Strategic Environmental Assessment (SEA) for the Kent Local Transport Plan 5

Environmental Report

Kent County Council

December 2024

Delivering a better world

Prepared for:

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Figure 1.1: Plan area for the Kent LTP5

Non-Technical Summary

What is Strategic Environmental Assessment?

A Strategic Environmental Assessment (SEA) has been carried out to inform the development of the Kent Local Transport Plan 5 (LTP5). Local Transport Authorities such as Kent County Council use SEA to assess Local Transport Plans such as the LTP5 against a set of environmental objectives developed in consultation with interested parties. The purpose of the assessment is to avoid adverse environmental and socio-economic effects and identify opportunities to improve the environmental quality of Kent and the quality of life of residents through the LTP5.

What is the Kent LTP5?

Kent County Council (KCC) is the highway authority for the county of Kent. In line with the Transport Act 2000 and Local Transport Act 2008, KCC are required to produce a Local Transport Plan which sets out the county's plans and policies for transport and how these will be implemented.

KCC is currently developing a new Local Transport Plan (the LTP5) which will outline its overarching ambitions for transport in the county and how these will be achieved between now and 2037. This will replace the existing Local Transport Plan 4 (LTP4): Delivering Growth without Gridlock (2016-31) which was adopted by KCC in July 2017.

Purpose and content of this Environmental Report

This Environmental Report, which accompanies the public consultation version of the LTP5, is the second consultation document to be produced as part of the SEA process. The first document was the SEA Scoping Report[1], which included information about Kent's environment and communities and the 'framework' against which the LTP5 has been assessed through the SEA.

The purpose of this Environmental Report is to:

- Identify, describe and evaluate the likely environmental effects of the LTP5 and alternatives; and
- Provide an opportunity for statutory consultees, interested parties and the public to offer views on the SEA process carried out to date.

The Environmental Report contains:

- An outline of the contents and main objectives of the LTP5 and its relationship with other relevant policies, plans and programmes;
- Relevant aspects of the current state of the environment and key environmental issues;
- The SEA Framework of objectives and assessment questions against which the LTP5 has been assessed;
- An assessment of alternative approaches for the LTP5;
- The likely significant environmental effects of the LTP5

[1] Kent County Council (May 2022) Local Transport Plan 5 Strategic Environment Assessment Scoping Report

- The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects as a result of the LTP5; and
- The next steps for the LTP5 and accompanying SEA process.

The information presented in this Environmental Report has been presented through eight SEA themes, as follows:

Biodiversity, flora and fauna 	Soil and water quality 
Air quality 	Cultural heritage 
Population and human health 	Landscape, noise and tranquillity 
Climatic factors 	Material assets 

Assessment of alternative approaches for the LTP5

A key requirement of the SEA Regulations is to assess 'reasonable alternatives' for the LTP5.

The SEA process has therefore considered reasonable alternatives through a two-stage approach, as summarised below.

Strategic options

The first stage assessed a range of options focussed on two broad geographical areas of the county. These are as follows:

1. Built-up urban areas; and
2. Inter urban areas / rural swathe.

This approach seeks to develop and assess strategic options for transport infrastructure delivery and management in urban and rural areas in Kent, with a view to informing the overarching strategy for the LTP5.

For each of the two broad areas, a number of options have been identified and assessed. For both areas a 'do minimum' option is described which would be applied in all circumstances, together with one or more options for additional levels of intervention over and above the do minimum. These options are designed to reflect the key issues facing the area, and the different approaches that can be taken to intervention/investment in transport infrastructure and management.

Built up urban areas

The options considered for this broad area are as follows:

- **Option U1: Do minimum**

  A 'do minimum' option would rely on committed investment, which would continue at a local and strategic level, and deliver limited additional investment. In practice the options would focus on the maintenance and enhancement of the local road network, with schemes likely to be of a limited scale. Such schemes are likely to include road safety schemes and basic network performance schemes, including and related to the programming of junction and signalling. In addition, the option would deliver local highway junction improvements and access schemes funded by third party development, including through planning applications.

- **Option U2: Network demand management through pricing mechanisms**

  This option would seek to focus interventions on demand management measures. A key component of the options would be the introduction of direct charges on motorists for driving on public roads. These schemes would be designed to charge motorists for when and where they drive based on usage and could include area-based charging, where drivers pay a fee to enter a certain area with a certain vehicle, or road user charging, incorporating local road pricing schemes. The option would also seek to initiate other demand management measures such as parking restrictions.

- **Option U3: Optimise the use of existing infrastructure**

  This option would have a strong focus on optimising the use of existing road infrastructure to enhance its performance. This would comprise a continuation and expansion of urban transport management systems, including network performance schemes, junction optimisation and other measures.

- **Option U4: Bus network and infrastructure enhancements**

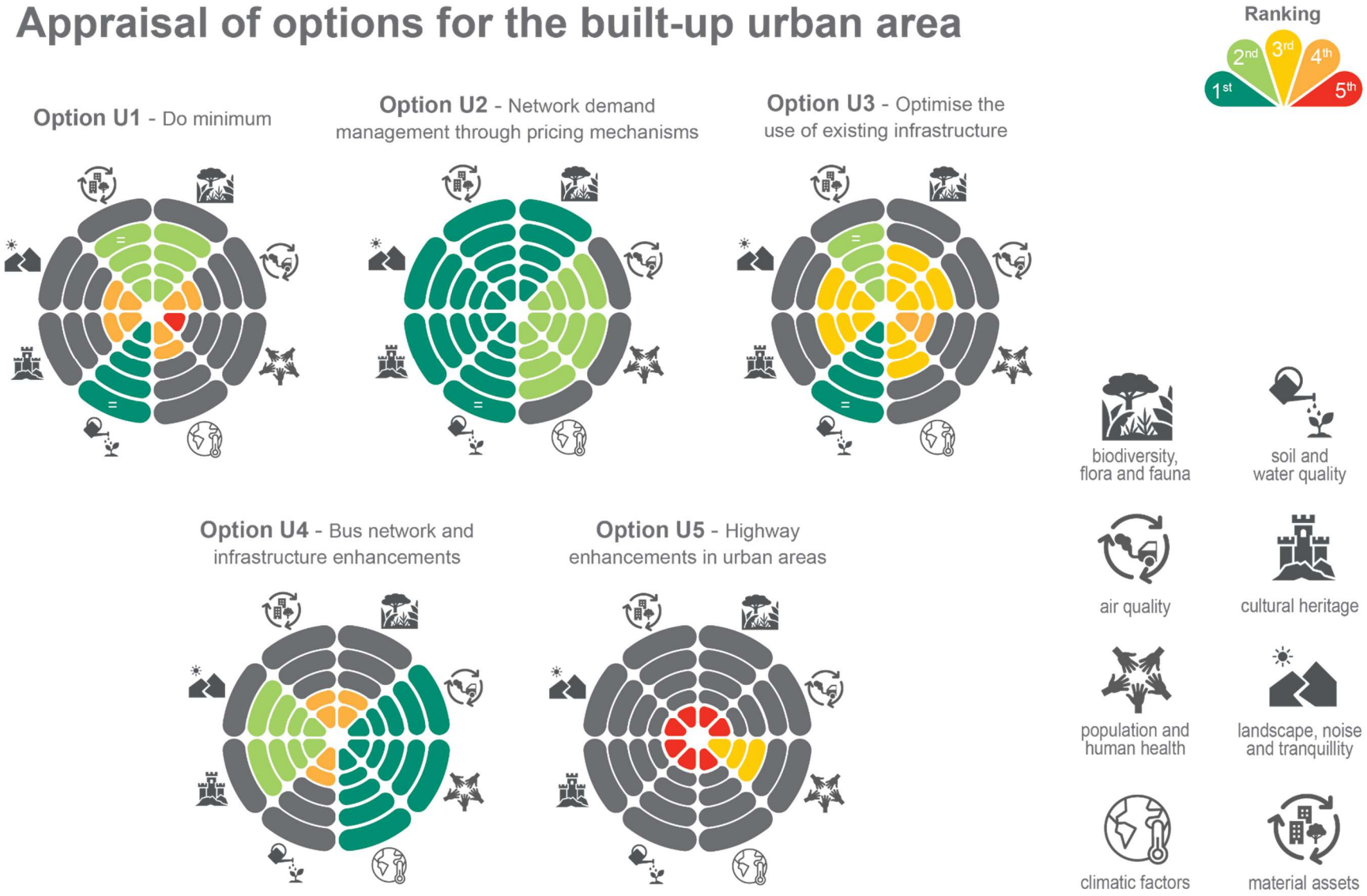
  This option would seek to initiate upgrades to the bus network, including through enhancements to bus stations and bus stops, reconfiguration of the urban road network to support bus priority, and where possible, support new and enhanced bus services. This would be supported in growth areas by network extension plans.

- **Option U5: Highway enhancements in urban areas**

  This option would seek to facilitate significant new road infrastructure. Schemes would include new relief roads, junction capacity upgrades and new connections onto the Strategic Road Network.

Table 4.1 in the main body of the Environmental Report presents the detailed assessment findings relating to these options. The rose diagrams below summarise these findings by presenting infographics which show the relative performance of each option against each other by SEA theme. A dark green or light green shading with 'outer rings' are used to highlight the best performing options (ranking 1st and 2nd respectively) for the SEA theme being considered. A yellow 'middle ring' represents the option which performs less well (ranking 3rd), whilst the orange and red shadings covering the 'inner rings' represent the options which performs least favourably (ranking 4th and 5th respectively). Where options are ranked equally, or it is not possible to differentiate between the options, an equals sign is used.

Appraisal of options for the built-up urban area



Inter urban areas / rural swathe

The options considered for this broad area are as follows:

- **Option R1: Do minimum**

  A 'do minimum' option would rely on committed investment, which would continue at a local and strategic level, and deliver limited additional investment. In practice the options would focus on the maintenance and enhancement of the existing inter urban road network, with schemes likely to be of a limited scale. Such schemes are likely to include road safety schemes and basic network performance schemes, including and related to the programming of junction and signalling. In addition, the option would deliver local highway junction improvements and access schemes funded by third party development, including through planning applications.

- **Option R2: Bus network and infrastructure enhancements**

  This option would seek to initiate upgrades to the inter urban and rural bus network, including through enhancements to bus stops, reconfiguration of the road network to support bus priority, and where possible, support new and enhanced rural bus services.

- **Option R3: Optimise use of highways network**

  This option would take a road safety approach, which would seek to deliver road safety schemes on the existing highways network, implement lower speed limits and enhance road safety for vulnerable road users such as pedestrians, cyclists and those travelling via other active travel modes.

- **Option R4: Rail service enhancements for rural communities**

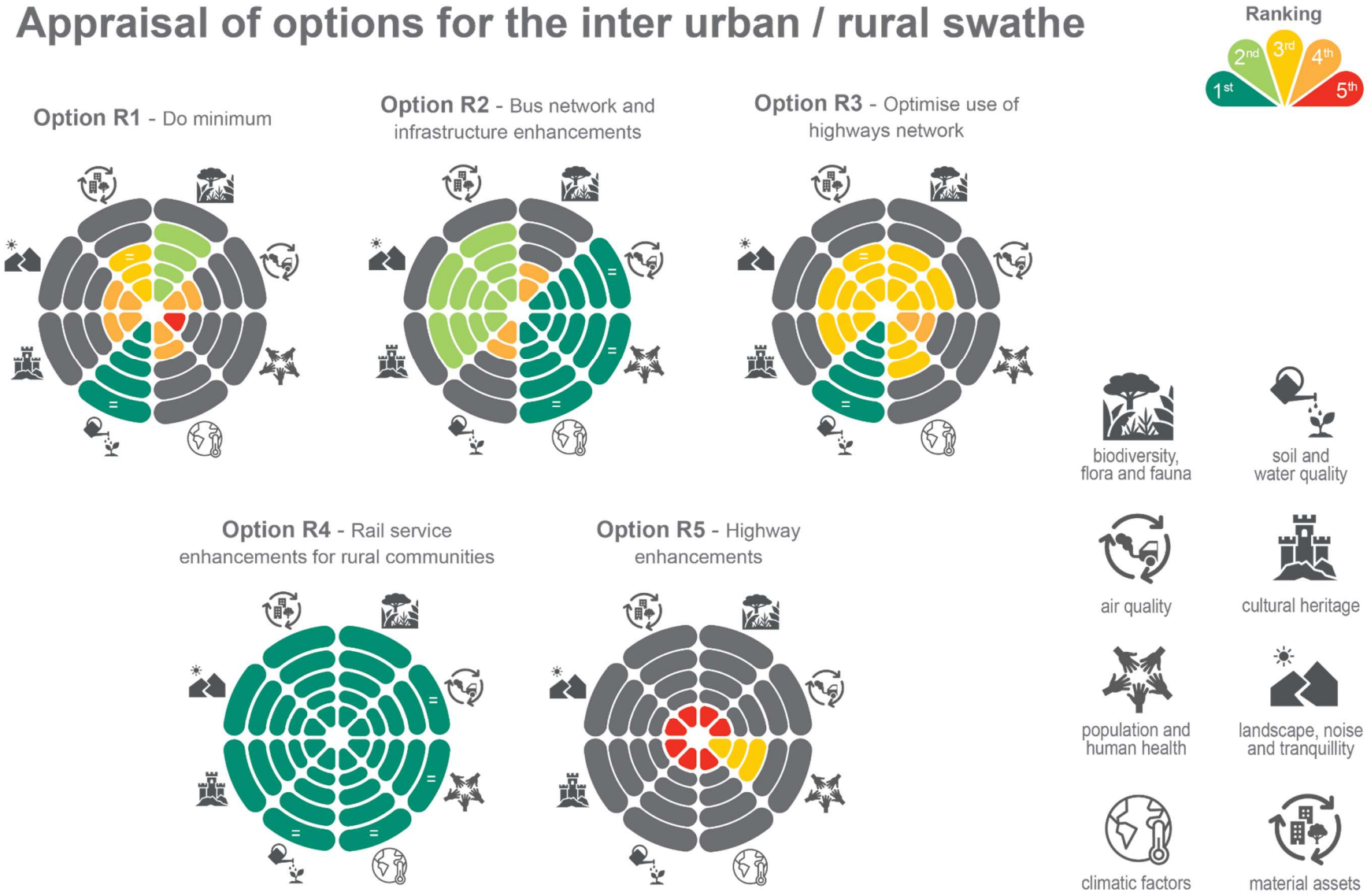
  The option would seek to deliver a range of schemes which deliver journey time and frequency improvements on the rail network, facilitate enhancements in access by rail to key regional and sub-regional centres and deliver enhancements to railway stations.

- **Option R5: Highway enhancements**

  This option would seek to facilitate significant new road infrastructure. Schemes would include new bypasses, junction capacity upgrades and new connections onto the Strategic Road Network.

Table 4.2 in the main body of the Environmental Report presents the detailed assessment findings relating to these options. The following diagrams present summaries of the findings.

Appraisal of options for the inter urban / rural swathe



Scheme and proposal options

The second stage of the assessment of reasonable alternatives considered potential LTP5 schemes and proposals. To support the development of the LTP5, KCC has considered a range of schemes and proposals for delivery through the plan period. These include 1) a number of road schemes in recognition of the long-term need for investment in the road network in Kent to mitigate the effect of the significant level of growth earmarked for Kent in the next 25 years, and 2) a range of rail, bus and multi-modal proposals.

These schemes and proposals were then assessed against the SEA Framework. The findings of the assessment of the schemes and proposals are presented in **Chapter 6 and Appendices B and C** in the main body of the Environmental Report.

Assessment of the schemes and proposals presented in the current version of the LTP5

The assessment has considered the likely significant environmental effects of 80 schemes currently taken forward in the consultation version of the LTP5. Findings have been presented through the SEA themes.

A summary of the assessment findings is presented overleaf. Detailed assessment findings, including commentaries, are presented in **Chapter 6 and Appendices B and C** of the Environmental Report.

Summary of road capacity scheme assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Road capacity scheme

Road capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
A28 Great Chart Bypass dualling	↓	?	?	↓	-	?	↓	?
A2 Lydden dualling	↓	?	?	↓	↓	↓	↓	?
A256 dualling	↓	?	?	↓	↓	↓	?	?
Blue Bell Hill A229 M2 connection	↓	?	?	↓	-	?	?	?
Leeds to Langley bypass	?	?	?	↓	↓	↓	↓	?
A20 widening between Hermitage Lane and Mills Road	?	?	?	↓	-	?	?	?
M25 to M26 Eastbound slips	↓	?	?	↓	-	↓	↓	?
M2 – road capacity enhancement	↓	↓	?	↓	-	↓	↓	?

Road capacity scheme

	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Sittingbourne Northern Relief Road	↓	↓	?	↓	↓	↓	?	?
Sittingbourne Southern Relief Road	↓	↓	?	↓	↓	↓	↓	?
Manston Road to Haine Road link	?	↓	?	↓	↓	?	↓	?
Canterbury Road West to Manston Road link	?	↓	?	↓	↓	↓	?	?
Canterbury Road to Minnis Road link	?	↓	?	↓	↓	↓	?	?
Canterbury Road to Park Lane link	?	?	?	↓	↓	↓	?	?
Clipper Close to Manston Road link	?	?	?	↓	↓	?	↓	?
Hartsdown Road to Manston Road link	↓	?	?	↓	↓	↓	?	?
Nash Road widening	?	?	?	↓	-	↓	?	?
Manston Road to Nash Road link	?	?	?	↓	↓	↓	?	?
Malling Road to Ashton Road (A26 and A228 stretches) and A228 Seven Mile Lane stretch – capacity enhancement	↓	?	?	↓	-	↓	?	?
A228 Colts Hill bypass	↓	?	?	↓	↓	↓	↓	?
Five Oak Green bypass	↓	?	?	↓	↓	↓	↓	?

Road capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Paddock Road East site – local road through development linking Mascalls Court Road with Church Lane	?	?	?	↓	-	↓	↓	?
Paddock Road North West site – link road A228 to B2160	?	?	?	↓	↓	?	?	?
Paddock Road South West site – local roads through development connecting Badsell Road and A228	?	?	?	↓	↓	?	?	?
A21 Kipping's Road – Kipping's Cross roundabout improvements	?	?	?	↓	-	↓	?	?

Summary of junction capacity scheme assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Canterbury Road / Simone Weil Avenue – capacity improvement to the traffic signal junction	-	?	?	↓	-	?	?	?
William Harvey Hospital Roundabout – widening of A2070 entry arms	?	?	?	↓	-	↓	?	?
Church Hill – Pound Lane – Ashford Road junction signalisation	-	-	↑	-	-	-	-	↑
New A2 junction for Mountfield Park development	?	?	?	↓	↓	↓	?	?
M25 Junction 1A	?	?	?	↓	-	?	?	?
Whitfield Roundabout	↓	?	?	↓	-	?	?	?
Duke of York Roundabout	?	?	?	↓	↓	↓	↓	?
A257 / Sandwich Bypass / Ash Road	?	?	?	↓	?	?	?	?
A256 Sandwich Bypass / A258 Deal Road / A256 (S)	↓	?	?	↓	↓	?	?	?
A20 A260 Spitfire Way junction	?	?	?	↓	↓	?	↓	?

Junction capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
A260 Alkham Valley Road junction – capacity improvement	?	?	?	↓	↓	?	↓	?
Alkham Valley Road / A20 London bound on-slip / A20 London bound off-slip – widening of Alkham Valley Road arm	?	?	?	↓	↓	↓	↓	?
M2 Junction 1 – capacity upgrade	↓	?	?	↓	-	?	↓	?
A2 Gravesend – upgrades to local junctions	↓	?	?	↓	-	↓	?	?
M20 Junction 7	↓	?	?	↓	-	?	↓	?
Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction upgrades	-	?	?	↓	-	?	?	?
Willington Street and Wallis Avenue junction improvements	?	?	?	↓	-	?	?	?
Willington Street and A20	↓	?	?	↓	-	↓	?	?
Bat and Ball junction – A225 / A25 – capacity upgrade	↓	?	?	↓	-	?	?	?
M25-M26-A21 junction – east facing slips	↓	?	?	↓	-	↓	↓	?
Brenley Corner M2	?	?	?	↓	↓	?	↓	?
Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction	-	?	?	↓	-	?	?	?
Halls Hole Road / A264 Pembury Road / Blackhurst Lane junction improvement (roundabout scheme)	↓	?	?	↓	-	↓	↓	?

