found that the scheme particularly benefited the morning traffic peak with buses being more reliable and a journey savings time of approximatly 20 minutes. This will help encourage commuters to use buses.
6. Protect and enhance biodiversity (including both habitat and species) and geodiversity at all levels	- -	The route avoids all sites protected for ecological purposes except where it crosses the City Wildlife Site on the eastern side of the M11. This narrow protected site has relatively poor value scrub which would be impacted by the loss of about 110m of scrub where the route crosses it. A Habitats Regulations Assessment will be undertaken as part of the project design and consenting due to potential for loss of supporting bat habitat for Eversden and Wimpole Woods Special Area of Conservation (SAC). There are known protected species near the impacted area but they are not resident on or adjacent to the scheme and measures will be put in place to prevent their harm during construction or operation of the route. The remainder of the route impacts on habitat of value as it crosses Coton Orchard and around the Waterworks site at Madingley. There are also a number of trees that will be lost, including TPOs and the route will need to be designed to minimise loss. A biodiversity net gain assessment has been carried out on the initial design of the scheme, which showed that with the mitigation opportunities that exist along the route there is potential for significant net gain to be derived from the project.
7. Maintain, protect and enhance the historic environment, including archaeology and the historic landscape character	- -	The setting of the Coton listed buildings and conservation area is likely to be impacted by the introduction of the new infrastructure through the rural edge of the village. This indirect impact will reduce over time with the introduction of new planting to soften the visibility of the new route. The potential for buried archaeology along

		the route and further investigation required prior to construction will be undertaken to confirm the presence of archaeology.
8. Maintain, protect and enhance the diversity and distinctiveness of the landscape and townscape character	- -	Where the route uses existing highways within Camborune and follows existing routes, the landscape and townscape is negligible or reduced. However, offroad sections of the route cross open rural landscape and the segregagted route will result in the loss of existing vegetation. With appropriate design features and planting it is considered the impact will be moderate adverse initially, improving over time to be minor adverse – but the final assessment will be confirmed in the EIA process.
9. Protect and conserve the quality of soils, minimising the loss of agricultural/greenfield land, and seek to remediate contaminated land	-	The offroad sections of the route and travel hub will require greenfield land-take. The project would seek to minimise land take, whilst ensuring that the extent is sufficient for the purposes of the construction and operation of the project.
10. Protect and enhance the quality of the water environment	0	The route crosses no main rivers and has no direct impact on any users of surface or groundwater in the area. There are no source protection zones (defined around public water supplies from groundwater) crossed by the route.
11. Reduce the risk of flooding to transport infrastructure and minimise its contribution to flood risk	0	The route has no impact on any flood zones and will not impact on the Bin Brook on Adams Road as on this section the route will not affect the existing highway and drainage network. Drainage along the route will be designed to incorporate sustainable urban drainage wherever possible and measures to introduce elements of natural flood management will be considered as well.
12. Protect and improve local air quality, particularly in the AQMAs	0	Poor air quality in the Cambridge AQMA is largely due to vehicle traffic, so any scheme that seeks to reduce the number of vehicles entering the city centre should bring benefits to air quality. Along the route itself the number of buses that will operate are not sufficient to create a poor air quality risk. However, during the EIA the air quality implications of the scheme will be modelled to consider the changes in traffic more widely and along the route itself.
13. Minimise GHG emissions and reduce Cambridgeshire and Peterborough's contribution to climate change	++	The scheme is a key part of the strategy to achieve such modal shift by providing high quality public transport. In creating this option for travel there will be some embedded carbon implications of any construction works. Therefore one element of the design decision will be to minimise the carbon footprint of the construction works. During operation the carbon footprint of the scheme will be further minimised by requiring operators to use vehicles that achieve minimum standards in CO2 emissions. Operators will also be encouraged to consider alternative hybrid or electric powered vehicles.

14. Reduce vulnerability to climate change by minimising the risk of flooding and effects from other climate hazards	+	The route is within Flood Zone 1 so less suseptible to flooding, however, it remain vulnerable to other climate hazards such as high winds and temperatures.
15. Maximising the use and lifespan of existing transport infrastructure	+/ --	While the scheme does use existing highway within Cambourne, there are substantial sections where a new route is created.

Table 11 Assessment of Active Travel Schemes

Intervention name(s)	**E-scooter Trial and E-bikes; Thorpe Wood cycleway; Active Travel Strategy, First mile/ last mile**
Intervention type	Active travel
Description	The CPCA have been successful in the latest round of bidding from central government for active travel improvements, including cycling and walking improvements. Cambridge participated in the Department for Transport (DfT) e-scooter trial schemes, which commenced in 2020 and are due to end in November 2022. For 2022/23 the expansion of the E-bike service across Cambridgeshire and Peterborough will be considered. The Active Travel Strategy provide a comprehensive set of policies that will enable quality provision of active travel infrastructure and initiatives in Cambridgeshire to contribute to the County Council's target to achieve Net Zero Carbon by 2045.
Local Authority/ Location	Regional with individual schemes at specific locations.
Current status	Feasibility
Baseline	Location dependent

SEA Objectives	**Assessment**	**Summary of effects.**

1. Improve the health of the population and reduce health inequalities between areas and groups	+++	Active travel improves public health through encouraging greater physical activity, improving mental health and providing cleaner and safer environments. The e-scooter scheme so far has tracked enthusiasm for more than 224,000 trips and has been used by more than 36,000 active users.
2. Improve the health and safety of the transport network, reducing the number of accidents and other incidents	- / +++	While there is a risk of accidents for pedestrians, cyclists and other active travellers, these schemes have integrated safety measures. For e-scooters and e-bikes there is guidance on safe use including use of helmets, 18 age requirement and not using on pavements.[11] New cycle routes provide safer alternatives to existing road use through demarcation and segregation.
3. Improve accessibility to key services, employment and recreational areas for all areas of the community	++	The development of cycling infrastructure and connecting the infrastructure to other modes of public transport is likely to increase accessibility. The CPCA has led on social prescribing proposals to improve connectivity between communities and medical centres.
4. Support and contribute to local economic growth and competitiveness by delivering reliable and efficient transport networks	+	Evidence has demonstrated the uptake of active travel options within the CPCA, for example e-bikes and e-scooters. These projects have the potential for economic growth through increased tourism, access for commuters to employment and use of freight bikes.
5. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking	+++	Projects which promote active travel as a viable and sustainable mode of transport are likely to reduce the need to travel by car, therefore reducing road traffic and congestion. For example, In the first 10 months of the Cambridge e-scooter trial, it is estimated that 73,000 fewer car journeys have taken place.
6. Protect and enhance biodiversity (including both habitat and species) and geodiversity at all levels	+	Reducing car traffic can have benefits for vegetation adjacent to roads due to decrease in deposition of air pollutants.
7. Maintain, protect and enhance the historic environment, including archaeology and the historic landscape character	- / +	There is potential for minor impacts on heritage, for example, visual impact from new cycle lanes or 'street clutter' from e-bikes and scooter. However, this is reduced through design and siting, and reductions in car traffic improve the setting of heritage assets as well as reduce deposition of particulates from air pollution.

[11] https://www.cambridgeshire.gov.uk/news/guidance-issued-on-safe-use-of-e-scooters-and-e-bikes-in-cambridgeshire

8. Maintain, protect and enhance the diversity and distinctiveness of the landscape and townscape character	-/ +	There is potential for minor impacts on townscape and landscape for example, visual impact from new cycle lanes or 'street clutter' from e-bikes and scooter, or loss of vegetation. However, this is reduced through design and siting, and reductions in car traffic improve townscape/ landscape as well as reduce deposition of particulates from air pollution.
9. Protect and conserve the quality of soils, minimising the loss of agricultural/greenfield land, and seek to remediate contaminated land	0	These active travel projects are unlikely to affect soils.
10. Protect and enhance the quality of the water environment	0	These active travel projects are unlikely to affect the quality of the water environment
11. Reduce the risk of flooding to transport infrastructure and minimise its contribution to flood risk	0	These active travel projects are unlikely to affect flood risk
12. Protect and improve local air quality, particularly in the AQMAs	+++	Active travel alternatives are likely to have a major positive effect on air quality due to reduced car use. Information gathered by the CPCA on use of e-bikes has shown the total number of journeys completed on the 300 active e-bikes alone comprises a total 65,975kms (Oct 2021) and supports improved air quality through ultra-low emission travel.
13. Minimise GHG emissions and reduce Cambridgeshire and Peterborough's contribution to climate change	+++	There is likely to be a major positive effect on reduction of GHG emissions, from the reduction of vehicle emissions. In the first 10 months of the Cambridge e-scooter trial, it is estimated that 73,000 fewer car journeys have taken place which equates to a 66-tonne reduction in Carbon Dioxide emissions.
14. Reduce vulnerability to climate change by minimising the risk of flooding and effects from other climate hazards	0	These active travel projects are unlikely to affect vulnerability to climate change effects.
15. Maximising the use and lifespan of existing transport infrastructure	+	Active travel schemes largely use existing infrastructure.