Junction capacity scheme

	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Signalisation of junctions at Sandrock Road and Sandhurst Road on A264	-	-	↑	-	-	-	-	↑

Summary of rail network proposals assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme

	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
R1 – Freight gauge enhancement for international traffic	-	↑	↑	↑	-	?	↑	-
R2 – Maidstone journey time improvements	-	↑	↑	↑	-	↑	↑	-
R3 – Gatwick access improvements	-	↑	↑	↑	-	↑	↑	-
R4 – Dover / Folkestone high speed journey time improvements	-	↑	↑	↑	-	↑	↑	-
R5 – International rail services for Kent	-	-	-	-	-	-	-	-
R6 – Sturry and Canterbury West improvements	↑	↑	↑	-	-	↑	↑	↓
R7 – Local services	-	↑	↑	↑	-	↑	↑	-

Summary of bus and multi-modal network proposals assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme

	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
PT1 – Bus Service Improvement Plan	?	↑	↑	↑	?	?	?	?
PT2 – Thameside Fastrack Network Growth	?	↑	↑	↑	?	?	?	?
PT3 – Dover Fastrack Network Growth	?	↑	↑	↑	?	?	?	?
PT4 – Mobility as a Service	?	↑	↑	↑	?	?	?	?
PT5 – Cycle hire trails	?	↑	↑	↑	-	↑	↑	-
PT6 – Mobility hubs	?	↑	↑	↑	-	↑	↑	-

Cumulative effects

Cumulative effects can result from the combined impacts of a plan with impacts of another plan or proposal. The LTP5 therefore has the potential to combine with other planned or on-going activities in the vicinity of Kent to result in cumulative effects.

Examples include:

- The significant housing and employment growth proposed through the Kent districts' Local Plans
- Development of the Lower Thames Crossing between Gravesham and Thurrock in Essex.
- Proposals taken forward through the provisions of the Kent and Medway Economic Framework.
- Upgrades to the strategic road network through National Highways.
- Minerals proposals.
- Proposals to increase/manage visitor numbers to the two National Landscapes, the World Heritage Site, and other key visitor destinations in Kent.
- Activities designed to enhance sub-regional green infrastructure networks.

In this context, potential effects (both positive and negative) which may occur as a result of the in-combination effects of the LTP5 and other plans and proposals include the following:

- Increases in traffic flows and congestion from the in-combination effects of development and transport capacity enhancements, with potential impacts on air and noise quality, landscape and townscape character and the setting of the historic environment. However, the in-combination effects of proposals on enhancing public transport and pedestrian and cycle infrastructure may help limit potential negative effects and secure positive effects in this regard.
- Cumulative impacts on ecological networks. This is from the in-combination effects of new development and associated infrastructure on habitats and biodiversity corridors. However, enhancements to green infrastructure provision facilitated through plan proposals and other projects in the area, as well as an increased focus on biodiversity net gain also have significant potential to support local, sub-regional and regional ecological networks.
- Cumulative and synergistic impacts on greenhouse gas emissions from growth areas and the LTP proposals which support them.
- Impacts from a release of induced demand for transport from the in-combination effects of the LTP and nationally significant road and rail enhancements.
- Impacts on flood risk from the in-combination effects of new development, including relating to surface water and fluvial flooding.
- Enhancements to sub-regional green infrastructure networks.
- Improvements in accessibility resulting from the in-combination effects of enhancements to public transport and walking and cycling networks and public realm enhancements.

For many potential cumulative effects, the policy approaches proposed by the various plans and programmes will help reduce the significance of these in-combination impacts. However, monitoring for the plans and programmes will be a key means of ensuring that unforeseen adverse environmental and socio-economic effects are highlighted, and remedial action can be taken where adverse effects arise.

Recommendations

A number of recommendations can be made at this stage in relation to each of the SEA themes. The following table therefore highlights a number of recommendations which should be considered during the development of schemes and proposals proposed for delivery through the LTP5.

Recommendations for consideration during the implementation of the LTP5

SEA theme	Mitigation and enhancement measures for consideration during the implementation of LTP5 proposals
Biodiversity, flora and fauna 	• Potential impacts on biodiversity habitats should be considered during scheme development, avoidance and mitigation measures implemented, and opportunities for maximising net gain explored. • Opportunities to enhance ecological networks through appropriate planting and green infrastructure enhancements should be sought, supporting a premise of environmental net gain and delivering multifunctional benefits. • New and improved lighting and signage should be designed to minimise impacts on nocturnal species. • Development of a programme of works to help ensure that SSSIs and other important designated sites affected by the transport network are brought into favourable condition.
Air quality 	• Green infrastructure enhancements should be delivered alongside new infrastructure and designed to support air quality improvements, with a view to reducing exposures of key pollutants. • Comprehensive monitoring of emissions from transport should be undertaken.
Population and human health 	• Incorporate road safety schemes within scheme development for vulnerable road users. • Encourage design which supports the needs of mobility-impaired and vulnerable groups. • Opportunities to encourage inward investment and growth in areas of improved sustainable transport access should be sought.
Climatic factors 	• Transport proposals should seek to maintain carbon sequestered in soils and habitats, and seek to increase carbon capture through provision of semi-natural habitats including trees, wetlands and grasslands. • Comprehensive monitoring of emissions from transport should be undertaken. • Proposals associated with the LTP5 should seek to increase the resilience of infrastructure to the anticipated impacts of climate change. • The use of permeable surfacing should be prioritised in scheme design.

SEA theme	Mitigation and enhancement measures for consideration during the implementation of LTP5 proposals
Soil and water quality 	• New infrastructure should be supported by permeable surfaces and appropriate drainage systems where necessary, to reduce surface water run-off and maintain or improve attenuation rates. • Provision of sustainable drainage systems, including through green and blue infrastructure provision should be sought where possible alongside new transport infrastructure.
Cultural heritage 	• Potential impacts on the historic environment should be appropriately considered at scheme design. • The significance of both designated and undesignated heritage assets should be a key consideration in scheme development. • New transport infrastructure should be designed to facilitate enhancements to the fabric and setting of the historic environment. • Opportunities for enhancing access to and promoting understanding of the historic environment should be sought. • Maintenance regimes should seek to facilitate enhancements to the fabric and setting of designated and undesignated features and areas of historic environment interest. • Kent's archaeological resource should be a key consideration in the development of transport schemes.
Landscape, noise and tranquillity 	• New infrastructure should be designed to facilitate enhancements to the quality of the public realm and landscape, townscape and village scape character. • Transport infrastructure delivery should avoid the loss of existing trees and landscape features where possible. • Green infrastructure enhancements should be sought alongside new and enhanced transport infrastructure provision. • Maintenance regimes should seek to facilitate enhancements to local character. • Low noise surfacing should be integrated in new transport provision and maintenance regimes.
Material assets 	• Schemes associated with proposals should seek to limit waste arisings during construction. • Schemes should seek to incorporate the use of reused and recycled materials. • Scheme design should seek to extend project life and reduce future maintenance requirements through the use of longer-life materials.

Next steps

This Environmental Report has been published to accompany the draft LTP5 and released alongside the plan for consultation. Following the consultation period, comments will be reviewed and analysed. The final LTP5 will then be developed, with a view to adoption in December 2024. Any changes arising to the LTP5 will need to be assessed as part of the SEA process.

The SEA Regulations require that a 'statement' be made available to accompany the plan, as soon as possible after the adoption of the plan or programme. The purpose of the SEA Adoption Statement is to outline how the SEA process has influenced and informed the LTP5 development process and demonstrate how consultation on the SEA has been considered.

To meet these requirements, an SEA Adoption Statement will be published with the adopted version of the LTP5.

1. Introduction

1.1 Background

1.1.1 AECOM has been commissioned to undertake an independent Strategic Environmental Assessment (SEA) in support of the emerging Kent Local Transport Plan 5 (hereafter referred to as "the LTP5") on behalf of Kent County Council.

1.2 The Kent LTP5

1.2.1 Kent County Council (KCC) is the highway authority for the county of Kent. In line with the Transport Act 2000 and Local Transport Act 2008, KCC are required to produce a Local Transport Plan which sets out the county's plans and policies for transport and how these will be implemented.

1.2.2 KCC is currently developing a new Local Transport Plan which will outline its overarching ambitions for transport in the county and how these will be achieved between now and 2037. This will replace the existing Local Transport Plan 4 (LTP4): *Delivering Growth without Gridlock (2016-31)* which was adopted by KCC in July 2017.

Table 1.1: Key facts relating to the Kent LTP5

Responsible authority	Kent County Council
Title of plan	Kent Local Transport Plan 5 (LTP5)
Subject	Transport plan
Purpose	The LTP will provide a strategic framework for future transport planning across the county of Kent.
Timescale	To 2037
Area covered by the plan	The administrative area of Kent county (**Figure 1.1** above).
Summary of content	The Kent LTP5 will set strategic transport planning policy for Kent in the next 12 years. It will set out which transport interventions KCC intends to deliver during the plan period, and how these schemes and proposals will be funded.
Contact point	Mark Welch Principal Transport Planner Kent County Council Email address: mark.welch2@kent.gov.uk

1.3 Priorities, ambition and proposed outcomes for the LTP5

1.3.1 The LTP5 will align with the KCC's Council Strategy *Framing Kent's Future*.[2] This includes the following three County-wide priorities set out by the strategy:

- Priority 1: Levelling Up Kent
- Priority 2: Infrastructure for communities
- Priority 3 Environmental step change

1.3.2 In alignment with these priorities, the ambition for the LTP5 as set out by KCC as follows:

"We want to improve the health, wellbeing, and economic prosperity of lives in Kent by delivering a safe, reliable, efficient, and affordable transport network across the county and as an international gateway. We will plan for growth in Kent in a way that enables us to combat climate change and preserve Kent's environment.

"We will do this by delivering emission-free travel by getting effective dedicated infrastructure to electrify vehicles, increase public transport use and make walking and cycling attractive. This will be enabled by maintaining our highways network and delivering our Vision Zero road safety strategy. These priorities will ensure our networks are future-proof, resilient and meet user needs."

1.3.3 The LTP5 will deliver a range of transport interventions which will seek to deliver the following policy outcomes:

[2] Kent County Council (May 2022) Framing Kent's Future https://www.kent.gov.uk/about-the-council/strategies-and-policies/framing-kents-future

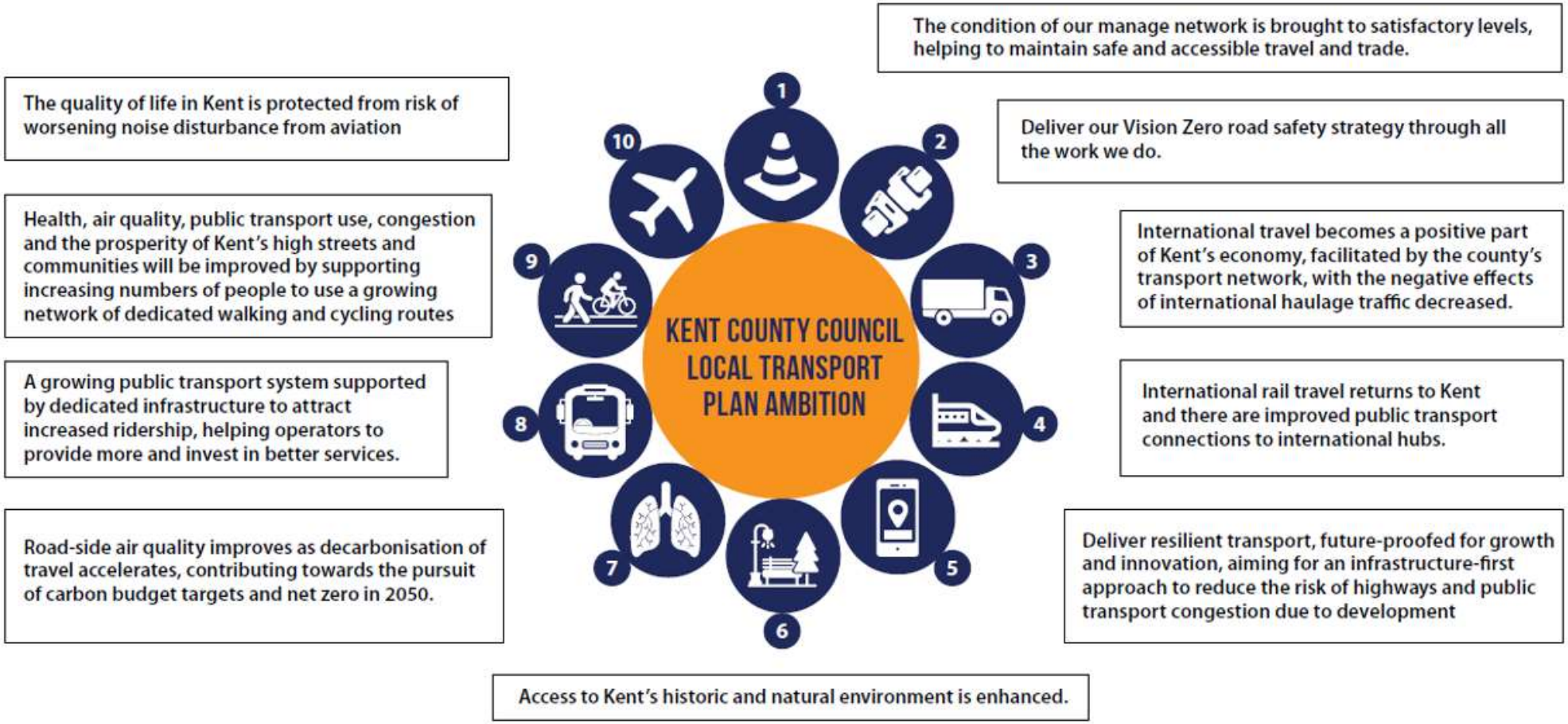


Figure 1.2: LTP5 proposed policy outcomes

1.4 SEA explained

1.4.1 Strategic Environmental Assessment (SEA) is a mechanism for considering and communicating the environmental impacts of an emerging plan and potential alternatives. An SEA is required for Local Transport Plans in accordance with the procedures prescribed by the Environmental Assessment of Plans and Programmes Regulations 2004[3].

1.4.2 The aim of the SEA for the LTP5 is to inform plan-making both directly (i.e. through structured, systematic and evidence-based analysis), and indirectly (through providing stakeholders with information on potential plan impacts and so facilitating effective consultation). Through this approach, the SEA seeks to maximise the environmental performance of the LTP5.

Key stages of the SEA

1.4.3 This Environmental Report follows the process required by the SEA Regulations. There is guidance published by government on undertaking SEA, specifically 'A Practical Guide to the Strategic Environmental Assessment Directive'; the 'Practical Guide'. This sets out a five-stage process for undertaking SEA. This process, in conjunction with the SEA Regulations, guides this assessment. The stages and outputs for the SEA are shown in **Figure 1.2** overleaf.

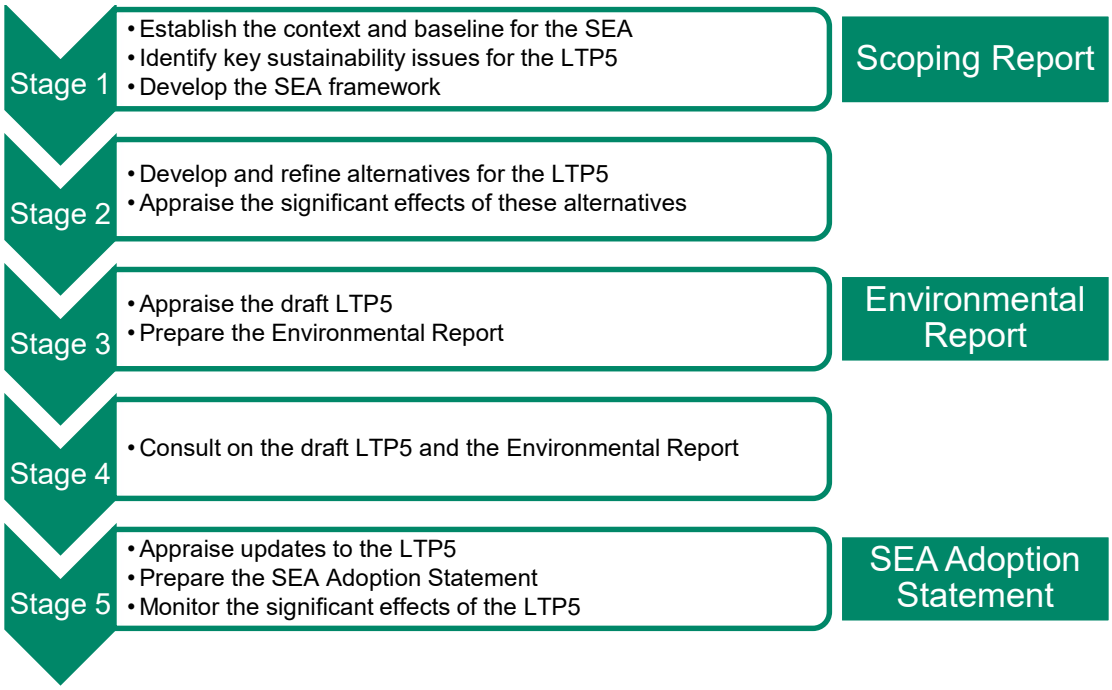


Figure 1.3 The stages and outputs for the SEA

[3] Which previously transposed EU Directive 2001/42/EC http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32001L0042

This Environmental Report

1.4.4 In line with the SEA Regulations, a report (known as the Environmental Report) must be published for consultation alongside the draft plan that *"identifies, describes and evaluates"* the likely significant effects of implementing *"the plan, and reasonable alternatives"*.[4] The report must then be considered, alongside consultation responses, when finalising the plan.

1.4.5 More specifically, the Environmental Report must answer the following questions[5]:

1. What is the scope of the SEA?
2. What has plan-making / SEA involved up to this point?
   - Including in relation to 'reasonable alternatives'.
3. What are the SEA findings at this current stage?
   - I.e., in relation to the Issues and Options Document.
4. What happens next?
   - What are the next steps for plan-making and SEA?

1.4.6 These questions are derived from Schedule 2 of the SEA Regulations, which present 'the information to be provided within the report'. **Table 1.1** overleaf presents the linkages between the regulatory requirements and the four SEA questions.

[4] Regulation 12(2) of the Environmental Assessment of Plans and Programmes Regulations 2004.
[5] See **Appendix A** for further explanation of the regulatory basis for answering certain questions within the Environmental Report, and a 'checklist' explaining more precisely the regulatory basis for presenting certain information.

Table 1.1 Questions that must be answered by the Environmental Report in order to meet Regulatory requirements[6]

Environmental Report question		In line with Schedule II the report must include…
What is the scope of the SEA?	What is the plan seeking to achieve?	An outline of the contents, main objectives of the plan and relationship with other relevant plans and programmes.
	What is the sustainability 'context' and baseline?	The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan. The environmental characteristics of areas likely to be significantly affected. Any existing environmental **problems** which are relevant to the plan including those relating to any areas of a particular environmental importance.
	What are the key issues and objectives that should be a focus?	Key **problems / issues** and **objectives** that should be a focus of (i.e. provide a 'framework' for) assessment.
What has plan-making / SEA involved up to this point?		Outline reasons for selecting the **alternatives** dealt with (and thus an explanation of the 'reasonableness' of the approach). The likely significant effects associated with **alternatives**. Outline reasons for selecting the preferred approach in-light of alternatives assessment / a description of how environmental objectives and considerations are reflected in the **draft plan**.
What are the assessment findings at this current stage?		The likely significant effects associated with the **draft plan**. The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects of implementing the **draft plan**.
What happens next?		The next steps for plan making / SEA process.

[6] Environmental Assessment of Plans and Programmes Regulations 2004.

2. Scope of the assessment

2.1 What is the scope of the SEA?

SEA Scoping Report

2.1.1 The SEA Regulations require that: *"When deciding on the scope and level of detail of the information that must be included in the report, the responsible authority shall consult the consultation bodies"*. In England, the consultation bodies are the Environment Agency, Historic England and Natural England.[7] As such, these authorities were consulted on an SEA Scoping Report in early 2022, alongside the district councils that comprise Kent, with an updated version prepared in May 2022.