Table 12 Assessment of Other Schemes

Intervention name(s)	**EV Charging Schemes and Outcomes from AFVS; 20 is plenty; ZEBRA – Zero Emission Buses; Future Bus Network; Demand Responsive Transport; Huntingdon Bus Station**
Intervention type	Public Transport, Other – Technology, fuels, etc.
Description	The Combined Authority and New Anglia LEP have commissioned an **Alternative Fuels Strategy** (AFS) for East Anglia and include battery, electric, hydrogen fuel cell and renewable natural gas vehicles. It looks at how uptake can be boosted including requirement for **EV Charging** infrastructure. The **20's Plenty** scheme reduces vehicle speeds; **ZEBRA** – Funding for 30 Zebra buses as part of the Zero Emissions Bus Regional Area programme. **Future Bus Network 2030** - public transport network that will better connect the places where people currently live and work, as well as encompassing the new and growing areasThis will include more rural connections as well as new routes into employment centres, coupled with more frequent services and longer operating hours. Cambridge with its polycentric employment sites, railway stations and Park and Ride sites will be better connected to the surrounding rural areas. **Demand Responsive Travel** uses technology (mobile app and call centre) to enable people in areas without public transport to pre-book their journey from walking distance of their home to key destinations. A 6-month trial with stage coach of 4 vehicles servicing the West Huntingdonshire rural communities, Huntingdon and St Neots has been undertaken and could be rolled out to other areas in the region. A study to identify an alternative location for **Huntingdon Bus Station** is proposed, while no site has been specified, there are existing issues around location and congestion.
Local Authority/ Location	Regional & Key areas above.
Current status	Feasibility

Baseline	Region- wide

SEA Objectives	Assessment	Summary of effects.
1. Improve the health of the population and reduce health inequalities between areas and groups	++	These projects improve health and reduce health inequalities through, either access to transport or reduced greenhouse gas and emissions to air. The 20's Plenty campaign says that lower vehicle speeds reduce casualties, encourage walking and cycling, and make neighbourhoods quieter, cleaner and more liveable. Use of demand responsive travel technology, alongside public wifi, can inform active travel and public transport choices.
2. Improve the health and safety of the transport network, reducing the number of accidents and other incidents	+++	20's Plenty for Cambridgeshire estimate that introducing 20mph limits on 80 per cent of the roads in Cambridgeshire would result in a reduction of 104 casualties annually. People hit by a vehicle travelling at 30mph are four times more likely to die than those hit at 20mph, according to the campaign[12].
3. Improve accessibility to key services, employment and recreational areas for all areas of the community	+	Demand responsive travel provides transport information to facilitate better access and choices for transport to key services. The future bus network and relocation of Huntingdon bus station has the potential to improve accessibility.
4. Support and contribute to local economic growth and competitiveness by delivering reliable and efficient transport networks	+	Demand responsive travel provides real time information, informing effective transport decisions and improving journey time while the future bus network and relocation of Huntingdon bus station has the potential to improve efficiency of travel by bus.
5. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking	+	Reduced speeds encourage active travel like walking and cycling. Smart Cities also reduced congestion by providing transport information and better choices. These projects also have the potential to improve travel by bus.
6. Protect and enhance biodiversity (including both habitat and species) and geodiversity at all levels	0?	These projects are unlikely to affect biodiversity, although an alternative location for Huntingdon bus station is not known.

[12] https://www.cambridgeindependent.co.uk/news/call-for-20mph-speed-limits-in-cambridgeshire-where-people-l-9199854/

7. Maintain, protect and enhance the historic environment, including archaeology and the historic landscape character	0?	These projects are unlikely to affect the historic environment, although an alternative location for Huntingdon bus station is not known.
8. Maintain, protect and enhance the diversity and distinctiveness of the landscape and townscape character	0?	These projects are unlikely to affect landscape and townscape, although an alternative location for Huntingdon bus station is not known.
9. Protect and conserve the quality of soils, minimising the loss of agricultural/greenfield land, and seek to remediate contaminated land	0?	These projects are unlikely to affect soils, although an alternative location for Huntingdon bus station is not known.
10. Protect and enhance the quality of the water environment	0?	These projects are unlikely to affect the water environment, although an alternative location for Huntingdon bus station is not known.
11. Reduce the risk of flooding to transport infrastructure and minimise its contribution to flood risk	0?	These projects are unlikely to affect flood risk, although an alternative location for Huntingdon bus station is not known.
12. Protect and improve local air quality, particularly in the AQMAs	++	Alternative fuels and ZEBRA buses improve air quality as they reduce emissions of nitrogen dioxide, although not particular matter. At this stage (feasibility) effects are likely to be minor, although implementation of interventions following the strategy could lead to increased benefits over time. The future bus network and demand responsive technology would lead to improved air quality by increasing reliability of these journeys and use by the public.
13. Minimise GHG emissions and reduce Cambridgeshire and Peterborough's contribution to climate change	++	The Alternative Fuels Strategy focuses on how the uptake of alternatively fuelled land vehicles can be boosted across East Anglia, what and how much infrastructure (such as electric vehicles charge points) needs to be delivered to support this transition, and other policies and actions that will be necessary to deliver a decarbonised transport system. Demand responsive technology, future bus network and alternative bus station would also lead to reduced GHG emissions by providing information on alternative transport, increasing reliability of these journeys and use by the public.
14. Reduce vulnerability to climate change by minimising the risk of flooding and effects from other climate hazards	++	Demand responsive travel can provide real time information on bus routes affected by climate change, such as flooding, storms or heatwaves, informing people of alternative travel choices, including not to travel. Other projects are unlikely to have an impact on this objective.
15. Maximising the use and lifespan of existing transport infrastructure	+?	The majority of these projects use existing infrastructure, an alternative location for Huntingdon bus station is not known.

Comparison of the 2020 LTP and LTCP

5.35 The LTCP contains some new objectives and associated policies and projects. A comparative assessment has been undertaken between the two plans against the SEA Objectives. Table 13 demonstrates the relative performance of the LTCP relative to the 2020 LTP.

Table 13 Comparison of the 2020 LTP and LTCP

SEA Objectives	Performance	Summary of effects.
1. Improve the health of the population and reduce health inequalities between areas and groups	⇧	The inclusion of digital connectivity within the LTCP provides additional opportunities to reduce health inequalities, particularly when including public wifi access with better online access to health care. Inclusion of active travel measures across the two plans is relatively similar.
2. Improve the health and safety of the transport network, reducing the number of accidents and other incidents	=	Both plans perform similarly, as both include a safety goal, objective, policies and safety measures are designed into transport projects with similar effects.
3. Improve accessibility to key services, employment and recreational areas for all areas of the community	=	Both plans perform similarly, as include a connectivity goal, objectives, policies and supporting projects with similar effects.
4. Support and contribute to local economic growth and competitiveness by delivering reliable and efficient transport networks	=	Both plans perform similarly, as include a productivity goal, objectives, policies and supporting projects with similar effects.
5. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking	=	Both plans perform similarly, as promote public transport and active travel as alternatives to car use through policies and projects.
6. Protect and enhance biodiversity (including both habitat and species) and geodiversity at all levels	=	Both plans perform similarly as have goals, objectives and policies for environmental protection and and enhancement. Projects in both plans result in positive and negative effects on biodiversity, the latter requiring mitigation.
7. Maintain, protect and enhance the historic environment, including archaeology and the historic landscape character	=	Both plans perform similarly as have goals, objectives and policies for protection and and enhancement of the built environment. Projects in both plans result in positive and negative effects on the histroic eenvironment, the latter requiring mitigation.
8. Maintain, protect and enhance the diversity and distinctiveness of the landscape and townscape character	=	Both plans perform similarly as have goals, objectives and policies for protection and and enhancement of the natural and built environment. Projects in both plans result in positive and negative effects on landscapoe and townscape, negative effects would require mitigation.

9. Protect and conserve the quality of soils, minimising the loss of agricultural/greenfield land, and seek to remediate contaminated land	=	Both plans perform similarly as have goals, objectives and policies for environmental protection and and enhancement. Projects in both plans result in negative effects on soils and greenfield land and require mitigation.
10. Protect and enhance the quality of the water environment	=	Both plans perform similarly as have goals, objectives and policies for environmental protection and and enhancement. The LTCP doesn't have any additional effects on the water environment.
11. Reduce the risk of flooding to transport infrastructure and minimise its contribution to flood risk	=	Both plans perform similarly as have goals, objectives and policies for environmental protection and and enhancement. The LTCP doesn't have any additional effects flood risk.
12. Protect and improve local air quality, particularly in the AQMAs	⇧	The LTCP includes additional policies for decarbonisation, which may also help improve air quality. Several road schemes included in the previous LTP have now been completed reducing congestion, no new road schemes are proposed under the LTCP.
13. Minimise GHG emissions and reduce Cambridgeshire and Peterborough's contribution to climate change	⇧	The LTCP includes additional policies for decarbonisation, and while no new road schemes have been proposed, transport is likely to continue to be a significant source of emissions.
14. Reduce vulnerability to climate change by minimising the risk of flooding and effects from other climate hazards	⇧	Both plans perform similarly as have goals, objectives and policies for environmental protection and aenhancement. Inclusion of digital connectivity provides the opportunity to improve resilience through provision of information on the transport network affected by climate events.
15. Maximising the use and lifespan of existing transport infrastructure	=	Both plans use existing infrastructure, while some projects require new infrastructure. However, the inclusion of digital connectivity can reduce the need to travel, and minimise the need for new transport infrastructure for a growing population.

5.40 The LTCP has been developed to reflect updated policy, particularly around decarbonsiation, and transport patterns following COVID-19 as set out in paragraph 2.1. The LTCP therefore performs better than the 2020 LTP in relation to policies and projects to reduce traffic and greenhouse house emissions. This also improves air quality and health due to increased emphasis on active travel and public transport.