2.1.2 The Scoping Report included an evidence base for the SEA (including baseline data and a policy and plan review) and an SEA framework of objectives and assessment questions against which LTP5 proposals could be assessed.

2.1.3 The information in the SEA Scoping Report (and the information presented in this Environmental Report) has been presented through the following SEA themes:

Biodiversity, flora and fauna 	Soil and water quality 
Air quality 	Cultural heritage 
Population and human health 	Landscape, noise and tranquillity 
Climatic factors 	Material assets 

[7] In line with Article 6(3) of the SEA Directive, these consultation bodies were selected because *"by reason of their specific environmental responsibilities,[they] are likely to be concerned by the environmental effects of implementing plans and programme".*

2.1.4 These themes incorporate the 'SEA topics' suggested by Annex I(f) of the SEA Directive and reflect the purpose of the LTP5 and its potential environmental effects.

2.1.5 Comments received from the consultation bodies on the Scoping Report, and how they have been considered and addressed through the ongoing development of the SEA process, are presented in **Table 2.1** below.

Table 2.1 Consultation responses received on the SEA Scoping Report

Consultation response	How the response was considered and addressed
Natural England	
Section 3 – The LTP and associated documents should have regard to the latest NPPF 2021.	Actioned
Section 3 – We welcome the reference to biodiversity net gain in para 3.2.3 of the SEA Scoping Report. The Environment Act 2021 introduces a new requirement for mandatory 10% Biodiversity Net Gain which will be implemented in due course, and we are aware of work being undertaken by the Kent Nature Partnership to consider the possibilities of achieving 20% biodiversity net gain across the County. We would welcome reference to the anticipated 10% biodiversity net gain target in the SEA Scoping Report document, as well as to how the LTP will contribute to this aim.	Added into Section 3 and criteria in Section 5.
Section 3 – We would further welcome reference to local nature recovery strategies, as required by the Environment Act 2021, as a strategic means to improve nature recovery and provide wider environmental benefits.	KCC is a landowner – most significantly through its land holdings as Highway Authority. Until the Strategies are established, KCC will not know, but the introduction of it provides a helpful marker in the document. Possible that the SEA and LTP5 will be complete well before the Environment Bill is enacted as legislation and the Strategies are then eventually prepared.
Section 4.2 – We would welcome further emphasis on the importance of SSSIs and clear reference to the legal requirements and policy framework which protect them (including paragraph 180 of the NPPF), as well as an explanation of how this will be considered through the LTP and accompanying SEA.	Amended in policy section.

Consultation response	How the response was considered and addressed
Section 4.2 – Many of the SSSIs within Kent are also designated as European Sites (Ramsar sites, Special Protection Areas, Special Areas of Conservation) and we advise that this should be recognised through the SEA Scoping Report and that the relevant legal and policy requirements are set out. In particular, we would expect to see reference to the Conservation of Habitats and Species Regulations 2017 (as amended) (known as the 'Habitats Regulations'). Given the presence of European Sites, we would also expect LTP5 to be supported by a Habitats Regulations Assessment following the process set out in the Habitats Regulations, to assess whether any policies or proposals would have an adverse effect on the integrity of any relevant European site.	The policies and proposals developed in the LTP5 will have regard to their potential impact on those sites covered by the Habitat Regulations, with policies and proposals screened for their potential impact. Whether a standalone HRA is generated, or it is subsumed into the SEA, is a decision KCC will make in due course. KCC consider the screening will be part and parcel of the assessment of policies and proposals against the objective and associated criteria set out under the biodiversity, flora and fauna topic in the SEA Scoping Report.
Section 4.2 – We would welcome further emphasis on the importance of protected and priority habitats and a clear understanding of the legislative framework that underlies their protection and how this will be considered through the LTP and accompanying SEA.	Priority habitats added.
Section 4.2 – We would encourage the SEA to include a more detailed summary of the County's environmental assets, for instance including the number of SSSIs and BAP Priority Habitats which are located within Kent. We note that the previous iteration of the Local Transport Plan, LTP4, and its accompanying SEA, included these figures and would welcome them being included in this iteration of the Local Transport Plan as well.	Added.
Section 4.2 – We would also expect it to be clearly set out that, when assessing the LTP, the SEA should assess the cumulative impacts of potential transport proposals to understand the full possible environmental impacts of any potential transport packages.	Added.
Section 4.3 – Many vegetation types are very sensitive to air pollution and some designated sites are already in exceedance of their critical loads or levels for nitrogen deposition. We would welcome reference to particular designated sites which are	No further action necessary in the scoping stage.

Consultation response	How the response was considered and addressed
vulnerable to air quality effects, as well as to the approach the LTP will take to avoiding impacts and improving these designated sites and how this will be assessed through the SEA.	
Section 4.6 – We would welcome reference to particular Designated Sites which are currently experiencing specific water quality and nutrient neutrality issues.	As above.
Section 4.8 – Natural England advises that the planning authority uses national and local policies, together with local landscape expertise and information to guide the assessment of any potential impacts on landscape as a result of the LTP.	Added.
Section 4.9 – We advise that any noise impacts on protected and priority species and on designated sites should be considered, alongside any impacts on communities from noise, when developing the LTP and assessing its environmental impacts.	Added.
Section 5 – Regarding the first objective relating to biodiversity-flora and fauna, we would welcome reference to the protection and improvement of SSSIs and designated sites and the relevant processes in place for their protection within the assessment criteria.	Mentioned in the assessment criteria.
Section 5 – Regarding the air quality objective, we would welcome the inclusion of an assessment criteria related to reducing the impact of poor air quality on habitats and species, as well as communities.	Amended.
Section 5 – We would welcome, in relation to the noise objective, that noise-sensitive areas were considered to also include those where habitats and species may be particularly sensitive to noise.	Amended.
Section 5 – In relation to the landscape and streetscape objective, we would welcome an assessment criteria which refers to the protection of the High Weald and Kent Downs AONBs and compliance with the relevant AONB Management Plan objectives.	Amended.
Section 5 – As a general point, we advise that the indicators which are used to assess any impact from the LTP are clear, measurable and specific to the impacts of the plan itself.	Amended.

Consultation response	How the response was considered and addressed
General point – Natural England advises that the LTP and accompanying SEA should consider any impacts on soils and Best and Most Versatile agricultural land, giving appropriate weight to the roles performed by the area's soils.	Soil is already included. KCC can ensure that the ALC gradings are considered where any site-specific proposals arise and are considered in the SEA.
Genera point – Any potential transport proposals should recognise the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodlands in line with NPPF paragraph 174.	KCC do not think the issue for the SEA is the extent of benefits appreciation KCC undertake. The critical issue is that KCC consider all those environment aspects of the arising impacts of policies and proposals to a level proportional to their development or design at the plan making stage. The scoping report sets the direction to do that in the SEA. Detailed assessment of benefits will be left to specific planning processes for specific schemes in the future.
Historic England	
General point – The draft scoping statement demonstrates a lack of understanding of the issues relating to the historic environment in Kent, and a poor awareness of the potential effects of transport policies and proposals on the significance of the cultural heritage of the county.	Key issues identified in the Scoping Report have been revisited and developed further; these are presented below in section 2.1.11.
It also draws on unrecognised sources of information for the heritage and fails to show an understanding of formal, official sources of data such as the Kent County Historic Environment Record, the National Heritage list for England, and the Heritage at Risk Register for England.	The SEA framework has been further developed to reflect the key sensitivities and issues relating to the historic environment.

Content of the SEA Scoping Report

2.1.6 Reflecting the requirements of the SEA Regulations, the following information was presented in the Scoping Report for the eight SEA themes:

- **Context review**: This explored the environmental and sustainability 'context' for the SEA / LTP5 through reviewing high level messages (e.g. internationally, from central government and at the regional level) with a view to establishing the focus for the SEA.

- **Baseline data**: This established the baseline situation in the area in the absence of the LTP5 (including the future baseline) in order to help identify the plan's likely significant effects.
- **Key issues**: This identified particular problems or opportunities ('issues') that should be a focus of the SEA.

2.1.7 Drawing on the key issues established through the above process, the Scoping Report presented an SEA Framework of objectives and assessment questions which would be used to assess the draft plan and alternatives. A summary of the key issues and the full SEA Framework is presented below. The baseline information, which has been updated to reflect comments received on the Scoping Report consultation, is presented in **Appendix A**.

Key issues for the SEA and SEA Framework

2.1.8 The SEA Scoping Report identified a range of sustainability problems / issues that provide the focus of the SEA process. Presented under each of the SEA themes, this drew on the review of the sustainability context and baseline.

2.1.9 The key issues were then translated into an SEA Framework of objectives and assessment questions. The SEA Framework has been used to inform the assessment of likely significant effects on the baseline, as presented in **Chapters 3 and 4** below. This enables the sustainability effects of the LTP5 and alternatives to be defined and subsequently analysed based on a structured and consistent approach.

2.1.10 The key issues identified through scoping are presented below under each SEA theme. **Table 2.1** below this presents the objectives and assessment questions for each SEA theme.

Biodiversity, flora and fauna

- The nature, scale, timing, and duration of some transport activities can result in the disturbance of species at a level that may substantially affect their behaviour, and consequently affect the long-term viability of their populations. This can include effects of poor air quality on designated sites, severance of ecological networks from transport corridors, and road kills.
- Road verges are subject to a range of stresses imposed by passing traffic, including salt spray, oil, lead, and air pollutants. Parking and over running on verges can result in the complete loss of vegetation.
- There are five Ramsar sites, four SPAs, and 15 SACs located within Kent, which all contribute to the national site network across England. Several of these sites intersect with or are located adjacent to/ in close proximity to, the main road network.
- Other protected sites within the county include 98 SSSIs and ten NNRs. Several of these sites intersect with or are located adjacent to/ in close proximity to, the main road network. There are also several LWSs in close proximity to Kent's transport network.
- A significant proportion of Kent's habitats and species are in an unfavourable condition. Few designated sites have management plans,

suggesting a potential absence of a coordinated conservation approach for ecological networks.

- There are a variety of priority habitats located within proximity to Kent's main road network, including significant areas of deciduous woodland, wood pasture and parkland, good quality semi-improved grassland, coastal and floodplain grazing marsh, and mudflats.
- Fragmentation of wildlife habitats into smaller, isolated areas caused by new and existing development, as well as increasing traffic, reduces the scope for wildlife to move and adapt to new conditions. Habitat creation in existing and new transport corridors, as well as the delivery of Biodiversity Net Gain, can help mitigate the impact of transport on biodiversity.
- The LTP5 presents an opportunity to maximise benefits for biodiversity by including consideration of important habitats, species, undesignated sites, and connections between designated sites and undesignated sites at a localised scale, and at an early stage of planning for future enhancements to transport infrastructure.

Air quality

- There are 36 active AQMAs in Kent at present. These are largely located in Gravesham, Medway, Swale, and Tonbridge and Malling. These are mostly designated due to emissions from transport.

Population and human health

- Kent is experiencing an increase in population, which is likely to translate into a higher demand for transport.
- Kent contains some of the most deprived LSOAs in the country, including 51 within the 10% most deprived LSOAs according to the overall Index of Multiple Deprivation (IMD).
- 48.1% of people in Kent are in 'very good' health, which is broadly in line with the national average (48.5%).
- 1.2% of the people aged 16 years and over in employment in Kent cycle to work, which is below the national average (2.1%). This could imply that cycling infrastructure across the county is currently lacking, or perhaps deemed unsafe to use by residents.
- There are on average just over 45 deaths on Kent's roads each year.

Climatic factors

- A range of flood risk issues exist across Kent, including linked to fluvial, surface water, and groundwater flooding and inundation from the sea.
- Road transportation is a major contributor of CO_2 emissions (which is one of the main components of GHGs) in England, including Kent, and therefore a major factor in exacerbating climate change. However, the ongoing transition towards electric and hybrid vehicles and increase in home working has the potential to help reduce emissions from transport in the long-term.

- The transport network has the potential to become increasingly vulnerable to the potential effects of climate change in forthcoming years. As such the resilience of the transport network to the likely impacts of climate change will be a key factor in its effective functioning.

Soil and water quality

- The water resources located within Kent include a network of main rivers, lakes, reservoirs, streams, brooks, and drainage ditches.
- The key issues preventing waterbodies from reaching good status can be attributed to physical modifications; pollution from towns, cities, and transport; and changes to the natural flow and levels of water.
- Increased soil erosion and compaction could be an issue for new infrastructure schemes, with impermeable materials reducing the drainage capacity and increasing the potential for surface water run-off issues.

Cultural heritage

- A significant number of features and areas of historic environment interest are present in the vicinity of Kent's transport network.
- Many features of cultural interest are directly associated with the transport network of Kent, including roads, railways, bridges and the canal network.
- New infrastructure provision has the potential to impact on the fabric and setting of heritage assets, through ground disturbance, inappropriate design and layout.
- There is a need for transport infrastructure improvements to avoid loss of or damage to heritage features, and where possible, recognise and better reveal the significance of heritage assets into transport infrastructure, providing opportunities for enhancing their fabric and setting.
- New development need not however be harmful to the significance of a heritage asset, and in the context of the LTP5, there may be opportunity for new transport infrastructure to enhance the historic settings of localities and better reveal assets' heritage significance.
- It is also recognised that the LTP5 has the potential to establish cross-cutting provisions relating to development. This has the potential to include the creation and enhancement of functional environmental infrastructure, ecosystem services and biodiversity, providing appropriate buffers to natural spaces and restoring and enhancing connectivity. In this context, improving the resilience of such networks is likely to help conserve the historic environment, important views, and/ or the setting of designated and non-designated assets, in addition to the wider character of key historic settlements in the county.

Landscape, noise and tranquillity

- There are two National Landscapes located within Kent, which are the Kent Downs and High Weald. The Kent Downs either overlaps with or lies adjacent to / in proximity to much of the M20.

- Kent overlaps with seven National Character Areas (NCAs): Greater Thames Estuary (NCA 81), North Kent Plain (NCA 113), North Downs (NCA 119), Wealden Greensand (NCA 120), Low Weald (NCA 121), High Weald (NCA 122), and Romney Marshes (NCA 123).
- Views are also an important consideration in the planning process as the scale, height and mass of development can ultimately impact important views if they are not considered and assessed through the process.
- Outside key cities and towns, areas of noise concern across Kent broadly link to and follow the routes of the road network.

Material assets

- The construction, maintenance and operation of transport infrastructure should seek to reduce the quantity of primary materials required, make use of surplus materials, and minimise the disposal of waste via landfill.
- Transport infrastructure projects (akin to most development projects) inherently use material assets and produce waste. If not appropriately mitigated, waste can affect the environment through its visual impact or by emissions to the air, leachate to groundwater, and runoff to surface water as well as the contamination of land.

Table 2.2 SEA Framework

SEA theme	Objective	Assessment questions – will the option / proposal help to…
Biodiversity, flora and fauna 	Protect existing habitats, wildlife and biodiversity sites, provide a minimum 10% biodiversity net gain as per the Environment Act 2021 requirement, and aim to improve the overall environment in Kent.	• Minimise habitat/ biodiversity losses and aim for overall net gain. • Impact on street trees and other vegetation or greening of public spaces to encourage biodiversity. • Minimise negative impacts of transport pollution on biodiversity and habitats.
Air quality 	Improve local air quality and reduce transport's contribution towards climate change, through reductions in road transport emissions.	• Achieve a reduction in road-side levels of regulated air pollutants. • Encourage short journeys to be made by active travel and public transport. • Reduce localised air quality impacts on local communities, habitats and species from freight vehicles using Kent Ports. • Reduce idling of traffic.
Population and human health 	Improve general levels of health and well-being through increasing active travel, improving access to the natural environment, essential services and by	• Improve the environment for walking, cycling and other sustainable transport modes. • Facilitate safer journeys by implementing the KCC Vision Zero Strategy. • Promote healthy lifestyles by improving conditions for active travel.

SEA theme	Objective	Assessment questions – will the option / proposal help to…
	reducing road casualties.	• Achieve an improvement in road-side air quality to reduce instances of asthma and respiratory disease in the population.
Climatic factors 	Increase resilience to climate change and achieve Kent's transport sector's contribution to legislated net zero by 2050 carbon targets.	• Reduce transport's contribution to climate change by reducing greenhouse gas. emissions from the sector in Kent to reach net zero by 2050. • Improve transport network resilience to flood risk events and rising sea levels. • Improve transport network resilience to extreme heat events.
Soil and water quality 	Reduce any adverse impacts on soil and water quality in Kent, for example the threat of nitrogen deposition from transport emissions and reduce and mitigate flood risk.	• Reduce flood risk in the public realm and transport network. • Conserve soil resources and quality. • Reduce tailpipe emissions from the transport sector. • Reduce impacts on sensitive and designated wildlife sites.
Cultural heritage 	Protect cultural heritage and conservation areas.	• Ensure preservation of historic sites and protect archaeology and other culturally important features during transport infrastructure development. • Minimise environmental impacts of construction. • Remove transport barriers to access sites of cultural heritage. • Improve the transport-setting of cultural heritage sites.
Landscape, noise and tranquillity 	Ensure that the public realm is high quality, sustainable, accessible and attractive, and fulfil statutory duty to conserve AONBs and SSSIs.	• Reduce street clutter and ensure streets are maintained to satisfactory levels to support use by different road users. • Provide public spaces that encourage community cohesion and provide green space. • Improve access to and from town centres by sustainable forms of transport. • Fulfil public sector equality duty by providing an accessible public realm that considers mobility impaired residents, as well as those with non-visible disabilities throughout design. • Conserve and protect the High Weald and Kent Downs AONBs and comply with the AONB Management Plan objectives.
Material assets 	To protect and manage built material assets (i.e., roads and footways) and utilise sustainable waste practices.	• Minimise waste production wherever possible. • Encourage environmental sustainability and best practice in the use of materials. • Provide and conserve existing roadside verges, rain gardens which provide biodiversity habitats, drainage, and act as carbon sinks.

3. Assessment of reasonable alternatives for the LTP5

3.1 Reasonable alternatives

3.1.1 A key element of the SEA process is the assessment of 'reasonable alternatives' for the LTP5. The SEA Regulations[8] are not prescriptive as to what constitutes a reasonable alternative, stating only that the Environmental Report should present an appraisal of the 'plan and reasonable alternatives taking into account the objectives and geographical scope of the plan'.

3.1.2 The SEA process has therefore considered reasonable alternatives through a two-stage approach.

Strategic options

3.1.3 The first stage assesses a range of options focussed on two broad geographical areas of the county. These are as follows:

1. Built-up urban areas; and
2. Inter urban areas / rural swathe.

3.1.4 This approach seeks to develop and assess strategic options for transport infrastructure delivery and management in urban and rural areas in Kent, with a view to informing the overarching strategy for the LTP5.

3.1.5 For each of the two broad areas, a number of options have been identified and assessed. For both areas a 'do minimum' option is described which would be applied in all circumstances, together with one or more options for additional levels of intervention over and above the do minimum. These options are designed to reflect the key issues facing the area, and the different approaches that can be taken to intervention/investment in transport infrastructure and management.

Scheme and proposal options

3.1.6 The second stage considers potential LTP5 schemes and proposals. To support the development of the LTP5, KCC has considered a range of schemes and proposals for delivery through the plan period. These include 1) a number of road schemes in recognition of the long-term need for investment in the road network in Kent to mitigate the effect of the significant level of growth earmarked for Kent in the next 25 years, and 2) a range of rail, bus and multi-modal proposals.

3.1.7 These strategic options, schemes and proposals have therefore been assessed against the SEA Framework.

3.1.8 The following chapters therefore present the details of the options, schemes and proposals considered through the SEA, and the findings of the assessments.

[8] Environmental Assessment of Plans and Programmes Regulations 2004

4. Assessment of strategic options for the built-up urban areas of Kent

4.1 Strategic options for the built-up urban areas

4.1.1 The options assessed under this category cover the urban areas of Kent, incorporating the built-up parts of the county's towns.