Cumulative Effects

5.41 The SEA Regulations require that cumulative effects are considered when identifying likely significant effects. Cumulative effects arise, for instance:

- Where several individual policies or projects have a combined effect on an objective; or
- Where several plans each have insignificant effects, but together have a significant effect.

5.42 The assessment of the 2020 LTP concluded the following in relation cumulative effects of policies and projects within the plan:

The LTP strategy is a blended approach as described in Section 5. It focuses on a range of significant capital investments in highway, public transport and walking and cycling infrastructure, designed to support a significant increase in travel demand (expected to be generated by significant new development) but tailored to the local geographic and travel context. Overall the LTP is likely to have significant positive social effects from increased accessibility (both affordability and connectivity), increased choice and reliability of sustainable transport modes, economic growth, and health benefits. The LTP promotes sustainable transport modes including low and zero emission vehicles which will help reduce transport-related emissions providing benefits for air quality, GHG reduction and health.

The LTP promotes new road and rail transport infrastructure which has the potential for positive or negative cumulative effects depending on the location of the projects and mitigation measures incorporated into the design. Negative cumulative effects could include habitat loss and fragmentation, death, injury or disturbance to species, visual impacts, damage to heritage assets and archaeology, effect on setting of heritage assets, landtake including loss of agricultural land, and water pollution. There is also opportunity to provide positive effects including habitat creation and enhancement, incorporation of green infrastructure, increased access to the natural and historic environment (although increased pressure on these assets would need to be managed), increased accessibility and connectivity, and facilitating economic growth. There are also policies in the LTP that aim to reduce negative effects associated with transport infrastructure and protect and enhance the natural and built environment.[13]

5.43 It is considered that the additional assessment of policies and projects presented above does not change the assessment of cumulative effects and this can also be applied to the LTCP. The 2020 also assessed cumulative effects of policies and projects. Table 14 below sets out cumulative effects with other plans and policies, focusing on where these have been updated.

[13] pg72-73: https://cambridgeshirepeterborough-ca.gov.uk/wp-content/uploads/documents/transport/local-transport-plan/Reports-and-Appendices/Cambridgeshire-and-Peterborough-LTP-SEA-Environment-Report-rev-E.pdf

Table 14 Cumulative effects of the LTCP

Plan	Potential for Cumulative Effects
CPCA Local Plans	
Peterborough Local Plan, 2019[14] (to 2036)	Local Plans within the CPCA contain planning policies for sustainable development including environmental protection and enhancement. Proposed development within the CPCA has been taken into account in the preparation of the LTCP so that transport infrastructure can facilitate proposed growth and environmental protection objectives were identified in the IIA Scoping for the LTCP. Potential cumulative effects include effects on natural capital and greenhouse gas emissions as set out below: • Cumulative effects on natural capital (see below) • Direct and indirect effects on ecology, including designated or undesignated sites, habitats and species from new development. • Direct and indirect adverse effects on designated, non-designated or unknown heritage assets, for example due to land take or due to indirect effects on the setting of these assets. • Direct and indirect effects on landscape and townscape where proposed developments are located in close proximity to new transport schemes and in-combination erode character or introduce visual intrusion. • Adverse effects on surface water flooding due to increases in impermeable areas. • Increased greenhouse gas emissions from highways schemes and energy use from new development.
Cambridge Local Plan, 2018[15] (to 2031)	
East Cambridgeshire Local Plan, 2015[16] (to 2031)	
Huntingdonshire Local Plan, 2019[17] (to 2036)	
Fenland Local Plan, May 2014 (to 2031) and Emerging Local Plan (to 2040)[18]	
South Cambridgeshire Local Plan, 2018[19]	

[14] Peterborough City Council: **https://www.peterborough.gov.uk/council/planning-and-development/planning-policies/local-development-plan**

[15] Cambridge City Council: **https://www.cambridge.gov.uk/local-plan-2018**

[16] East Cambridgeshire District Council: **https://www.eastcambs.gov.uk/local-development-framework/east-cambridgeshire-local-plan-2015**

[17] Huntingdonshire District Council: **https://www.huntingdonshire.gov.uk/planning/new-local-plan-to-2036/**

[18] Fenland District Council: **https://www.fenland.gov.uk/media/12064/Fenland-Local-Plan---Adopted-2014/pdf/Fenland_Local_Plan-Adopted_2014.pdf** and **https://fenland.gov.uk/newlocalplan**

[19] South Cambridgeshire District Council: **https://www.scambs.gov.uk/planning/local-plan-and-neighbourhood-planning/the-adopted-development-plan/south-cambridgeshire-local-plan-2018/**

	Adverse impacts from new development, including housing, land for economic growth and transport infrastructure identified in these plans will need to be mitigated and opportunities for environmental net gain maximised, in line with environmental policy in the plans.
Transport Plans	
England's Economic Heartland Regional Transport Strategy[20]	Covers the authorities of CPCA, Northamptonshire (West and North), Bedford, Central Bedfordshire, Hertfordshire, Luton, Buckinghamshire, Oxfordshire, Swindon. Includes a five-point plan focusing on decarbonisation, digital infrastructure, strategic public transport schemes, active travel and freight and logistics. There is an investment pipeline for major schemes, which are reflected in the LTCP: • East West Rail: Bedford to Cambridge/ Cambridge to Ipswich • A1(M) East of England • Felixstowe to Nuneaton enhanced capacity for rail freight • Improved connectivity London-Bishops Stortford-Cambridge Corridor Effects of this schemes have been included within the Plan where relevant. No additional cumulative effects were identified.
Transport East Regional Strategy (under development)[21]	The priorities of the Strategy comprise decarbonisation to net-zero, connecting growing towns and cities, energising coastal and rural communities and unlocking international gateways. The Strategy identifies six core corridors, the two with the greatest potential to interact with the CPCA Region are: • Norfolk and Suffolk to Cambridge – Midlands – South West • Kings Lynn – Cambridge – Harlow – London Road and rail projects in particular have the potential for cumulative effects particularly in relation to biodiversity, historic environment, landscape and townscape and air quality and climate change.
Norfolk Local Transport Plan 4, 2021-2036[22] (Consultation draft)	Transport plans in adjacent authorities also have the potential for cumulative effects. These transport plans also need to reflect national policy and are therefore likely to have cumulative positive effects with the LTCP:

[20] **https://www.englandseconomicheartland.com/our-work/our-strategy/**

[21] https://www.transporteast.org.uk/about/our-documents/

[22] Norfolk County Council: **https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/roads-and-travel-policies/local-transport-plan**

Suffolk Local Transport Plan 2011-2036[23] Hertfordshire Local Transport Plan 2018-2031[24] Central Bedfordshire Local Transport Plan 3 2011-2026[25] My Journey - Bedford Local Transport Plan 2011-2021[26] Northamptonshire Transportation Plan 2011-2026[27] Moving Rutland Forward - Local Transport Plan 4 2018-2036[28] Lincolnshire Local Transport Plan 2013-2023[29]	• Promoting active travel to improve health and reduce greenhouse gas emissions • Provide effective public transport to increase connectivity between communities, with employment and services; reduce inequalities and greenhouse gas emissions; • Providing safe transport systems to reduce accidents; • Improve health and quality of life through increasing vitality and reducing congestion in town centres; • Reduce car journeys to improve air quality, reduce greenhouse gas emissions, increase safety and benefit natural and built environment. • Increasing use of technology to reduce car journeys and emissions; improve efficiency of public transport and increase climate resilience; • Protection of the natural and built environment. Major projects which cross authority boundaries, such as East West Rail and the A1(M) improvements are delivered by national bodies or specifically created organisations and therefore effects across boundaries are considered as part of feasibility and planning.

[23] Suffolk County Council: **https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/roads-and-travel-policies/local-transport-plan**

[24] Hertfordshire County Council: **https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/planning-in-hertfordshire/transport-planning/local-transport-plan.aspx**

[25] Central Bedfordshire Council: **https://www.centralbedfordshire.gov.uk/info/55/transport_roads_and_parking/596/transport_strategy**

[26] Bedford Borough Council: **https://www.bedford.gov.uk/parking-roads-and-travel/strategies-and-projects/local-transport-plan/**

[27] Northamptonshire Highways: **https://www.northamptonshire.gov.uk/councilservices/northamptonshire-highways/transport-plans-and-policies/Pages/local-transport-plan.aspx**

[28] Rutland County Council: **https://www.rutland.gov.uk/my-community/transport/transport-strategy/**

[29] Lincolnshire County Council: **https://www.lincolnshire.gov.uk/directory-record/61695/local-transport-plan**

6 Mitigation and Monitoring

6.1 The SEA Regulations require that measures are considered to prevent, reduce or offset any significant adverse effects on the environment of implementing the plan. These measures are known as 'mitigation' measures.

6.2 The SEA Regulations also require that monitoring of significant or uncertain effects is undertaken on a plan. This helps to ensure that the significant effects of implementation can be identified and remedial action imposed. The purpose of the monitoring is to provide an important measure of the environmental outcome of the LTCP, and to measure the performance of the plan against SEA Objectives. Monitoring is also used to manage uncertain effects.

Mitigation

6.3 Table 15 presents the mitigation and enhancement measures developed during the assessment stage and how these have been incorporated into the 2020 LTP and carried through the LTCP to proactively avoid adverse effects. Table 16 presents additional mitigation recommendations from the SEA, many of which would need to be applied for project implementation.