4.1.2 The options are as follows:

- **Option U1: Do minimum**

  A 'do minimum' option would rely on committed investment, which would continue at a local and strategic level, and deliver limited additional investment. In practice the options would focus on the maintenance and enhancement of the local road network, with schemes likely to be of a limited scale. Such schemes are likely to include road safety schemes and basic network performance schemes, including and related to the programming of junction and signalling. In addition, the option would deliver local highway junction improvements and access schemes funded by third party development, including through planning applications.

- **Option U2: Network demand management through pricing mechanisms**

  This option would seek to focus interventions on demand management measures. A key component of the options would be the introduction of direct charges on motorists for driving on public roads. These schemes would be designed to charge motorists for when and where they drive based on usage and could include area-based charging, where drivers pay a fee to enter a certain area with a certain vehicle, or road user charging, incorporating local road pricing schemes. The option would also seek to initiate other demand management measures such as parking restrictions.

- **Option U3: Optimise the use of existing infrastructure**

  This option would have a strong focus on optimising the use of existing road infrastructure to enhance its performance. This would comprise a continuation and expansion of urban transport management systems, including network performance schemes, junction optimisation and other measures.

- **Option U4: Bus network and infrastructure enhancements**

  This option would seek to initiate upgrades to the bus network, including through enhancements to bus stations and bus stops, reconfiguration of the urban road network to support bus priority, and where possible, support new and enhanced bus services. This would be supported in growth areas by network extension plans.

- **Option U5: Highway enhancements in urban areas**

This option would seek to facilitate significant new road infrastructure. Schemes would include new relief roads, junction capacity upgrades and new connections onto the Strategic Road Network.

4.2 Assessment findings

4.2.1 **Table 4.1** overleaf presents assessment findings in relation to the five options introduced above. These are organised by the eight SEA themes.

4.2.2 For each SEA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

Table 4.1 Appraisal of options for the built-up urban areas

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		U1	U2	U3	U4	U5
Biodiversity, flora and fauna 	Kent contains numerous internationally designated sites for biodiversity; these are particularly concentrated in the eastern part of the county, including along and near the coast. Urban areas that are particularly close to internationally designated sites include Gravesend, Sheerness / Minster on Sea / Queenborough, Sittingbourne, Faversham, Canterbury, Whitstable, Herne Bay, Margate, Broadstairs, Ramsgate, Sandwich, Deal, Dover, Folkestone, New Romney, and Lydd. The county also contains numerous nationally designated sites for biodiversity; whilst National Nature Reserves (NNRs) are largely concentrated in the eastern part of the county, Sites of Special Scientific Interest (SSSI) are more evenly distributed throughout the county. A significant number of urban areas in Kent are in proximity to an SSSI due to how widespread they are across the county. Biodiversity Action Plan (BAP) priority habitats can be found throughout the county, with a particularly large cover of deciduous woodland. In the northern part of the county, in and around Sheerness / Minster on Sea / Queenborough, and to the north of Sittingbourne and Faversham, there is a sizeable area of coastal and floodplain grazing marsh, mudflats, and coastal saltmarsh associated with the Medway Estuary. There is also a notable area of coastal and floodplain grazing marsh to the east of Gravesend, a notable area of coastal sand dunes and mudflats to the east of Sandwich, and a notable area of coastal vegetated shingle to the east and south of Lydd. Option U5, through facilitating the delivery of significant new road infrastructure in urban areas, has increased potential to lead to significant adverse effects on biodiversity habitats, species and networks. This includes from land take, habitat loss, and fragmentation and disturbance. Option U4 also has the potential to lead to similar adverse effects by delivering new bus infrastructure enhancements. However, new infrastructure delivery under this option will not be at the same scale as Option U5. In addition, by focusing on upgrades to the bus network Option U4 minimises adverse effects by supporting public transport, therefore reducing traffic and congestion and associated adverse impacts on wildlife, such as from road kills, fragmentation, noise and air pollution. Option U1, a ‘do minimum’ approach which relies on committed investment, and Option U3, which focuses on optimising existing transport infrastructure, would lead to fewer physical impacts on key	2	1	3	4	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		U1	U2	U3	U4	U5
	areas of sensitivity. Option U3 however has the potential to lead to impacts on habitats and ecological networks on existing transport corridors. This is given many existing transport routes are important biodiversity corridors, containing and linking key habitats, and frequently, designated sites. These corridors support a significant number of protected species. As such, Option U3 still has the potential to lead to significant adverse effects on biodiversity without the implementation of appropriate avoidance and mitigation measures. However, the scale of effects is less likely to be significant compared to those which result from Option U5. Finally, Option U2, which would focus interventions on demand management measures, would also lead to fewer physical impacts on key areas of sensitivity. In addition, by utilising demand management measures, this option maximises positive effects by discouraging driving in key areas, therefore reducing traffic and congestion and associated adverse impacts on wildlife. It should be noted though that the delivery of new and enhanced transport infrastructure may support some enhancements to biodiversity networks. For example, under the Environment Act 2021, all planning permissions granted in England, except for small sites, will have to deliver at least 10% biodiversity net gain. In addition, Highways England's Road Investment Strategy states that by 2040 its schemes must deliver a net gain in biodiversity, and Network Rail has committed to make a net positive contribution to biodiversity. In this context, there is scope for transport infrastructure enhancements to support biodiversity net gain in Kent. This includes through delivering enhancements in the Network Enhancement Zones[9] and Network Expansion Zones[10] identified throughout the county by Natural England.					
Air quality	There are 27 Air Quality Management Areas (AQMAs) in Kent. Of these AQMAs, six are in Swale; six are in Tonbridge and Malling; four are in Gravesham; four are in Medway; two are in Canterbury; two are in Dover; one is in Maidstone; one is in Thanet; and one is in Tunbridge Wells.	4	2	3	1	5

[9] Network Enhancement Zones comprise land within close proximity to existing habitat components that have been identified by Natural England as likely to be suitable for habitat re-creation for the particular habitat.
[10] Network Expansion Zones are areas identified with potential for expanding, linking and joining biodiversity networks.

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		U1	U2	U3	U4	U5
	By delivering infrastructure enhancements to the bus network, and therefore supporting modal shift to a more sustainable mode of transport to the private car, Option U4 has the greatest potential to support air quality enhancements in Kent. Option U2 also performs well in this respect by focusing on demand management measures to reduce the number of private cars on local roads. However, this option is not considered to perform as well as Option U4 as it does not involve improvements to the bus network, which will likely be needed to encourage the local population to switch to these modes. In this context, Options U1 and U3 are considered unlikely to result in any significant change to the baseline with regards to air quality. Option U3 is considered to perform slightly better than Option U1 by focusing on optimising existing infrastructure, which could reduce traffic and congestion. However, it is recognised that Option U3 would largely involve taking forward existing proposals, and expanding these where possible, limiting the scale and impact of the proposals. Option U5, by bringing forward new relief roads, junction capacity upgrades and new connections onto the strategic road network, has the potential to lead to air quality enhancements at key 'pinch points' on the network which have existing air quality issues. This has the potential to support significant enhancements of air quality at specific locations. However, through contributing to an overall increase in traffic flows on the wider road network, the option has the potential to increase traffic flows over a broader area, including through stimulating induced demand. This may contribute to increases in emissions of the key pollutants which affect air quality over a wider area.					
Population and human health 	Many urban areas in Kent have a high level of overall deprivation according to the Index of Multiple Deprivation (IMD). Urban areas within the 20% most deprived neighbourhoods in the country include (but are not limited to) parts of Swanley; Dartford; Swanscombe; Northfleet; Gravesend; Maidstone; Queenborough; Sittingbourne; Faversham; Canterbury; Herne Bay; Margate; Ramsgate; Dover; Folkestone; Hythe; and Ashford. The 'do minimum' approach promoted through Option U1, as well as Option U3 which focuses on optimising existing transport infrastructure, would do less to help address the key socio-economic and quality of life issues influenced by transport in Kent. A range of issues are less likely to be addressed	5	2	4	1	3

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		U1	U2	U3	U4	U5
	without appropriate interventions, including accessibility and severance issues which can contribute to social exclusion. Conversely, Option U4, which seeks to improve bus services, would encourage the use of public transport. In addition to supporting social inclusion and community vitality, this will contribute to the quality of life and health of residents by limiting the impact of traffic and congestion on local communities. This includes enhancements to air quality and improvements in the quality of the public realm. Option U2, which focuses on demand management measures such as direct charges to motorists, would support public transport use through enhancing service times and reliability (including through freeing up road space for bus services). It would also encourage active travel. This is important given those from the most deprived communities often do not have access to a private car. However, it is recognised that this option would reduce accessibility for those who are reliant on a car to access key services, facilities and opportunities, including those living in less accessible locations. This option also performs well from a health and wellbeing perspective given it will help enhance road safety for vulnerable road users; encourage active travel use; and support enhancements to air and noise quality. Option U5 has the potential to support economic opportunities by delivering new connections onto the strategic road network, therefore improving access to key employment areas. However, this option does not directly support public transport or active travel enhancements and performs less favourably in this respect. Moreover, a potential stimulation of traffic growth due to induced demand has the potential to have adverse effects on the health and wellbeing of the local population by increasing air and noise pollution, impacting on the quality of the public realm and neighbourhoods, and having implications for road safety.					
Climatic factors	Per capita greenhouse gas (GHG) emissions in Kent were 5.2 tCO_2e in 2021, which is lower than the national average of 5.5 tCO_2e. Notably, transport was the largest emitting sector of GHG in Kent in 2021.	4	2	3	1	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		U1	U2	U3	U4	U5
	By promoting significant new road infrastructure that will likely relieve congestion and / or increase capacity, Option U5 has the potential effect of releasing demand for vehicle trips currently suppressed. As such, the release of this induced demand may lead to significant increases in GHG emissions. Comparatively, Options U2 and U4 will do more to support modal shift to alternative modes of transport to the private car. As such, these options have additional potential to support a limitation of GHG emissions from transport. The 'do minimum' approach delivered through Option U1, as well as Option U3, are unlikely to lead to any significant changes to GHG emissions. There are several widespread areas within Flood Zone 3 in Kent. This includes the area to the east of Gravesend; the area in and around Queensborough; the area to the north of Sittingbourne and Faversham; the area between Herne Bay and Sandwich; the area in and around Sandwich; the area in and around Lydd and New Romney; and the area in and around Paddock Wood. Many of Kent's towns and villages also suffer from flood risk issues. In the context of the above, Option U5 – and to a lesser degree Option U4 – have more potential than Options U1, U2 and U3 to lead to proposals which enhance the resilience of transport infrastructure to the effects of climate change, including extreme weather events such as flooding and heat waves. This is given these options will deliver transport infrastructure enhancements with the potential to initiate physical measures which will limit the effects of climate change, such as green infrastructure and sustainable drainage systems (SuDS). However, this is largely dependent on scheme design and layout and the integration of green infrastructure and other measures to help regulate the effects of extreme weather events. In addition, as Option U5 will deliver new roads it will inevitably increase the cover of hard, impermeable surfaces in Kent, potentially worsening surface water flooding in certain areas and contributing to wider fluvial flood risk issues.					
Soil and water quality 	Outside of the urban areas, Kent is primarily underlain by Grade 3 (Good to Moderate) agricultural land according to the Agricultural Land Classification (ALC) map produced by Natural England in 2010. However, several areas are underlain by Grade 1 (Excellent) agricultural land. This includes the A2 corridor between Gravesend and Canterbury; the A257 corridor between Canterbury and Sandwich; the area covered by the A299, A28 and A253 to the southwest of Margate, Broadstairs and Ramsgate;	=1	=1	=1	4	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		U1	U2	U3	U4	U5
	the area covered by the A259 and A2070 to the northwest of Lydd; and isolated areas to the southwest of Maidstone (A26) and northeast of Ashford (A28). Option U5, by facilitating the delivery of significant new road infrastructure, will require greater land take than the other options. This has increased potential to lead to the development of previously undeveloped land, including potentially productive agricultural land. In the absence of mitigation measures, an increased delivery of new road infrastructure has the potential to lead to impacts on water and soil quality through an increase in surface water run-off. However, no significant impacts on water quality would be anticipated from schemes if the required embedded mitigation measures are incorporated within the construction and operational stage. Whilst Option U4 may involve some land take, this will not be at the same scale as under Option U5. The remaining options are ranked equally as they are likely to involve no to minimal land take.					
Cultural heritage 	Kent's urban areas have a rich historic environment resource, as highlighted by the significant number of features and areas designated for their heritage value. This includes the World Heritage Site (WHS) of Canterbury Cathedral and numerous scheduled monuments, listed buildings, and registered parks and gardens. The historic environment of the county's urban areas is also framed by the significant number of undesignated features of heritage value, which are vulnerable to change given their lack of statutory and / or local protection. In addition, transport corridors are often themselves important heritage resources. Kent's urban areas also have a rich and diverse archaeological resource. The significant new road infrastructure likely to be delivered through Option U5 has the potential to lead to significant impacts on heritage assets located in the vicinity of the key routes and areas targeted for interventions. The significance of effects from these interventions will however depend on the design, layout and scale of the schemes, as well as any mitigation and avoidance measures proposed. It should also be noted that well designed schemes have the potential to lead to enhancements to the public realm and the setting of the historic environment. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm, with benefits for the setting of the historic environment.	4	1	3	2	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		U1	U2	U3	U4	U5
	Option U2, which focuses on 'soft' demand management measures, is less likely to lead to direct adverse impacts on the historic environment and townscape character. The setting of the historic environment also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a reduction in traffic flows and improved traffic management. This will help limit adverse effects from traffic on the setting of heritage assets. Whilst Option U4 will likely involve some 'hard' measures, by also supporting a modal shift similar positive effects are anticipated. The 'do minimum' approach taken forward through Option U1, as well as the optimisation of existing infrastructure through Option U3, have reduced potential to bring similar benefits.					
Landscape, noise and tranquillity 	The Kent Downs National Landscape covers a large part of the mid-section of the county, from the area around Sevenoaks in the west to the area around Folkestone and Dover in the east. This National Landscape overlaps with several key roads, including the M2, M20, M25, M26, A2, A21, A25, A28, A229, and A240. In addition, the High Weald National Landscape covers the southwestern part of the county, from the area around Southborough / Royal Tunbridge Wells in the west to the area southeast of Tenterden in the south. This National Landscape overlaps with fewer key roads (the A21, A26 and A229). Whilst it is recognised that Green Belt is not strictly a landscape designation, the western extent of Kent is covered by the London Area Green Belt. This overlaps with several roads, including the M20, M25, A2, A21, A25, and A26. Option U5, by facilitating the delivery of significant new road infrastructure, has increased potential to lead to adverse impacts on townscape and landscape character across Kent, including within the National Landscapes. It is also likely to lead to the greatest increase in noise pollution in urban areas as a result of increased traffic. Option U2, an approach which focuses to a greater degree on 'soft' demand management measures, is less likely to lead to direct adverse impacts on townscape and landscape character. Local character also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a reduction in traffic flows and improved traffic management. This will help limit adverse effects from traffic on townscape and landscape character, including noise pollution.	4	1	3	2	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		U1	U2	U3	U4	U5
	Whilst Option U4 will likely involve some 'hard' measures, by also supporting a modal shift similar positive effects are anticipated. The 'do minimum' approach taken forward through Option U1, as well as the optimisation of existing infrastructure through Option U4, have more limited potential to bring similar benefits. Notably, the significance of effects resulting from schemes initiated through Options U4 and U5 would depend on the design, layout and scale of the schemes, as well as any mitigation and avoidance measures proposed. It is also recognised that well designed schemes have the potential to lead to enhancements to the public realm and townscape / landscape character. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm.					
Material assets 	Option U5, by facilitating the delivery of significant new road infrastructure, is likely to require the largest scale of material used to construct and operate new roads. Whilst Option U4 is also likely to require a degree of materials to deliver upgrades to the bus network, this will likely be at a much smaller scale than Option U5. Options U1 and U3 are likely to require minimal material use, whilst Option U2 would require negligible material use as it only supports 'soft' demand management measures. Notably, Options U2 and U4 both support modal shift away from the private vehicle. This will help limit maintenance requirements on the road network, including relating to resurfacing. Hence, fewer materials will likely be required for ongoing maintenance.	=2	1	=2	4	5

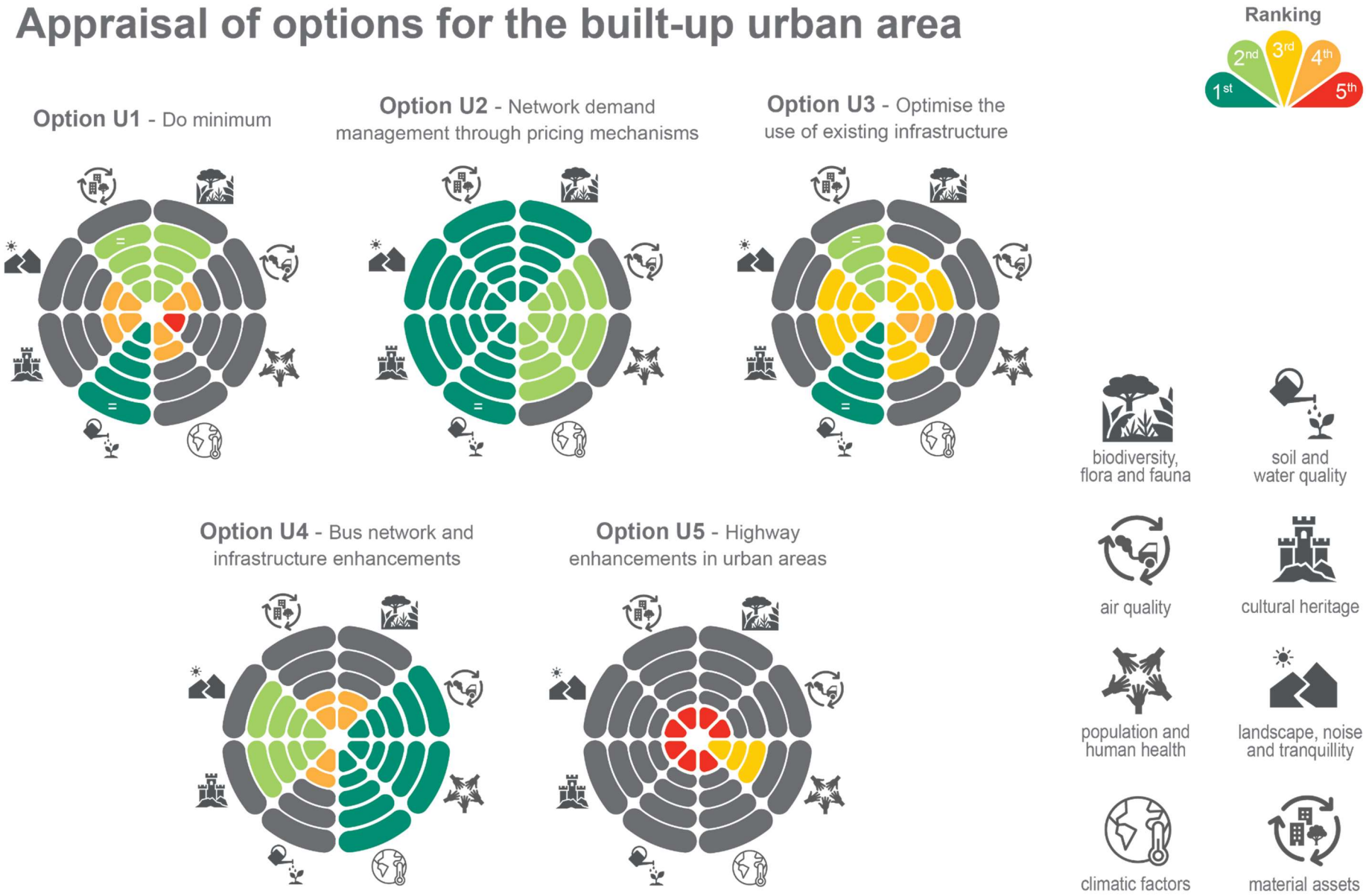
Summary of findings

4.2.3 The rose diagrams below present infographics which show the relative performance of each option against each other by SEA theme. A dark green or light green shading with 'outer rings' are used to highlight the best performing options (ranking 1st and 2nd respectively) for the SEA theme being considered. A yellow 'middle ring' represents the option which performs less well (ranking 3rd), whilst the orange and red shadings covering the 'inner rings' represent the options which performs least favourably (ranking 4th

and 5th respectively). Where options are ranked equally, or it is not possible to differentiate between the options, an equals sign is used.