Table 15 Mitigation integrated into the Plan

Policy	SEA Topic	Mitigation Recommendation	How addressed in the LTCP
Policy Theme 4.2: Maintaining and managing the transport network	Climate, Soils, Air quality, Material assets	Include details on waste and material use within maintenance and capital projects, e.g., use of the waste hierarchy, maximising life and capacity of existing assets, using sustainably sourced materials with recycled content, reusing demolition material on new schemes to support the principles of a circular economy.	This has been addressed within Policy Theme 4.2.
Policy Theme 10.1: Reducing the carbon emissions from travel	Climate, Air quality, Human health	Policy 10.1.2 refers to EV charging points. To facilitate a switch to EV this could be widened to include EV infrastructure and information (not just charging points) e.g., priority parking for EV, an app with local maps on EV charging points and parking bays. 'Low carbon economy' is mentioned in some of the other policies (e.g., built environment) but it would also seem to fit under policy 10.1 as reducing carbon emissions from travel will help contribute to a low carbon economy.	This has been addressed within Policy 10.1.2 This has been addressed within the text in Policy Theme 10.1
Policy Theme 9.1: Protecting our natural environment	Flora and fauna, Population, Human	Biodiversity net gain is referred to in the policy overview but not in the policy wording. Consider bringing this out in the policy as well.	This has been addressed within the Policy

	health, Landscape, Water	Strengthen emphasis on cohesion and connectivity of green space and green infrastructure within Policy 9.1.3.	Theme 9.1 overview text and Policy 9.1.3.

Table 16 Mitigation to be applied as part of Plan implementation

Policy/Project	SEA Topic	Summary of Potential impacts	Mitigation / Enhancement
General mitigation to be applied to implementation of policies and projects			
ALL	Climate change	While the LTCP contains policies and projects to reduce car use, it does include highways policies and projects. While these would generally reduce congestion and improve air quality, they can also encourage travel by car and increase carbon emissions.	Throughout project design and construction, continue to identify ways in which carbon emissions can be reduced, for example through integration of transport networks for other modes or consideration of embodied carbon in construction.
ALL	Flora and fauna (biodiversity)	Effects on undesignated habitats, species, ecological networks and ecosystem functionality.	Ecological assessment to be applied to projects. This includes indirect effects including consideration of disturbance such as lighting, traffic and pedestrians, for some locations. Identification of additional areas of habitat creation, green infrastructure and improving connectivity through planting. Projects to meet biodiversity net gain requirements.
ALL	Historic environment	Potential loss of archaeological remains, harm to settings of heritage assets including Scheduled Monuments, Listed Buildings (including roadside listed buildings), and Conservation Areas - Whittlesford Bridge Conservation Area, in addition to non-designated assets, historic landscapes and townscapes.	Project level design should seek to avoid or minimise impacts. Sources of existing information include the Sites and Monuments Record, Conservation Management Plans, Heritage Partnership Agreements, and other Heritage and Conservation Strategies. At a project level, heritage impact assessment can be applied; including where appropriate assessment of significance; archaeological investigation and mitigation, such as a programme of recording.
ALL	Landscape and townscape	Impact on local landscape character, including green infrastructure, loss of vegetation erosion of townscape character.	Undertake landscape/townscape and visual impact assessment for larger schemes. Minimise impact through design at project level (location, scale, materials etc); and provide mitigation through landscaping including planting or other measures.

ALL	Soils	Potential for greenfield land-take, damage to soils and loss of agricultural land.	Design to minimise land take and areas of higher value agricultural land; pollution control measure during construction and operation to prevent contamination.
ALL	Climate change Material assets	Use of resources for construction of new infrastructure.	Project development should follow a resource efficiency hierarchy. This could require the adoption of the principles of resource efficiency, with opportunities maximised by designing for re-use and recovery, resource optimisation, off-site construction, resource efficient procurement, and designing for the future, including climate resilient materials.
Mitigation for projects with potential for significant effects			
Cambourne to Cambridge Better Public Transport Project	Flora and Fauna	Uncertain impacts on foraging bats, Eversden and Wimpole Woods Special Area of Conservation (SAC) Loss of small area within Madingley Slip Road RSV County Wildlife Site.	Project level Habitats Regulations Assessment is being undertaken for the project and adjacent housing site. Scheme design to minimise land-take, surveys show that area lost is relatively low value scrub and biodiversity net gain assessment to be undertaken.
A16 Norwood	Flora and Fauna Historic Environment	Dogsthorpe Pstar Pit SSSI and LNR lies to the east of the A16 scheme. The project is in close proximity to a Scheduled Monument and may affect its setting and significance. In addition, there is potential for unknown archaeology to be affected. The project may also affect Grade 3 Agricultural land.	Most of the works are within the highway boundary but further assessment, design and mitigation measures will be needed to understand any direct or indirect impacts[30].
Junction 3 (A1260 Nene Parkway / A1139 Fletton Parkway)	Flora and Fauna	Orton Pit SAC/SSSI is located adjacent to the project site. There is potential for minor to moderate effects for species and potential for habitat loss.	The Council will take the opportunity to increase biodiversity and improve the natural environmental along the corridor (where possible) as part of the scheme. Ecological and Arboricultural experts will be employed as part of the project team to assess and minimise potential