4.2.4 As illustrated by the rose diagrams overleaf, Option U2 performs most favourably overall, scoring first / joint first under five SEA topics and second under three SEA topics. The next best performing option is Option U4, scoring first under three SEA topics and second under two SEA topics. This is followed by Options U1 and U3, which perform relatively on par. Option U5 is the least favourably performing option, not ranking first or second under any of the SEA topics.

Appraisal of options for the built-up urban area



5. Assessment of strategic options for the inter urban areas / rural swathe

5.1 Strategic options for the inter urban areas / rural swathe

5.1.1 The options assessed under this category cover the inter urban / rural areas of Kent.

5.1.2 The options are as follows:

- **Option R1: Do minimum**

  A 'do minimum' option would rely on committed investment, which would continue at a local and strategic level, and deliver limited additional investment. In practice the options would focus on the maintenance and enhancement of the existing inter urban road network, with schemes likely to be of a limited scale. Such schemes are likely to include road safety schemes and basic network performance schemes, including and related to the programming of junction and signalling. In addition, the option would deliver local highway junction improvements and access schemes funded by third party development, including through planning applications.

- **Option R2: Bus network and infrastructure enhancements**

  This option would seek to initiate upgrades to the inter urban and rural bus network, including through enhancements to bus stops, reconfiguration of the road network to support bus priority, and where possible, support new and enhanced rural bus services.

- **Option R3: Optimise use of highways network**

  This option would take a road safety approach, which would seek to deliver road safety schemes on the existing highways network, implement lower speed limits and enhance road safety for vulnerable road users such as pedestrians, cyclists and those travelling via other active travel modes.

- **Option R4: Rail service enhancements for rural communities**

  The option would seek to deliver a range of schemes which deliver journey time and frequency improvements on the rail network, facilitate enhancements in access by rail to key regional and sub-regional centres and deliver enhancements to railway stations.

- **Option R5: Highway enhancements**

  This option would seek to facilitate significant new road infrastructure. Schemes would include new bypasses, junction capacity upgrades and new connections onto the Strategic Road Network.

5.2 Assessment findings

5.2.1 **Table 5.2** overleaf presents appraisal findings in relation to the five options introduced above. These are organised by the eight SEA themes.

5.2.2 For each SEA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

Table 5.2 Appraisal of options for the inter urban areas / rural swathe

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		R1	R2	R3	R4	R 5
Biodiversity, flora and fauna 	Kent contains numerous internationally designated sites for biodiversity; these are particularly concentrated in the eastern part of the county, including along and near the coast. As internationally designated sites are largely located outside of urban areas, many inter urban / rural areas overlap with these sites. The county also contains numerous nationally designated sites for biodiversity; whilst NNRs are largely concentrated in the eastern part of the county, SSSI are more evenly distributed throughout the county. A significant number of inter urban / rural areas in Kent overlap with nationally designated sites. BAP priority habitats can be found throughout the county, with a particularly large cover of deciduous woodland. In the northern part of the county, in and around Sheerness / Minster on Sea / Queenborough and to the north of Sittingbourne and Faversham, there is a sizeable area of coastal and floodplain grazing marsh, mudflats, and coastal saltmarsh associated with the Medway Estuary. There is also a notable area of coastal and floodplain grazing marsh to the east of Gravesend, a notable area of coastal sand dunes and mudflats to the east of Sandwich, and a notable area of coastal vegetated shingle to the east and south of Lydd. Option R5, through facilitating the delivery of significant new road infrastructure in inter urban / rural areas, has increased potential to lead to significant adverse effects on biodiversity habitats, species and networks. This includes from land take, habitat loss, and fragmentation and disturbance. Option R2 also has the potential to lead to similar adverse effects by delivering bus infrastructure enhancements. However, new infrastructure delivery under this option will not be at the same scale as Option R5, and by focusing on upgrades to the bus network Option R2 minimises adverse effects by supporting public transport, therefore reducing traffic and congestion and associated adverse impacts on wildlife. Option R4, which seeks to deliver rail service enhancements, is less likely to lead to adverse effects on wildlife as enhancements will be limited to the existing rail network. However, frequency improvements to the rail network may cause additional disturbance to wildlife that occupy / traverse	2	4	3	1	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		R1	R2	R3	R4	R 5

railway lines. Nevertheless, by encouraging the use of public transport, this option brings about positive effects by discouraging driving in key areas, therefore reducing traffic and congestion and associated adverse impacts on wildlife, such as from road kills, fragmentation, noise and air pollution.

Option R1, the 'do minimum' approach which relies on committed investment, and Option R3, which focuses on optimising existing road infrastructure, would lead to fewer physical impacts on key areas of sensitivity. Option R3 however has the potential to lead to impacts on habitats and ecological networks on existing road corridors. This is given many existing transport routes are important biodiversity corridors, containing and linking key habitats, and frequently, designated sites. These corridors support a significant number of protected species. As such, Option R3 still has the potential to lead to significant adverse effects on biodiversity without the implementation of appropriate avoidance and mitigation measures. However, the scale of effects is less likely to be significant compared to those which result from Option R5.

It should be noted though that the delivery of new and enhanced transport infrastructure may support some enhancements to biodiversity networks. For example, under the Environment Act 2021, all planning permissions granted in England, except for small sites, will have to deliver at least 10% biodiversity net gain. In addition, Highways England's Road Investment Strategy states that by 2040 its schemes must deliver a net gain in biodiversity, and Network Rail has committed to make a net positive contribution to biodiversity. In this context, there is scope for transport infrastructure enhancements to support biodiversity net gain in Kent. This includes through delivering enhancements in the Network Enhancement Zones[11] and Network Expansion Zones[12] identified throughout the county by Natural England.

[11] Network Enhancement Zones comprise land within close proximity to existing habitat components that have been identified by Natural England as likely to be suitable for habitat re-creation for the particular habitat.
[12] Network Expansion Zones are areas identified with potential for expanding, linking and joining biodiversity networks.

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		R1	R2	R3	R4	R 5
Air quality 	There are 27 AQMAs in Kent. Whilst these AQMAs are all located in urban areas, it is recognised that private cars travelling into / out of urban areas from inter urban / rural areas are a key contributor to traffic and congestion in and around these AQMAs. By delivering infrastructure enhancements to the rail / bus network, and therefore supporting modal shift to a more sustainable mode of transport to the private car, Options R2 and R4 have the greatest potential to support air quality enhancements in Kent. Options R1 and R3 are considered unlikely to result in any significant change to the baseline with regards to air quality. Option R3 is considered to perform slightly better than Option R1 by focusing on optimising existing infrastructure, which could reduce traffic and congestion. However, it is recognised that Option R3 would largely involve taking forward existing proposals, and expanding these where possible, limiting the scale and impact of the proposals. Option R5, by bringing forward new bypasses, junction capacity upgrades and new connections onto the strategic road network, has the potential to lead to air quality enhancements at key 'pinch points' on the network which have existing air quality issues. This has the potential to support significant enhancements of air quality at specific locations. However, through contributing to an overall increase in traffic flows on the wider road network, the option has the potential to increase traffic flows over a broader area, including through stimulating induced demand. This may contribute to increases in emissions of the key pollutants which affect air quality over a wider area.	4	=1	3	=1	5
Population and human health 	Many inter urban / rural areas in Kent have a high level of overall deprivation according to the Index of Multiple Deprivation (IMD). Inter urban / rural areas within the 20% most deprived neighbourhoods in the country include (but are not limited to) the Isle of Sheppey; East Malling; Aylesford; Hothfield; Seasalter; Aylesham; and the area around Lydd and New Romney. The 'do minimum' approach promoted through Option R1 would do less to help address the key socio-economic and quality of life issues influenced by transport in Kent. A range of issues are less likely to be addressed without appropriate interventions, including accessibility and severance issues which can contribute to social exclusion and are particularly prevalent in rural areas.	5	=1	4	=1	3

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		R1	R2	R3	R4	R 5
	Options R2 and R4, which seek to improve bus / rail services, would do more than Options R1 and R3 to encourage the use of public transport. In addition to supporting social inclusion and community vitality, they will contribute to the quality of life and health of residents by limiting the impact of traffic and congestion on local communities. This includes enhancements to air quality and improvements in the quality of the public realm. However, it is noted that Option R3 would deliver road safety schemes on the existing highways network, which would contribute to the wellbeing of the local community and support active travel by improving safety for pedestrians and cyclists. Option R5 has the potential to support economic opportunities by delivering new connections onto the strategic road network, therefore improving access to key employment areas. This is particularly important given those living in rural areas are more likely to be dependent on the private car to access services, facilities and opportunities. As such, enhancing accessibility by car will in many respects support rural accessibility. However, this option does not directly support public transport or active travel enhancements and performs less favourably in this respect. Moreover, a potential stimulation of traffic growth due to induced demand has the potential to have adverse effects on the health and wellbeing of the local population by increasing air and noise pollution, impacting on the quality of the public realm and neighbourhoods, and having implications for road safety.					
Climatic factors 	Per capita GHG emissions in Kent were 5.2 tCO_2e in 2021, which is lower than the national average of 5.5 tCO_2e. Notably, transport was the largest emitting sector of GHG in Kent in 2021. By promoting significant new road infrastructure that will likely relieve congestion and / or increase capacity, Option R5 has the potential effect of releasing demand for vehicle trips currently suppressed. As such, the release of this induced demand may lead to significant increases in GHG emissions. Comparatively, Options R2 and R4 will do more to support modal shift to alternative modes of transport to the private car. As such, these options have additional potential to support a limitation of GHG emissions from transport.	4	=1	3	=1	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		R1	R2	R3	R4	R 5
	The 'do minimum' approach delivered through Option R1, as well as Option R3 which seeks to optimise the use of the highways network, are unlikely to lead to any significant changes to GHG emissions. There are several widespread areas within Flood Zone 3 in Kent. This includes the area to the east of Gravesend; the area in and around Queensborough; the area to the north of Sittingbourne and Faversham; the area between Herne Bay and Sandwich; the area in and around Sandwich; the area in and around Lydd and New Romney; and the area in and around Paddock Wood. Many of Kent's towns and villages also suffer from flood risk issues. In the context of the above, Option R5 – and to a lesser degree Option R2 – have more potential than Options R1, R3 and R4 to lead to proposals which enhance the resilience of transport infrastructure to the effects of climate change, including extreme weather events such as flooding and heat waves. This is given these options will deliver transport infrastructure enhancements with the potential to initiate physical measures which will limit the effects of climate change, such as green infrastructure and SuDS. However, this is largely dependent on scheme design and layout and the integration of green infrastructure and other measures to help regulate the effects of extreme weather events. In addition, as Option R5 will deliver new roads it will inevitably increase the cover of hard, impermeable surfaces in Kent, potentially worsening surface water flooding in certain areas and contributing to wider fluvial flood risk issues.					
Soil and water quality 	Outside of the urban areas, Kent is primarily underlain by Grade 3 (Good to Moderate) agricultural land according to the ALC map produced by Natural England in 2010. However, several areas are underlain by Grade 1 (Excellent) agricultural land. This includes the A2 corridor between Gravesend and Canterbury; the A257 corridor between Canterbury and Sandwich; the area covered by the A299, A28 and A253 to the southwest of Margate, Broadstairs and Ramsgate; the area covered by the A259 and A2070 to the northwest of Lydd; and isolated areas to the southwest of Maidstone (A26) and northeast of Ashford (A28).	=1	4	=1	=1	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		R1	R2	R3	R4	R 5
	Option R5, by facilitating the delivery of significant new road infrastructure, will require greater land take than the other options. This has increased potential to lead to the development of previously undeveloped land, including potentially productive agricultural land. In the absence of mitigation measures, an increased delivery of new road infrastructure has the potential to lead to impacts on water and soil quality through an increase in surface water run-off. However, no significant impacts on water quality would be anticipated from schemes if the required embedded mitigation measures are incorporated within the construction and operational stage. Whilst Option R2 may involve some land take, this will not be at the same scale as under Option R5. The remaining options are ranked equally as they are likely to involve no to minimal land take.					
Cultural heritage 	Kent's inter urban / rural areas have a rich historic environment resource, as highlighted by the significant number of features and areas designated for their heritage value. This is closely linked to the special qualities of the landscape. Whilst the inter urban / rural areas often have lower concentrations of designated heritage assets when compared to urban areas, they continue to have a rich historic environment, with many listed buildings, scheduled monuments and registered parks and gardens present. The historic environment of the county's inter urban / rural areas is also framed by the significant number of undesignated features of heritage value, which are vulnerable to change given their lack of statutory and / or local protection. In addition, transport corridors are often themselves important heritage resources. Kent's inter urban / rural areas also have a rich and diverse archaeological resource. The historic environment is also framed in many areas by distinctive historic landscapes, including the Kent Downs National Landscape. The significant new road infrastructure likely to be delivered through Option R5 has the potential to lead to significant impacts on heritage assets located in the vicinity of the key routes and areas targeted for interventions. The significance of effects from these interventions will however depend on the design, layout and scale of the schemes, as well as any mitigation and avoidance measures proposed.	4	2	3	1	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		R1	R2	R3	R4	R 5
	It should also be noted that well designed schemes have the potential to lead to enhancements to the public realm and the setting of the historic environment. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm, with benefits for the setting of the historic environment. Option R4, by supporting a modal shift, has the potential to improve the setting of the historic environment by limiting traffic and congestion in inter urban / rural areas. Whilst Option R2 will likely involve some 'hard' measures, by also supporting a modal shift similar positive effects are anticipated. The 'do minimum' approach taken forward through Option R1, as well as the optimisation of existing infrastructure through Option R3, have reduced potential to bring similar benefits.					
Landscape, noise and tranquillity 	The Kent Downs National Landscape covers a large part of the mid-section of the country, from the area around Sevenoaks in the west to the area around Folkestone and Dover in the east. The National Landscape overlaps with several roads, including the M2, M20, M25, M26, A2, A21, A25, A28, A229, and A240. In addition, the High Weald National Landscape covers the southwestern part of the county, from the area around Southborough / Royal Tunbridge Wells in the west to the area southeast of Tenterden in the south. This National Landscape overlaps with fewer key roads (the A21, A26 and A229). Whilst it is recognised that Green Belt is not strictly a landscape designation, the western extent of Kent is covered by the London Area Green Belt. This overlaps with several roads, including the M20, M25, A2, A21, A25, and A26. Option R5, by facilitating the delivery of significant new road infrastructure, has increased potential to lead to adverse impacts on village scape and landscape character across Kent, including within the National Landscapes. In particular, new bypasses could cut through areas of the countryside that currently experience relatively low levels of traffic. Option R4, by encouraging modal shift, has the potential to lead to improvements in local village scape and landscape character. This will help limit adverse effects from traffic on village scape and landscape character. However, it is recognised that by delivering frequency improvements on the rail	4	2	3	1	5

SEA theme	Discussion of potential effects and relative merits of options	Rank of preference				
		R1	R2	R3	R4	R 5
	network, Option R4 has the potential to lead to some additional impacts on noise quality in inter urban / rural areas in proximity to the rail network. Whilst Option R2 will likely involve some 'hard' measures, which could lead to adverse impacts on villagescape and landscape character, by also supporting a modal shift similar positive effects to those noted under Option R4 are anticipated. In addition, this option will likely lead to improvements in noise quality as a result of reducing traffic and congestion, The 'do minimum' approach taken forward through Option R1, as well as the optimisation of existing road infrastructure through Option R3, have more limited potential to bring similar benefits. Notably, the significance of effects resulting from schemes initiated through Options R2 and R5 would depend on the design, layout and scale of the schemes, as well as any mitigation and avoidance measures proposed. It is also recognised that well designed schemes have the potential to lead to enhancements to the public realm and villagescape / landscape character. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm.					
Material assets 	Option R5, by facilitating the delivery of significant new road infrastructure, is likely to require the largest scale of materials used to construct and operate new roads. Whilst Option R2 is also likely to require a degree of materials to deliver upgrades to the bus network, this will likely be at a much smaller scale than Option R5. Options R1, R3 and R4 are likely to require minimal material use. Notably, Options R2 and R4 both support modal shift away from the private vehicle. This will help limit maintenance requirements on the road network, including relating to resurfacing. Hence, fewer materials will likely be required for ongoing maintenance.	=3	2	=3	1	5

Summary of findings

5.2.3 The rose diagrams below present infographics which show the relative performance of each option against each other by SEA theme. A dark green or light green shading with 'outer rings' are used to highlight the best performing options (ranking 1st and 2nd respectively) for the SEA theme being considered. A yellow 'middle ring' represents the option which performs less well (ranking 3rd), whilst the orange and red shadings covering the 'inner rings' represent the options which performs least favourably (ranking 4th and 5th respectively). Where options are ranked equally, or it is not possible to differentiate between the options, an equals sign is used.

5.2.4 As illustrated by the rose diagrams overleaf, Option R4 performs most favourably overall, scoring first / joint first under all eight SEA topics. The next best performing option is Option R2, scoring joint first under three SEA topics and second under three SEA topics. This is followed by Options R1 and R3, which perform relatively on par. Option R5 is the least favourably performing option, not ranking first or second under any of the SEA topics.

Appraisal of options for the inter urban / rural swathe

Option R1 - Do minimum

Option R2 - Bus network and infrastructure enhancements

Option R3 - Optimise use of highways network

Option R4 - Rail service enhancements for rural communities

Option R5 - Highway enhancements


biodiversity, flora and fauna


soil and water quality


air quality


cultural heritage


population and human health


landscape, noise and tranquillity


climatic factors


material assets

6. Scheme and proposals assessment

6.1 Road scheme options

6.1.1 KCC recognises that there is a long-term need for investment in the road network in Kent to mitigate the effect of new development and the demand it generates. This is with a view to ensuring that the impacts of the significant level of housing and employment growth put forward for Kent's districts through their local plans can be effectively managed.

6.1.2 In response to this KCC identified scheme proposals for consideration, including through engagement with the 12 districts of Kent.

6.1.3 To support the consideration of these potential schemes for the purposes of the LTP5, the SEA process assessed in 2023 these schemes against the SEA Framework. The aim of the assessment was to support decision making on which schemes to potentially take forward through the LTP5, through highlighting the potential environmental implications of delivering each scheme.

6.1.4 Following a first sieve of schemes, 80 schemes were assessed through the SEA process. These comprise 1) schemes for enhancing road capacity and 2) junction schemes.

6.2 Approach to the assessment

6.2.1 The 80 schemes have been assessed against the LTP5 SEA assessment framework developed during scoping (**Table 2.1**).

6.2.2 The assessment identifies and evaluates the likely significant effects of each potential scheme on the baseline, utilising the SEA Framework as a methodological framework. Findings have been presented through the eight LTP5 SEA themes:

- Biodiversity, flora and fauna
- Air quality
- Population and human health
- Climatic factors
- Soil and water quality
- Cultural heritage
- Landscape, noise and tranquillity
- Material assets

6.2.3 Under each of the above SEA themes, assessment findings have been discussed for each scheme. In response to the assessment findings, potential mitigation measures have also been proposed, and opportunities identified. This is with a view to informing the likely interventions which would likely be required should the scheme come forward.

6.2.4 A primary source of data for this assessment was DEFRA's Magic Map[13], which provides spatial data on both statutory and non-statutory biodiversity, landscape and historic designations, as well as spatial data on priority habitats and species and ancient woodland. Other sources of data included: DEFRA's AQMAs interactive map[14], the UK Government's flood risk map[15], and Natural England's likelihood of Best and Most Versatile (BMV) Agricultural Land map[16].

6.3 Scheme assessment findings

6.3.1 **Tables 6.1 and 6.2** below provide details of the schemes.

Table 6.1 Road capacity schemes

Local authority area	Scheme Name	Mode
Ashford	A28 Great Chart Bypass dualling	Car
Dover	A2 Lydden dualling	Car
Dover	A256 dualling	Car
Maidstone	Blue Bell Hill A229 M2 connection	Car
Maidstone	Leeds to Langley bypass	Car
Maidstone	A20 widening between Hermitage Lane and Mills Road	Car
Sevenoaks	M25 to M26 Eastbound slips	Car
Swale	M2 – Road capacity enhancement	Car
Swale	Sittingbourne Northern Relief Road	Car
Swale	Sittingbourne Southern Relief Road	Car
Thanet	Manston Road to Haine Road link	Car
Thanet	Canterbury Road West to Manston Road link	Car
Thanet	Canterbury Road to Minnis Road link	Car
Thanet	Canterbury Road to Park Lane link	Car
Thanet	Clipper Close to Manston Road link	Car
Thanet	Hartsdown Road to Manston Road link	Car
Thanet	Nash Road widening	Car
Thanet	Manston Road to Nash Road link	Car
Tonbridge and Malling	Malling Road to Ashton Road (A26 and A228 stretches) and A228 Seven Mile Lane stretch – capacity enhancement	Car

[13] DEFRA (no date): 'Magic', [online] available to access via this link
[14] DEFRA (no date): 'AQMAs interactive map', [online] available to access via this link
[15] GOV.UK (no date): 'Check the long-term flood risk for an area in England', [online] available to access via this link
[16] Natural England (2017): 'Likelihood of Best and Most Versatile Agricultural Land – Strategic scale map London and the South East (ALC019)', [online] available to access via this link

Local authority area	Scheme Name	Mode
Tunbridge Wells	A228 Colts Hill bypass	Car
Tunbridge Wells	Five Oak Green bypass	Car
Tunbridge Wells	Paddock Road East site – local road through development linking Mascalls Court Road with Church Lane	Car
Tunbridge Wells	Paddock Road North West site – link road A228 to B2160	Car
Tunbridge Wells	Paddock Road South West site – local roads through development connecting Badsell Road and A228	Car
Tunbridge Wells	A21 Kipping's Road – Kipping's Cross roundabout improvements	Car

Table 6.2 Junction capacity schemes

Local authority area	Scheme Name	Mode
Ashford	Canterbury Road / Simone Weil Avenue – capacity improvement to the traffic signal junction	Car
Ashford	William Harvey Hospital Roundabout – widening of A2070 entry arms	Car
Ashford	Church Hill – Pound Lane – Ashford Road junction signalisation	Car
Canterbury	New A2 junction for Mountfield Park development	Car
Dartford	M25 Junction 1A	Car
Dover	Whitfield Roundabout	Car
Dover	Duke of York Roundabout	Car
Dover	A257 / Sandwich Bypass / Ash Road	Car
Dover	A256 Sandwich Bypass / A258 Deal Road / A256 (S)	Car
Folkestone and Hythe	A20 A260 Spitfire Way junction	Car
Folkestone and Hythe	A260 Alkham Valley Road junction – capacity improvement	Car
Folkestone and Hythe	Alkham Valley Road / A20 London bound on-slip / A20 London bound off-slip – widening of Alkham Valley Road arm	Car
Gravesham	M2 Junction 1 – capacity upgrade	Car

Local authority area	Scheme Name	Mode
Gravesham	A2 Gravesend – upgrades to local junctions	Car
Maidstone	M20 Junction 7	Car
Maidstone	Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction upgrades	Car
Maidstone	Willington Street and Wallis Avenue junction improvements	Car
Maidstone	Willington Street and A20	Car
Sevenoaks	Bat and Ball junction – A225 / A25 – capacity upgrade	Car
Sevenoaks	M25-M26-A21 junction – east facing slips	Car
Swale	Brenley Corner M2	Car
Tonbridge and Malling	Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction	Car
Tunbridge Wells	Halls Hole Road / A264 Pembury Road / Blackhurst Lane junction improvement (roundabout scheme)	Car
Tunbridge Wells	Signalisation of junctions at Sandrock Road and Sandhurst Road on A264	Car

6.3.2 **Tables 6.3 and 6.4** below present a summary of the assessment findings relating to the 80 schemes considered for the LTP5.

6.3.3 **Appendix B** presents the full assessment findings for each scheme and the mitigation measures/enhancements opportunities identified. These highlight the locations of the schemes in conjunction with the following key environmental constraints:

- Special Areas of Conservation
- Special Protection Areas
- Sites of Special Scientific Interest (SSSIs)
- World Heritage Sites
- Green Belt
- National Landscapes
- Air quality management areas

Table 6.3 Summary of road capacity scheme assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Road capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
A28 Great Chart Bypass dualling	↓	?	?	↓	-	?	↓	?
A2 Lydden dualling	↓	?	?	↓	↓	↓	↓	?
A256 dualling	↓	?	?	↓	↓	↓	?	?
Blue Bell Hill A229 M2 connection	↓	?	?	↓	-	?	?	?
Leeds to Langley bypass	?	?	?	↓	↓	↓	↓	?
M25 to M26 Eastbound slips	↓	?	?	↓	-	↓	↓	?
M2 – road capacity enhancement	↓	↓	?	↓	-	↓	↓	?
Sittingbourne Northern Relief Road	↓	↓	?	↓	↓	↓	?	?
Sittingbourne Southern Relief Road	↓	↓	?	↓	↓	↓	↓	?
Manston Road to Haine Road link	?	↓	?	↓	↓	?	↓	?

Road capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Canterbury Road West to Manston Road link	?	↓	?	↓	↓	↓	?	?
Canterbury Road to Minnis Road link	?	↓	?	↓	↓	↓	?	?
Canterbury Road to Park Lane link	?	?	?	↓	↓	↓	?	?
Clipper Close to Manston Road link	?	?	?	↓	↓	?	↓	?
Hartsdown Road to Manston Road link	↓	?	?	↓	↓	↓	?	?
Nash Road widening	?	?	?	↓	-	↓	?	?
Manston Road to Nash Road link	?	?	?	↓	↓	↓	?	?
New relief road between the A25 to the west of Borough Green to the A227 to the north of Borough Green	?	?	?	↓	-	?	↓	?
New relief road between the A227 to the A20 to the east of Borough Green and south of junction 2A of M20	↓	↓	?	↓	-	↓	↓	?
Bellingham Way link road	?	?	?	↓	-	?	?	-
Whitepost field link road	?	?	?	↓	↓	?	?	?
Malling Road to Ashton Road (A26 and A228 stretches) and A228 Seven Mile Lane stretch – capacity enhancement	↓	?	?	↓	-	↓	?	?
A228 Colts Hill bypass	↓	?	?	↓	↓	↓	↓	?

Road capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Five Oak Green bypass	↓	?	?	↓	↓	↓	↓	?
Paddock Road East site – local road through development linking Mascalls Court Road with Church Lane	?	?	?	↓	-	↓	↓	?
Paddock Road North West site – link road A228 to B2160	?	?	?	↓	↓	?	?	?
Paddock Road South West site – local roads through development connecting Badsell Road and A228	?	?	?	↓	↓	?	?	?
A21 Kipping's Road – Kipping's Cross roundabout improvements	?	?	?	↓	-	↓	?	?

Table 6.4 Summary of junction capacity scheme assessment findings

Key			
Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Canterbury Road / Simone Weil Avenue – capacity improvement to the traffic signal junction	-	?	?	↓	-	?	?	?
William Harvey Hospital Roundabout – widening of A2070 entry arms	?	?	?	↓	-	↓	?	?
Church Hill – Pound Lane – Ashford Road junction signalisation	-	-	↑	-	-	-	-	↑
New A2 junction for Mountfield Park development	?	?	?	↓	↓	↓	?	?
M25 Junction 1A	?	?	?	↓	-	?	?	?
Whitfield Roundabout	↓	?	?	↓	-	?	?	?
Duke of York Roundabout	?	?	?	↓	↓	↓	↓	?
A257 / Sandwich Bypass / Ash Road	?	?	?	↓	?	?	?	?
A256 Sandwich Bypass / A258 Deal Road / A256 (S)	↓	?	?	↓	↓	?	?	?
A20 A260 Spitfire Way junction	?	?	?	↓	↓	?	↓	?

Junction capacity scheme

	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
A260 Alkham Valley Road junction – capacity improvement	?	?	?	↓	↓	?	↓	?
Alkham Valley Road / A20 London bound on-slip / A20 London bound off-slip – widening of Alkham Valley Road arm	?	?	?	↓	↓	↓	↓	?
M2 Junction 1 – capacity upgrade	↓	?	?	↓	-	?	↓	?
A2 Gravesend – upgrades to local junctions	↓	?	?	↓	-	↓	?	?
M20 Junction 7	↓	?	?	↓	-	?	↓	?
Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction upgrades	-	?	?	↓	-	?	?	?
Willington Street and Wallis Avenue junction improvements	?	?	?	↓	-	?	?	?
Willington Street and A20	↓	?	?	↓	-	↓	?	?
Bat and Ball junction – A225 / A25 – capacity upgrade	↓	?	?	↓	-	?	?	?
M25-M26-A21 junction – east facing slips	↓	?	?	↓	-	↓	↓	?
Brenley Corner M2	?	?	?	↓	↓	?	↓	?
Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction	-	?	?	↓	-	?	?	?
Halls Hole Road / A264 Pembury Road / Blackhurst Lane junction improvement (roundabout scheme)	↓	?	?	↓	-	↓	↓	?

Junction capacity scheme

	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Signalisation of junctions at Sandrock Road and Sandhurst Road on A264	-	-	↑	-	-	-	-	↑

6.4 Rail, bus and multi-modal proposals

6.4.1 In addition to the schemes highlighted above, KCC have considered a range of other proposals for the LTP5. These focus on rail, bus and multi-modal initiatives which seek to enhance accessibility via public transport and active travel.

6.4.2 To support the consideration of these potential proposals, the SEA process assessed in 2023 these 13 proposals against the SEA Framework. The aim of the assessment was to support decision making on which proposals to potentially take forward through the LTP5, through highlighting the potential implications of delivering each proposal. These proposals are listed in **Tables 6.5 and 6.6** below.

6.4.3 **Tables 6.7 and 6.8** subsequently present a summary of the assessment findings relating to the rail, bus and multi-modal proposals considered for the LTP5. **Appendix C** presents the full assessment findings for each proposal.

Table 6.5 Rail network proposals

Local authority area	Scheme Name	Mode
Multiple	R1 – Freight gauge enhancement for international traffic	Rail
Maidstone	R2 – Maidstone journey time improvements	Rail
Multiple	R3 – Gatwick access improvements	Rail
Multiple	R4 – Dover / Folkestone high speed journey time improvements	Rail
Multiple	R5 – International rail services for Kent	Rail
Canterbury	R6 – Sturry and Canterbury West improvements	Rail
Multiple	R7 – Local services	Rail

Table 6.6 Bus and multi-modal network proposals

Local authority area	Scheme Name	Mode
Multiple	PT1 – Bus Service Improvement Plan	Bus
Multiple	PT2 – Thameside Fastrack Network Growth	Multi-modal
Dover	PT3 – Dover Fastrack Network Growth	Multi-modal
Multiple	PT4 – Mobility as a Service	Multi-modal
Multiple	PT5 – Cycle hire trails	Cycle
Multiple	PT6 – Mobility hubs	Multi-modal

Table 6.7 Summary of rail network proposals assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
R1 – Freight gauge enhancement for international traffic	-	↑	↑	↑	-	?	↑	-
R2 – Maidstone journey time improvements	-	↑	↑	↑	-	↑	↑	-
R3 – Gatwick access improvements	-	↑	↑	↑	-	↑	↑	-
R4 – Dover / Folkestone high speed journey time improvements	-	↑	↑	↑	-	↑	↑	-
R5 – International rail services for Kent	-	-	-	-	-	-	-	-
R6 – Sturry and Canterbury West improvements	↑	↑	↑	-	-	↑	↑	↓
R7 – Local services	-	↑	↑	↑	-	↑	↑	-

Table 6.8 Summary of bus and multi-modal network proposals assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
PT1 – Bus Service Improvement Plan	?	↑	↑	↑	?	?	?	?
PT2 – Thameside Fastrack Network Growth	?	↑	↑	↑	?	?	?	?
PT3 – Dover Fastrack Network Growth	?	↑	↑	↑	?	?	?	?
PT4 – Mobility as a Service	?	↑	↑	↑	?	?	?	?
PT5 – Cycle hire trails	?	↑	↑	↑	-	↑	↑	-
PT6 – Mobility hubs	?	↑	↑	↑	-	↑	↑	-

7. Appraisal of the current version of the LTP5

7.1 Purpose of this chapter

7.1.1 This chapter presents the assessment findings in relation to the current consultation version of the LTP5.

7.2 Preferred approach for the LTP5

7.2.1 KCC has developed its preferred approach for the LTP5 by considering the findings of the Strategic Environmental Assessment's consideration of the impact of proposals and the alternative options. KCC has developed a LTP5 that aims to strike a balance across the transport mix and considers the environmental considerations of this assessment alongside its considerations of its statutory duties as a Local Transport Authority and its wider council strategy which was outlined in section 1.3.

7.2.2 The outcomes KCC has developed are designed to ensure that the transport proposals that have been considered and proposed in the LTP5 make a net positive contribution to the outcomes the LTP5 has established, as outlined in Figure 1.2. In the KCC Supporting Evidence Base, the assessment of the proposals against these outcomes has been undertaken, showing a Red-Amber-Green assessment of the proposals, considering the potential environmental impacts established in this assessment.

7.2.3 The alternative options explored in this assessment have helped to shape the preferred approach of the plan and the specific objectives that have been established in the following ways.

7.2.4 Option U2 has demonstrated the potential role of parking in demand management and accordingly KCC has established policy objective 5A which seeks to strengthen delivery of KCC network management duty to deliver the expeditious movement of traffic by using its new moving traffic enforcement powers and modernising the provision of on-street parking enforcement.

7.2.5 Option U3 concerning optimising the use of existing infrastructure has informed the development of policy objective 1A concerning obtaining the funding necessary to deliver a sustained fall in the value of the backlog of maintenance work so that the existing highway network can better perform to service the needs of highways users. Policy object 4A seeks the return of international rail services, whilst objective 3B seeks to increase the resilience of the highway network for international traffic. Each of these will make best use of existing international rail infrastructure and reduce the burden of international traffic on the highway and aviation networks, helping travel to be made in less environmentally impactful ways.

7.2.6 Concerning Option U4 policy objectives 8A and 8B set out in the LTP5 seek to optimise use of existing public transport networks and services, to boost patronage and enable mode shift for those journeys that chose to. Committing to delivery of the full Bus Service Improvement Plan, subject to

KCC being in receipt of the necessary funding, would make a significant impact on the quality and reliability of bus services, helping to boost patronage and encourage services by operators. This would have positive environmental impacts. Specific proposals for the further growth of the Fastrack bus rapid transit networks in Dover and north Kent provide examples of site-specific proposals that respond to option U4.

7.2.7 Concerning Option U5 regarding highways enhancements in urban areas, the LTP5 has set out that there is an inevitable reliance on the road network and private and commercial vehicle use owing to the design, density, and scale of existing urban areas. The economic and social impacts of highways congestion have been considered by KCC and are reflected in its outcomes and ambition in the LTP5. KCC has, accordingly, identified locations in Kent where urban congestion issues exist and identified that highway enhancement options may be the main or part of a package of solutions. The LTP5 has been developed considering the assessment of proposal options such as the Leeds-Langley bypass, and the Sittingbourne relief roads and has identified that they are an option that will need to be further considered alongside other potential interventions that could also have an impact on congestion in these areas.

7.2.8 To balance these considerations for urban highways enhancements, KCC has developed as part of its LTP a Kent Cycling and Walking Infrastructure Plan (KCWIP) and set out in its LTP5 the urban areas across Kent where investment in the walking network and investment in the cycling network infrastructure could help support increased journeys, deliver on local cycling and walking infrastructure plans.

7.2.9 The KCC LTP5 has also aimed to balance the potential negative environmental impacts of highways schemes and the traffic they generate by aiming for investment to deliver on-street electric vehicle charging infrastructure, as set out in the LTP5 policy objective 7B. The LTP5 states that this will support the switch to zero emission (at the tailpipe) vehicles which has the biggest potential to reduce carbon dioxide equivalent emissions which contribute to climate change.

7.2.10 Concerning the alternative options explored in this assessment for inter-urban and rural swathe areas, the LTP5 has considered the findings and has developed policy objectives and proposals accordingly, as follows.

7.2.11 Option R2 regarding bus network and infrastructure enhancements has been considered by KCC and the LTP5 policy objectives 8A and 8B were developed along with the Bus Service Improvement Plan proposal to ensure that future actions by the Council can aim to secure the funding to deliver a significant and comprehensive programme of improvements to the quality and reliability of bus services across the whole county. KCC's plan for the 2025-2028 period, subject to receiving funding for the plan, aims to work with rural communities and Parish councils to improve the facilities at bus stops to improve comfort and safety which can remove barriers to rural bus use.

7.2.12 Option R3 concerning optimising use of the highways network has been considered and informs KCC's LTP5 proposals and policy objective 2A and 3A and 3B. Objective 2A concerns implementing further, subject to funding, the Council's Vision Zero Road Safety Strategy which can help to make the

existing highway network safer for all types of users, including cyclists and pedestrians where safety is a major barrier to what is a very low environmental impact form of travel. This is further supported by the proposal in the LTP for the KCWIP which has considered inter-urban mid and longer distance journey opportunities to enable more journeys to be made on the existing highway and public rights of way network through appropriate upgrades so that this low environmental impact form of travel can be supported.

7.2.13 Objectives 3A and 3B concern the inter-urban highways network and increasing its resilience and capability to accommodate the high international vehicle flows associated with the Eurotunnel and Port of Dover. These objectives recognise that the A2 / M2 and M20 corridors will remain the main highways network as it is not realistic for a new motorway route to be constructed across Kent to these international crossings. Therefore, the LTP5 has set out proposals for maximising the capability of these existing inter-urban highways routes across Kent by focusing investment in upgrading the in-situ infrastructure and wider vehicle management strategies employed by the government and National Highways. These approaches are likely to be less environmentally impactful than building entirely new motorway routes.

7.2.14 Option R4 has been considered and is reflected in proposals in the LTP5 concerning Local Rail Services, as part of fulfilling Outcome 8. The Local Rail Services proposal aims to improve the frequency of rail services operating on inter-urban routes in the county, to avoid a minimum service of 1 train per hour which offers little flexibility or attraction towards using rail services in rural communities. The LTP5 has reflected on the good baseline of a county with a very high number of rural stations, and hence the change in the transport network needed to deliver more frequent services for rural communities is smaller scale compared to what would be a more environmentally impactful approach of needing to build new rail lines within the county.

7.2.15 Option R5 has been considered and is reflected in policy objectives 5A and 5B which recognise that in some instances the only viable approach due to the location, scale or nature of the challenge to the highway network, which can include from new development, may be the need to add capacity so that KCC can fulfil its network management duty and ensure that essential journeys including access to vital services and opportunities, such as employment, health and education can take place. The KCC LTP5 has set plans for further action to progress proposals considering their maturity and proven case or, where that requires further establishment, the proposal indicates the need for further development work. In many cases, the environmental impacts of the proposal and the options within it will be further developed and considered and will inform the design and delivery to help reduce the likelihood of the potential environmental impacts that are identified in this assessment.

7.2.16 The KCC LTP5 is not yet finalised and KCC aims to consider the feedback from consultation, including comments concerning this assessment, before making a decision whether to adopt the LTP5.