[30] https://cambridgeshirepeterborough-ca.gov.uk/wp-content/uploads/documents/transport/transport-business-cases/A16-Norwood-SOBC.pdf

			impacts of the proposal. In addition, they will also develop mitigation and enhancement measures to preserve the biodiversity of the site[31].
University and Fengate South Access	Flora and Fauna	The project is in close proximity to the Nene Washes Ramsar site (SSSI, SAC, SPA), road works and increased traffic have potential to increase disturbance to habitat and species within and/or traveling to and from the designated site. Therefore, a moderate negative effect has been identified	The CPCA is working towards a Strategic Outline Business Case to improve the road layout for all modes of transport[32]. Any potential impacts and mitigation to avoid impacts will be identified through this process.
A505 Corridor Study	Biodiversity Historic Environment	Potential impacts will depend on option selection and design: There are a two SSSIs within the corridor (Holland Hall Railway Cutting and Thriplow Peat Holes). There are 6 Scheduled Monuments: Car Dyke between Whitepost Road and Fen Bridge Scheduled Monument; Bran Ditch: an Anglo-Saxon bank and ditch; Roman Settlement S of Chronicle Hills; Chapel of the Hospital of St John at Whittlesford Bridge; Two Moated Sites 150m east of College Farm; Roman Fort, Roman Town, Roman and Anglo-Saxon Cemeteries at Great Chesterford'. Whittelsford Conservation Area There are a number of Listed Buildings, Registered Park and Garden. Greenbelt, landscape and agricultural land.	General mitigation described for all projects and plans above would apply to development of a business case.
Ely to Soham Capacity improvements	Biodiversity Soils	Potential for some landtake and disturbance through capacity improvements, including adjacent designated sites and agricultural land.	Network Rail will lead development and environmental assessment.

[31] https://www.peterborough.gov.uk/residents/transport-and-streets/major-road-schemes

[32] https://cambridgeshirepeterborough-ca.gov.uk/what-we-deliver/transport/roads/fengate-phase-2-university-access/

Digital connectivity policy	Historic Environment, Landscape and townscape.	Potential for masts to effect landscapes, townscapes and settings of heritage assets.	Local planning authorities within the CPCA work with developers to minimise effects of mast location in terms of landscape and the historic environment.

Monitoring

6.4 Negative effects identified during the SEA process were centred around future transport infrastructure development and the potential for effects on ecology, historic environment, water quality, landscape, flood risk, and soils. The LTCP itself includes a set of measurement and performance indicators which will be monitored to assess the success and progress of the LTCP. These indicators are presented in below:

Table 17 LTCP Monitoring

Metric	Indicator	Targets
Connectivity	Mode share (cordons) Proportion of households with access to cars by district Proportion of households with access to cars by income Public transport trips per person per year by household income % of households within 10 mins' walk of a bus stop with a service of at least once an hour Car ownership by deprivation decile Rail punctuality Local bus passenger journeys originating in the authority area (million) Average journey length by purpose and car ownership	Digital (broadband) availability Proportion of fully accessible buses on certain routes or in areas Bus punctuality
Productivity	Number of peak hour vehicle journeys	Journey time reliability on strategic important routes during the AM peak Key Route Network speed (AM peak) % change in peak period journey time along key routes and corridors (by vehicle type)
Climate change and environment	Trips per person by mode of transport or journey purpose Proportion of urban trips under five miles taken by (i) walking & cycling, (ii) Public Transport % of plug-in vehicles	Reduce per capita transport carbon emissions Number of charge points available to the public
Health	Proportion of people within xx mins of green open space % of deaths attributed to air pollution	% increase use of cycling Levels of noise pollution Levels of light pollution Levels of air pollution Transport related AQMAs Reduce levels of traffic derived Nitrogen Dioxide Length of cycleway per district
Safety	Number of child pedestrian casualties per 1,000 children in population Reduce the number of highway casualties Proportion of people who say they do not use public transport because of fear of crime Child pedestrian accident rates	To be developed

	KSI casualties in 10% most deprived areas KSI casualties by road user type and district KSI casualties by user type vs user type	

6.5 Additional monitoring requirements for the IIA are set out below:

Table 18 Additional IIA Monitoring

SEA Topic	Indicator	Responsibility	Timeframe
Biodiversity	Number of designated sites affected by LTCP projects. Achievement of net gain in LTCP projects.	CPCA	Plan period
Historic environment	Number of heritage assets affected by LTCP projects.	CPCA	Plan period
Soils	Area of Grade 1, 2, 3a agricultural land lost due to LTCP projects.	CPCA	Plan period

Control Information

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