7.3 Approach to the appraisal

7.3.1 The consultation version of the LTP5 takes forward the following schemes and proposals.

Table 7.1 Road capacity schemes

Local authority area	Scheme Name	Mode
Ashford	A28 Great Chart Bypass dualling	Car
Dover	A2 Lydden dualling	Car
Dover	A256 dualling	Car
Maidstone	Blue Bell Hill A229 M2 connection	Car
Maidstone	Leeds to Langley bypass	Car
Maidstone	A20 widening between Hermitage Lane and Mills Road	Car
Sevenoaks	M25 to M26 Eastbound slips	Car
Swale	M2 – Road capacity enhancement	Car
Swale	Sittingbourne Northern Relief Road	Car
Swale	Sittingbourne Southern Relief Road	Car
Thanet	Manston Road to Haine Road link	Car
Thanet	Canterbury Road West to Manston Road link	Car
Thanet	Canterbury Road to Minnis Road link	Car
Thanet	Canterbury Road to Park Lane link	Car
Thanet	Clipper Close to Manston Road link	Car
Thanet	Hartsdown Road to Manston Road link	Car
Thanet	Nash Road widening	Car
Thanet	Manston Road to Nash Road link	Car
Tonbridge and Malling	Malling Road to Ashton Road (A26 and A228 stretches) and A228 Seven Mile Lane stretch – capacity enhancement	Car
Tunbridge Wells	A228 Colts Hill bypass	Car
Tunbridge Wells	Five Oak Green bypass	Car
Tunbridge Wells	Paddock Road East site – local road through development linking Mascalls Court Road with Church Lane	Car
Tunbridge Wells	Paddock Road North West site – link road A228 to B2160	Car

Local authority area	Scheme Name	Mode
Tunbridge Wells	Paddock Road South West site – local roads through development connecting Badsell Road and A228	Car
Tunbridge Wells	A21 Kipping's Road – Kipping's Cross roundabout improvements	Car

Table 7.2 Junction capacity schemes

Local authority area	Scheme Name	Mode
Ashford	Canterbury Road / Simone Weil Avenue – capacity improvement to the traffic signal junction	Car
Ashford	William Harvey Hospital Roundabout – widening of A2070 entry arms	Car
Ashford	Church Hill – Pound Lane – Ashford Road junction signalisation	Car
Canterbury	New A2 junction for Mountfield Park development	Car
Dartford	M25 Junction 1A	Car
Dover	Whitfield Roundabout	Car
Dover	Duke of York Roundabout	Car
Dover	A257 / Sandwich Bypass / Ash Road	Car
Dover	A256 Sandwich Bypass / A258 Deal Road / A256 (S)	Car
Folkestone and Hythe	A20 A260 Spitfire Way junction	Car
Folkestone and Hythe	A260 Alkham Valley Road junction – capacity improvement	Car
Folkestone and Hythe	Alkham Valley Road / A20 London bound on-slip / A20 London bound off-slip – widening of Alkham Valley Road arm	Car
Gravesham	M2 Junction 1 – capacity upgrade	Car
Gravesham	A2 Gravesend – upgrades to local junctions	Car
Maidstone	M20 Junction 7	Car
Maidstone	Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction upgrades	Car
Maidstone	Willington Street and Wallis Avenue junction improvements	Car

Local authority area	Scheme Name	Mode
Maidstone	Willington Street and A20	Car
Sevenoaks	Bat and Ball junction – A225 / A25 – capacity upgrade	Car
Sevenoaks	M25-M26-A21 junction – east facing slips	Car
Swale	Brenley Corner M2	Car
Tonbridge and Malling	Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction	Car
Tunbridge Wells	Halls Hole Road / A264 Pembury Road / Blackhurst Lane junction improvement (roundabout scheme)	Car
Tunbridge Wells	Signalisation of junctions at Sandrock Road and Sandhurst Road on A264	Car

Table 7.3 Rail network proposals

Local authority area	Scheme Name	Mode
Multiple	R1 – Freight gauge enhancement for international traffic	Rail
Maidstone	R2 – Maidstone journey time improvements	Rail
Multiple	R3 – Gatwick access improvements	Rail
Multiple	R4 – Dover / Folkestone high speed journey time improvements	Rail
Multiple	R5 – International rail services for Kent	Rail
Canterbury	R6 – Sturry and Canterbury West improvements	Rail
Multiple	R7 – Local services	Rail

Table 7.4 Bus and multi-modal network proposals

Local authority area	Scheme Name	Mode
Multiple	PT1 – Bus Service Improvement Plan	Bus
Multiple	PT2 – Thameside Fastrack Network Growth	Multi-modal
Dover	PT3 – Dover Fastrack Network Growth	Multi-modal
Multiple	PT4 – Mobility as a Service	Multi-modal
Multiple	PT5 – Cycle hire trails	Cycle
Multiple	PT6 – Mobility hubs	Multi-modal

7.3.2 A summary of the assessment of the schemes and proposals included in the LTP5 is presented overleaf:

Table 7.5 Summary of road capacity scheme assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Road capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
A28 Great Chart Bypass dualling	↓	?	?	↓	-	?	↓	?
A2 Lydden dualling	↓	?	?	↓	↓	↓	↓	?
A256 dualling	↓	?	?	↓	↓	↓	?	?
Blue Bell Hill A229 M2 connection	↓	?	?	↓	-	?	?	?
Leeds to Langley bypass	?	?	?	↓	↓	↓	↓	?
A20 widening between Hermitage Lane and Mills Road	?	?	?	↓	-	?	?	?
M25 to M26 Eastbound slips	↓	?	?	↓	-	↓	↓	?
M2 – road capacity enhancement	↓	↓	?	↓	-	↓	↓	?
Sittingbourne Northern Relief Road	↓	↓	?	↓	↓	↓	?	?
Sittingbourne Southern Relief Road	↓	↓	?	↓	↓	↓	↓	?

Road capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Manston Road to Haine Road link	?	↓	?	↓	↓	?	↓	?
Canterbury Road West to Manston Road link	?	↓	?	↓	↓	↓	?	?
Canterbury Road to Minnis Road link	?	↓	?	↓	↓	↓	?	?
Canterbury Road to Park Lane link	?	?	?	↓	↓	↓	?	?
Clipper Close to Manston Road link	?	?	?	↓	↓	?	↓	?
Hartsdown Road to Manston Road link	↓	?	?	↓	↓	↓	?	?
Nash Road widening	?	?	?	↓	-	↓	?	?
Manston Road to Nash Road link	?	?	?	↓	↓	↓	?	?
Malling Road to Ashton Road (A26 and A228 stretches) and A228 Seven Mile Lane stretch – capacity enhancement	↓	?	?	↓	-	↓	?	?
A228 Colts Hill bypass	↓	?	?	↓	↓	↓	↓	?
Five Oak Green bypass	↓	?	?	↓	↓	↓	↓	?
Paddock Road East site – local road through development linking Mascalls Court Road with Church Lane	?	?	?	↓	-	↓	↓	?
Paddock Road North West site – link road A228 to B2160	?	?	?	↓	↓	?	?	?

Road capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Paddock Road South West site – local roads through development connecting Badsell Road and A228	?	?	?	↓	↓	?	?	?
A21 Kipping's Road – Kipping's Cross roundabout improvements	?	?	?	↓	-	↓	?	?

Table 7.6 Summary of junction capacity scheme assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Canterbury Road / Simone Weil Avenue – capacity improvement to the traffic signal junction	-	?	?	↓	-	?	?	?
William Harvey Hospital Roundabout – widening of A2070 entry arms	?	?	?	↓	-	↓	?	?
Church Hill – Pound Lane – Ashford Road junction signalisation	-	-	↑	-	-	-	-	↑
New A2 junction for Mountfield Park development	?	?	?	↓	↓	↓	?	?
M25 Junction 1A	?	?	?	↓	-	?	?	?
Whitfield Roundabout	↓	?	?	↓	-	?	?	?
Duke of York Roundabout	?	?	?	↓	↓	↓	↓	?
A257 / Sandwich Bypass / Ash Road	?	?	?	↓	?	?	?	?
A256 Sandwich Bypass / A258 Deal Road / A256 (S)	↓	?	?	↓	↓	?	?	?
A20 A260 Spitfire Way junction	?	?	?	↓	↓	?	↓	?

Junction capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
A260 Alkham Valley Road junction – capacity improvement	?	?	?	↓	↓	?	↓	?
Alkham Valley Road / A20 London bound on-slip / A20 London bound off-slip – widening of Alkham Valley Road arm	?	?	?	↓	↓	↓	↓	?
M2 Junction 1 – capacity upgrade	↓	?	?	↓	-	?	↓	?
A2 Gravesend – upgrades to local junctions	↓	?	?	↓	-	↓	?	?
M20 Junction 7	↓	?	?	↓	-	?	↓	?
Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction upgrades	-	?	?	↓	-	?	?	?
Willington Street and Wallis Avenue junction improvements	?	?	?	↓	-	?	?	?
Willington Street and A20	↓	?	?	↓	-	↓	?	?
Bat and Ball junction – A225 / A25 – capacity upgrade	↓	?	?	↓	-	?	?	?
M25-M26-A21 junction – east facing slips	↓	?	?	↓	-	↓	↓	?
Brenley Corner M2	?	?	?	↓	↓	?	↓	?
Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction	-	?	?	↓	-	?	?	?
Halls Hole Road / A264 Pembury Road / Blackhurst Lane junction improvement (roundabout scheme)	↓	?	?	↓	-	↓	↓	?

Junction capacity scheme

	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
Signalisation of junctions at Sandrock Road and Sandhurst Road on A264	-	-	↑	-	-	-	-	↑

Table 7.7 Summary of rail network proposals assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme

	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
R1 – Freight gauge enhancement for international traffic	-	↑	↑	↑	-	?	↑	-
R2 – Maidstone journey time improvements	-	↑	↑	↑	-	↑	↑	-
R3 – Gatwick access improvements	-	↑	↑	↑	-	↑	↑	-
R4 – Dover / Folkestone high speed journey time improvements	-	↑	↑	↑	-	↑	↑	-
R5 – International rail services for Kent	-	-	-	-	-	-	-	-
R6 – Sturry and Canterbury West improvements	↑	↑	↑	-	-	↑	↑	↓
R7 – Local services	-	↑	↑	↑	-	↑	↑	-

Table 7.8 Summary of bus and multi-modal network proposals assessment findings

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Junction capacity scheme	Biodiversity, flora and fauna	Air quality	Population and human health	Climatic factors	Soil and water quality	Cultural heritage	Landscape, noise and tranquillity	Material assets
PT1 – Bus Service Improvement Plan	?	↑	↑	↑	?	?	?	?
PT2 – Thameside Fastrack Network Growth	?	↑	↑	↑	?	?	?	?
PT3 – Dover Fastrack Network Growth	?	↑	↑	↑	?	?	?	?
PT4 – Mobility as a Service	?	↑	↑	↑	?	?	?	?
PT5 – Cycle hire trails	?	↑	↑	↑	-	↑	↑	-
PT6 – Mobility hubs	?	↑	↑	↑	-	↑	↑	-

7.3.3 Detailed assessment findings relating to the schemes are presented in **Appendix B** and **Appendix C**.

Cumulative effects with other plans and programmes

7.3.4 Cumulative effects occur from the combined impacts of policies and proposals on specific areas or sensitive receptors.

7.3.5 In the context of SEA, cumulative effects can arise as a result of the in-combination and synergistic effects of a plan's policies and proposals. Comprising 'intra-plan' effects, these interactions have been discussed above in the evaluation of the in-combination and synergistic effects of the various policies of the LTP.

7.3.6 Cumulative effects can also result from the combined impacts of a plan with impacts of another plan, or the 'inter-plan' effects. These can affect the same receptor, resulting in in-combination or synergistic effects. The LTP therefore has the potential to combine with other planned or on-going activities in the vicinity of Kent to result in cumulative effects.

7.3.7 The LTP is being prepared in a context which will deliver significant growth in Kent over the next 20 years.

Ashford

7.3.8 The Ashford Local Plan 2030 was adopted in February 2019. It identifies a total housing requirement of 13,118 homes over the plan period to 2030.

Canterbury

7.3.9 The Canterbury District Local Plan was adopted in July 2017. Consultation on the new Local Plan 2040 was undertaken in spring 2024. The new Local Plan seeks to deliver 9,346 homes in the plan period to 2040.

Dartford

7.3.10 The Dartford Plan was adopted in April 2024. It identifies a total housing requirement of 12,640 homes over the plan period.

Dover

7.3.11 The new Dover District Local Plan underwent examination in December 2023. The modified Local Plan seeks to deliver at least 10,998 net additional homes in the period to 2040.

Folkestone and Hythe

7.3.12 The Folkestone and Hythe Core Strategy Review was adopted in March 2022, whilst the Places and Policies Local Plan was adopted in September 2020. It identifies a total housing requirement of 13,284 homes over the plan period.

Gravesham

7.3.13 The Gravesham Local Plan Core Strategy was adopted in September 2014. It identifies a total housing requirement of 6,170 homes over the plan period. The Gravesham Local Plan Partial Review is currently being developed.

Maidstone

7.3.14 The Maidstone Local Plan Review was adopted in March 2024. It identifies a total housing requirement of 19,669 homes over the plan period.

Sevenoaks

7.3.15 The Sevenoaks Core Strategy was adopted in February 2011, whilst the Allocations and Development Management Plan was adopted in February 2015. The latter identifies a total housing requirement of 3,300 homes over the plan period. The new Local Plan 'Plan 2040' is currently being developed and seeks to deliver 712 new homes a year from 2025 until 2040

Swale

7.3.16 The Swale Local Plan, also referred to as 'Bearing Fruits 2031', was adopted in July 2017. It identifies a total housing requirement of 13,192 homes over the plan period to 2031.

Thanet

7.3.17 The Thanet Local Plan was adopted in July 2020. It identifies a total housing requirement of 17,140 homes over the plan period.

Tonbridge and Malling

7.3.18 The Tonbridge and Malling Core Strategy was adopted in September 2007. The first draft of the new Local Plan was consulted on in Autumn 2022. Whilst no number for housing delivery was proposed, local housing needs are in the region of 839 dwellings per annum.

Tunbridge Wells

7.3.19 The Tunbridge Wells Core Strategy was adopted in June 2010, whilst the Site Allocations Local Plan was adopted in July 2016. Examination hearings on the new Local Plan are being held in June and July 2024; the latest version of the new Local Plan seeks to deliver in the region of 7,221 dwellings.

7.3.20 Furthermore, the combination of LTP proposals and other proposals and activities being taken forward within and outside Kent have the potential to lead to cumulative effects. Examples include:

- Development of the Lower Thames Crossing between Gravesham and Thurrock in Essex.
- Proposals taken forward through the provisions of the Kent and Medway Economic Framework.
- Upgrades to the strategic road network through National Highways.
- Minerals proposals.
- Proposals to increase/manage visitor numbers to the two National Landscapes, the World Heritage Site, and other key visitor destinations in Kent.
- Activities designed to enhance sub-regional green infrastructure networks.

7.3.21 In this context, potential effects (both positive and negative) which may occur as a result of the in-combination effects of the LTP5 and other plans and proposals include the following:

- Increases in traffic flows and congestion from the in-combination effects of development and transport capacity enhancements, with potential impacts on air and noise quality, landscape and townscape character and the setting of the historic environment. However, the in-combination effects of proposals on enhancing public transport and pedestrian and cycle infrastructure may help limit potential negative effects and secure positive effects in this regard.
- Cumulative impacts on ecological networks. This is from the in-combination effects of new development and associated infrastructure on habitats and biodiversity corridors. However, enhancements to green infrastructure provision facilitated through plan proposals and other projects in the area, as well as an increased focus on biodiversity net gain also have significant potential to support local, sub-regional and regional ecological networks.
- Cumulative and synergistic impacts on greenhouse gas emissions from growth areas and the LTP proposals which support them.
- Impacts from a release of induced demand for transport from the in-combination effects of the LTP and nationally significant road and rail enhancements.
- Impacts on flood risk from the in-combination effects of new development, including relating to surface water and fluvial flooding.
- Enhancements to sub-regional green infrastructure networks.
- Improvements in accessibility resulting from the in-combination effects of enhancements to public transport and walking and cycling networks and public realm enhancements.

7.3.22 For many potential cumulative effects, the policy approaches proposed by the various plans and programmes will help reduce the significance of these in-combination impacts. However, monitoring for the plans and programmes will be a key means of ensuring that unforeseen adverse environmental and socio-economic effects are highlighted, and remedial action can be taken where adverse effects arise.

7.4 Recommendations for implementation of the LTP5

7.4.1 A number of recommendations can be made at this stage in relation to each of the SEA themes. The following table therefore highlights a number of recommendations which should be considered during the development of schemes and proposals proposed for delivery through the LTP5.

Recommendations for consideration during the implementation of the LTP5

SEA theme	Mitigation and enhancement measures for consideration during the implementation of LTP5 proposals
Biodiversity, flora and fauna 	• Potential impacts on biodiversity habitats should be considered during scheme development, avoidance and mitigation measures implemented, and opportunities for maximising net gain explored. • Opportunities to enhance ecological networks through appropriate planting and green infrastructure enhancements should be sought, supporting a premise of environmental net gain and delivering multifunctional benefits. • New and improved lighting and signage should be designed to minimise impacts on nocturnal species. • Development of a programme of works to help ensure that SSSIs and other important designated sites affected by the transport network are brought into favourable condition.
Air quality 	• Green infrastructure enhancements should be delivered alongside new infrastructure and designed to support air quality improvements, with a view to reducing exposures of key pollutants. • Comprehensive monitoring of emissions from transport should be undertaken.
Population and human health 	• Incorporate road safety schemes within scheme development for vulnerable road users. • Encourage design which supports the needs of mobility-impaired and vulnerable groups. • Opportunities to encourage inward investment and growth in areas of improved sustainable transport access should be sought.
Climatic factors 	• Transport proposals should seek to maintain carbon sequestered in soils and habitats, and seek to increase carbon capture through provision of semi-natural habitats including trees, wetlands and grasslands. • Comprehensive monitoring of emissions from transport should be undertaken. • Proposals associated with the LTP5 should seek to increase the resilience of infrastructure to the anticipated impacts of climate change. • The use of permeable surfacing should be prioritised in scheme design.
Soil and water quality 	• New infrastructure should be supported by permeable surfaces and appropriate drainage systems where necessary, to reduce surface water run-off and maintain or improve attenuation rates. • Provision of sustainable drainage systems, including through green and blue infrastructure provision should be sought where possible alongside new transport infrastructure. •

SEA theme	Mitigation and enhancement measures for consideration during the implementation of LTP5 proposals
Cultural heritage 	• Potential impacts on the historic environment should be appropriately considered at scheme design. • The significance of both designated and undesignated heritage assets should be a key consideration in scheme development. • New transport infrastructure should be designed to facilitate enhancements to the fabric and setting of the historic environment. • Opportunities for enhancing access to and promoting understanding of the historic environment should be sought. • Maintenance regimes should seek to facilitate enhancements to the fabric and setting of designated and undesignated features and areas of historic environment interest. • Kent's archaeological resource should be a key consideration in the development of transport schemes.
Landscape, noise and tranquillity 	• New infrastructure should be designed to facilitate enhancements to the quality of the public realm and landscape, townscape and villagescape character. • Transport infrastructure delivery should avoid the loss of existing trees and landscape features where possible. • Green infrastructure enhancements should be sought alongside new and enhanced transport infrastructure provision. • Maintenance regimes should seek to facilitate enhancements to local character. • Low noise surfacing should be integrated in new transport provision and maintenance regimes.
Material assets 	• Schemes associated with proposals should seek to limit waste arisings during construction. • Schemes should seek to incorporate the use of reused and recycled materials. • Scheme design should seek to extend project life and reduce future maintenance requirements through the use of longer-life materials.

8. Next steps

8.1.1 This Environmental Report has been published to accompany the draft LTP5 and released alongside the plan for consultation. Following the consultation period, comments will be reviewed and analysed. The final LTP5 will then be developed, with a view to adoption in December 2024. Any changes arising to the LTP5 will need to be assessed as part of the SEA process.

8.1.2 SEA Regulations 16.3c)(iii) and 16.4 require that a 'statement' be made available to accompany the plan, as soon as possible after the adoption of the plan or programme. The purpose of the SEA Adoption Statement is to outline how the SEA process has influenced and informed the LTP5 development process and demonstrate how consultation on the SEA has been taken into account.

8.1.3 As the regulations outline, the statement should contain the following information:

- The reasons for choosing the preferred measures for the LTP5 as adopted in the light of other reasonable alternatives dealt with;
- How environmental considerations have been integrated into the LTP5;
- How consultation responses have been taken into account; and
- Measures that are to be taken to monitor the significant environmental effects of the LTP5.

8.1.4 To meet these requirements, an SEA Adoption Statement will be published with the adopted version of the LTP5.

Appendix A Summary of scoping baseline information

A.1 Biodiversity, flora and fauna 

Biodiversity is essential to maintaining a healthy ecosystem, human health, wellbeing and the economy. It is defined as the variety of life on Earth, in all its forms, and the interactions between them.

Kent has a rich and varied biodiverse resource, with the area's environment including:

- Special Protection Areas (SPAs) relating to the protection of birds.
- Special Areas of Conservation (SAC) to provide increased protection to a variety of wild animals plants and habitats to conserve biodiversity.
- Conservation of wetlands the through Ramsar convention.
- Six Marine Conservation Zones (MCZs) to protect habitats and wildlife in the seas from Medway Estuary to Dover.
- National Nature Reserves (NNRs).
- Biodiversity Opportunity Areas.
- 98 Sites of Special Scientific Interest (SSSIs).
- 36 Biodiversity Action Plan priority habitats.
- 99 Sites of Special Scientific Interest (SSSI), covering 8.7% of the County.
- 466 Local Wildlife Sites, covering 7% of the County.
- 154 Roadside Nature Reserves, with a combined length of 89km.
- Two Areas of Outstanding Natural Beauty:
  - High Weald.
  - Kent Downs.
- Ancient Woodland in 13 locations.
- Six RSPB Reserves.
- Woodland Trust Reserves.

The Kent Biodiversity Strategy (2020 – 2045) details Kent's current biodiverse environment, and a strategy for the maintenance, restoration, and creation of habitats.

Kent's Biodiversity Strategy identifies 36 Biodiversity Action Plan (BAP) priority habitats, and 387 priority species. Of these, it identifies 13 priority habitats and ten species with specific efforts requiring focus.

27% of the County is semi-natural habitat. In relation to biodiversity, Kent has[17]:

- 11% of England's ancient semi-natural woodland.
- 16% of England's saline lagoons.
- 40% of the UK's coastal vegetated shingle at Dungeness.
- 35% of the UK's coastal chalk.
- 5% of the UK's and 20% of the south east's chalk grassland.
- The largest UK population of Lizard Orchids at Sandwich Bay.
- Over 20,000 species have been recorded in Kent: nearly 30% of all UK species.
- Over 3,400 rare and threatened species have been recorded in the County.

Kent's plans for growth place pressure on land resource which in turn impacts Kent's biodiverse landscape. Kent's unique location as a gateway to Europe and its proximity to London places pressures on road, rail, sea and air links, and also makes the County an attractive place to live and work – all requiring development and infrastructure and placing a growing requirement on intensive food production and farming.

The Kent Biodiversity Strategy notes the importance of meeting the county's demands whilst safeguarding the future of our wildlife and habitats.

To contribute towards this safeguarding, it is important that the LTP5 retains connectivity of existing habitats. It has the opportunity to contribute towards one of the key goals of the Biodiversity Strategy:

"Connecting people with the natural environment: by 2045 the widest possible range of ages and backgrounds will be benefiting from the mental and physical health benefits of the natural environment; and we will have inspired the next generation to take on guardianship of the county's biodiversity."

Concerning sites covered by the Conservation of Habitats and Species Regulations 2017, the SEA will be developed along with a Habitats Regulation Assessment (HRA), beginning with the screening stage once the draft proposals and policies are identified for consideration for LTP5.

A.2 Air quality

Kent, together with Medway Council and Kent's 12 district and borough councils, have formed the Kent and Medway Air Quality Partnership. The participating authorities support each other in meeting their legal duties to monitor and address areas of poor air quality.

Local Authorities in Kent have declared 36 Air Quality Management Areas (AQMAs). Transport, traffic, and congestion are often the main contributor to excessive levels of pollution and poor air quality, as can be evidenced by the fact that 34 of the 36 AQMAs lie along roads, or roads on approach to and surrounding town centres.

[17] Kent Biodiversity Strategy (2020 – 2045)

The key pollutants which affect human health and are of most relevance to the SEA of the LTP5 are nitrogen dioxide (NO_2), PM10 and PM2.5 (particulate matter up to 10 and 2.5 micrometres in size respectively). Air pollutants are also harmful to the natural environment, such as due to nitrogen deposition. Air pollution generation in proximity to particularly sensitive environments, such as those with designated protections, will need some consideration additional to limiting to the location of AQMAs.

The latest monitoring data for Kent is presented in the Kent and Medway Air Quality Monitoring Network (KMAQMN) Annual Report (2019).

Long-term trends for NO_2, PM10 and PM2.5 are generally declining and are generally below air quality objectives, however there are still instances of exceedances, particularly with NO_2 at Maidstone Upper Stone Street[18], and PM10 at Swale St Pauls Street.[19] There is also some evidence of an increasing trend in PM2.5 in Kent – notable given this is also now set to be a regulated target following the introduction into law of the Environment Act (2021). However, it is noted that there is a lack of comprehensive/consistent monitoring of PM2.5 and therefore trends also may not pick up where there is an absence of data.

Poor air quality has significant effects on human health, and it is estimated that in 2017, there were 922 deaths associated with particulate matter (PM2.5) exposure across Kent and Medway.[20]

Further effects include the threat to altering the structure and diversity of ecosystems. A 2022 study suggests that traffic related pollution had a negative effect on pollinator and flowering plant richness.[21]

The Kent and Medway Low Emissions Strategy (June 2020) outlines several key indicators for monitoring progress against baselines relating to transport. These are shown in **Table A.1** below.

Table A.1 Kent and Medway Energy and Low Emissions Strategy transport indicators

Indicator	Baseline
Carbon emissions from the transport sector.	3,953.7 kilo tonnes of CO_2 (2017).
Active travel to school (walking, cycling, scooting).	64.2% of primary school children. 36.6% of secondary school children (2018).
Active travel to work (census data – updated every 10 years).	In 2011, 32% of people that work within 5km of their home actively travelled to work in Kent.
Journey delays on local A-roads (excluding Medway).	35.4 seconds per vehicle per mile (2018).
Electric vehicle registrations.	4,845 electric vehicle registrations (December 2019)

[18] KMAQMN Annual Report 2019: Table 6 & 7
[19] KMAQMN Annual Report 2019: Table 9
[20] Kent and Medway Energy and Low Emissions Strategy (June 2020)
[21] Fisher et al. (2022): 'Can biodiverse streetscapes mitigate the effects of noise and air pollution on human wellbeing?', [online] available to access via this link

Indicator	Baseline
Road transport fuel consumption.	1,182,943 tons of oil equivalent.
Number of car share / car clubs in operation.	To be developed.
Kilometres of footpath / cycle lane improved.	To be developed.

The LTP5 will aid in delivering the aims of the Energy and Low Emissions Strategy.

A.3 Population and human health

Approximately 1,590,000 people live in Kent.[22] The area's population has been growing steadily over the past 20 years, by an average of 13,000 people per year, and by the LTP5's 2038 horizon year, Kent's population is expected to have grown by a further 180,000 people (a rise of 11%) to reach 1,770,000.[23]

Kent also has an ageing population, which is ageing slightly faster than the rest of the UK. The median age for Kent's residents is now 42.2, an increase of 2.8 years in the past 20 years, although the growth in median age has begun to level since 2015. The district with the highest median age is Folkestone and Hythe, at 47.6 years, whilst the youngest district is Dartford at 37.4 years.

As highlighted in the Kent Strategic Delivery Plan (2020 – 2023), as the population grows and ages, the infrastructure needs of Kent's residents will change, particularly requiring greater social care and access to health care systems.

It is therefore essential that Kent has a robust transport network that will allow residents to have access to both jobs and services. Changes in population and travel patterns will need to be monitored to ensure that proposed transport priorities align with the evolving needs of Kent's residents.

The mortality rate for Kent was 1,028 deaths per 100,000 people in 2020[24], which is slightly lower than the overall rate for England at 1,042 deaths per 100,000 people.

Obesity is now widely acknowledged as one of the most serious long-term public health problems facing the UK. Based on data from the National Child Measurement Programme[25], 25.2% of Kent's children aged 4-5 are classed as overweight or obese. This is the 39th highest ranking in England and falls above the England average of 23% and South East England average of 21.9%.

Recent trends suggest childhood obesity rates in Kent have been increasing and getting worse over the past 5 years. Obesity tends to track into adulthood, so obese children are more likely to become obese adults. There is also some concern that the Covid-19 pandemic and the impact it has had on lifestyles may lead to a further worsening in obesity levels.

LTP5 has the potential to contribute towards improved health in the County through improving the attractiveness of walking and cycling for trips to, from and during work

[22] ONS: MYE4: Population estimates mid-2020 edition
[23] ONS: 2018-based subnational population projections
[24] ONS: Deaths Registered in England and Wales, 2020
[25] Public Health England: NHS Digital, National Child Measurement Programme 2019/20

and during leisure pursuits. At present, 35% of Kent's adults walk or cycle at least 5 times per week. Gravesham has the lowest uptake in active travel, followed by Dartford.

A.4 Climatic factors

Road and rail traffic emit carbon dioxide (CO_2), a greenhouse gas (GHG) that contributes towards climate change. Infrastructure, buildings, businesses, and community cohesion are all likely to feel the impacts of more regular severe flooding, heatwaves, extreme weather events and reduced access to important resources like water. It is a key area for Kent Council to engage in resilience thinking, and a Climate Emergency was recognised on 23rd May 2019 through which a commitment was made to reduce GHG emissions to net zero by 2050.

The Climate Change Risk and Impact Assessment for Kent and Medway (CCRIA) was produced in 2019. It notes that, based on the Met Office's UK Climate Projections, by 2080 South East England is expected to experience:

- Hotter summers by c. 5-6°C.
- Warmer winters by c. 3-4°C.
- Decreased summer rainfall by 30-50%.
- Increased winter rainfall by 20-30%.
- Sea level rise by 0.8m.

The impacts of climate change are likely to be felt acutely in Kent, particularly due to its extensive coastline and position at the south-eastern most tip of Britain. It is important that the impacts of climate change are considered as LTP5 is developed, and alongside other drivers for change including growth, changing demographics and new development.

A.5 Water

Kent's water quality is primarily impacted by chemical pollution from sewage treatment work, transport and overall modifications to the water body.

Kent's waterway health is determined by the Water Framework Directive (WFD) and the Bathing Water Directive (BWD), concluding in results such as:

- 66% of waters are currently being heavily modified or designated as artificial.
- 11 (9%) of Kent's water bodies (124 total) met a 'good' ecological status.
- 28 water bodies are required to meet 'good' ecological status by 2021, in line with County water objectives.

Kent achieved 62% from the EU's BWD Classification System in comparison to the national average 67.1% for 'excellent'.[26] KCC is the Lead Local Flood Authority (LLFA) for the county under the Flood and Water Management Act in 2010.

Two River Basin Districts (RBD) are situated within Kent, those being the Thames RBD and the Southeast RBD. These are managed by their respective River Basin Management Plans, which aim to improve water quality by 2027.

As outlined in the River Basin Management Plans, towns / cities and transport affect 9% and 17% of water bodies in the Southeast RBD and Thames RBD, respectively.

The LTP5 has the potential to contribute towards improved water quality in the County through improving the attractiveness of active travel and mitigating transport contributing factors, such as:

- Reducing roads and pavements pollutants, such as PM10, PM2.5, rubber, grit, oil, vehicle emissions, detergents, and road salts.
- Improving impermeable road surfaces to affect water runoff, which will reduce travel of contaminated water sources, impacting soil, vegetation, and water sources.
- Reducing the severity of the impacts caused by contaminated water run-off in relation to the design of existing and proposed road drainage systems, along with the general construction of the road reserve.

A.6 Cultural heritage

Kent has a long history of human activity spanning back thousands of years, consequently creating its renowned heritage. The County has a large list of protected cultural heritage features, listed buildings, ancient monuments, historic parks and gardens, conservation areas and World Heritage Sites (WHSs).

Parts of the Kent transport network are themselves important cultural and heritage features, from sections like the A2 Watling Way and Pilgrims Way through to those routes making up sections of the Viking Coastal trail, amongst others. The way the Kent transport network is managed and grows is a consideration both for how the county's heritage and cultural assets are accessed as well as how its impacts those features that are part of the transport network itself and support ways of life in Kent.

Across the County there are tens of thousands of designated sites listed in the National Heritage List for England, covering Battlefields, Building Preservation Notices, Conservation Areas, Heritage at Risk, Listed Buildings, Parks and Gardens, Protected Wrecks, Scheduled Monuments, and WHSs. The list is growing, and the volume of sites mean depicting them in a single county-wide view is not possible. Dense clusters of designated sites are often found in historic town centres, whilst there also remain a widespread designation of sites in more contemporary settlement such as post-war suburbs. Rural areas also have a range of designated sites.

[26] Kent County Council (2020): 'Kent State of the Environment Report: Water Quality Update', [online] available to access via this link

The abundance of designated sites across different types of land use in Kent highlights the requirement for transport spatially specific policies and proposals to give conscious consideration of potential impacts on heritage. The risk of adverse impacts are high given how spatially comprehensive transport networks are and their historic development intractably linked to settlement and industry and arising heritage sites from those.

At the LTP stage, consideration will be given to whether policies developed for implementation by LTP will systematically generate risk to sites with heritage designations through their application across the County. For proposals, any that have spatial precision appropriate to the stage of their development (i.e. typically pre-feasibility to early feasibility) will be considered with the local heritage designations and risks of impact considered.

Heritage considerations made through the SEA and the LTP development process can also steer and inform the very policies and proposals to be developed. For example, if a world heritage site or a historic town centre is burdened by motor vehicle traffic, conscious consideration of these challenges can help to shape policies and proposals that are specifically designed to lessen the impact.

In a similar vein, conscious consideration of the historic environment affords the opportunity to exploit it, such as utilising formerly redundant rail routes for new corridors for movement such as walking and cycling, or even re-establishment of passenger rail lines. The restoration and conversion of historic structures such as these can be a positive benefit from a transport scheme.

It will be beyond the LTP per se and within the optioneering, implementation and, where necessary, any consents process that proposals will complete their full assessment of impact on heritage designated sites and be tailored to reduce risks of impact. However, at the stage of the LTP's formulation, consideration of heritage assets in areas that transport challenges and opportunities are explored through new policies and proposals can establish the future implementation of the plan on a sound footing to generate a set of outcomes that are predominantly likely to affect heritage and the historic built environment beneficially rather than adversely.

The rankings of Local Authorities (LAs) in Kent in relation to the Heritage Index within the UK, formulated by the Royal School of Arts, Commerce and Manufactures, is designed to support data-led decision making on heritage at the local level. It is helpful to consider at this scoping stage of the LTP SEA, particularly from the perspective of the macro county-wide perspective KCC has as the upper tier authority and policy maker as the Local Transport Authority.

In the ranking, each local / unitary authority is ranked on, amongst other things less relevant to the LTP5, its:

- Historic built environment.
- Industrial heritage.
- Parks and open spaces.
- Landscape and natural heritage.

There were 325 authorities ranked for the 2016 study and 316 for the 2020 study. Kent's best-ranking authority in the Heritage Index was Tunbridge Wells at 36, followed by Dover and Swale ranking 49 and 61 respectively in 2020. The high

placing of numerous parts of Kent indicates how important cultural and heritage considerations should be for the SEA and LTP development.

Key information relating to Kent Local Authority Heritage rankings include:

- Six local or unitary authorities in Kent are placed in the top 100 heritage locations in England.
- Dover, Thanet, Canterbury, Folkestone and Hythe, Gravesham, Ashford and Dartford all improved positions in 2020, with Ashford rising 61 places.
- Swale, Medway, Tonbridge and Malling, Sevenoaks and Maidstone all showed modest falls in positions.

Local landmarks have an important role in giving character to an area. In Kent, a WHS concerns the historic Canterbury town centre, whilst larger sections of the parts of the County are classed as conservation areas.

The World Heritage sites situated in Canterbury are:

- Canterbury Cathedral.
- Augustine's Abbey.
- St Martin's Church.

The implementation of LTP5 should have and maintain a positive impact on these sites. This will help maintain the character of these sites and continue to allow them to play their important role within the County.

A.7 Landscape

The Kentish landscape has evolved and developed over several years, due to creation from interactions between the natural environment and human activity. Kent's cultural heritage has aided the development of its unique landscape, fields of varying sizes and shapes, within the networks of sunken lanes add to the historic heritage and rural feel.

Kent's Landscape Information System aids information about both Kent's biodiversity and its landscape. National Landscapes situated within Kent include the Kent Downs and High Weald, which cover 33% of Kent's land area. The Kent Downs is protected, acknowledging the important landscape character. At a local level, there are more localised policies seeking to protect this.

In addition, seven of the 159 National Character Areas (NCAs) are situated in Kent. These areas are sensitive to new transport infrastructure updates, such as new roads, road improvements and increased traffic. NCAs situated in Kent include:

- NCA 81 – Greater Thames Estuary.
- NCA 113 – North Kent Plains.
- NCA 119 – North Downs.
- NCA 120 - Wealden Greensand.
- NCA 121 – Low Weald.

- NCA 122 – High Weald.
- NCA 123 – Romney Marshes.

The Kent landscape offers dramatic views, high levels of biodiversity and wildlife and is also held together by historic and cultural heritage.

The heritage of the Kent countryside includes the local materials that were historically used, including flint, chalk, timber and tile which add to the landscape and character of the countryside. Alongside this, Landscape Assessments provide information on character area boundaries and development of landscape throughout the decades of Kent.

The LTP5 must aid in the protection of NCA sites and the general Kent landscape using relevant national policy alongside local knowledge and expertise to guide assessment of potential impacts.

A.8 Noise and tranquility

Tranquillity is an important factor in the quality of life. Kent is known and identified as the 'Garden of England, however some features of the county can lead to some unwanted noise and disruption to the tranquillity.

Noise and tranquillity have been included within this Scoping Report as the construction and operation of transport infrastructure can cause negative levels of noise pollution. This has potential to negatively impact other SEA topic areas such as landscape, biodiversity, cultural heritage and human health. With that said, this topic is not required within the SEA regulation.

It is noted that local authorities within Kent are trying to help with some of the issues of noise nuisance, aided by the environmental health noise nuisance service, which include:

- Dover District Council.
- Maidstone Borough Council.
- Shepway District Council.
- Thanet District Council.

Most of the issues with noise throughout Kent can be categorised due to the size of the towns. Typically, the higher the population, the more likely residents suffer from higher noise pollution and nuisance.

Road traffic and railway noise data is a product of the strategic noise mapping exercise undertaken by Defra to meet the requirements of the Environmental Noise Directive (Directive 2002/49/EC) and the Environmental Noise (England) Regulations 2006 (as amended). The road noise maps were produced in 2017, with the railway noise maps produced in 2012.

Results are shown for the LAeq,16h indicator, which indicates the annual average noise level (in dB) for the 16-hour period between 0700-2300.

The areas mainly affected by traffic and rail noise are on the primary road and rail networks throughout Kent.

Additional to road and rail noise from transport, Kent also experiences noise impacts from flight paths for airports within its boundaries and beyond. Most notably, Gatwick Airport generates air traffic which approaches the airport from the east across parts of Kent. KCC works through the planning system to address changes that may arise from future airport proposals at Gatwick and elsewhere. LTP5 will continue to make clear KCC's position on specific proposals and its general position concerning air travel on travel and the environment in Kent.

Noise not only affects people but impacts on protected and priority species and designated wildlife sites. The effect on these of noise from transport policies and proposals developed for LTP5 will be assessed.

A.9 Material assets

SEA Regulations require significant effects on material assets to be considered within an SEA, but they do not define them, meaning that these might be interpreted in several different ways.

In relation to transport related assets, KCC manages:

- 5,400 miles of roads.
- 2,500 structures.
- 250,000 roadside drains.
- 500,000 trees.
- 120,000 streetlights.
- 4,000 miles of footways.
- 740 sets of permanent traffic signals.
- 470 electronic information signs.
- 170 CCTV cameras.

The natural assets included above, such as trees and roadside verges can play a positive role in local distinctiveness and placemaking. They also encourage biodiversity and are likely to positively affect climate change mitigation and carbon reduction.

Material assets can relate to either built or natural assets. Whilst assets such as footpaths, roads and structures facilitate development, the maintenance of all transport networks across Kent, require materials.

The Kent Environment Strategy[27] notes:

- The target for landfill reduction (less than 2% by 2020/21), with Kent only sending 1.7% of its total manual waste tonnage to landfill in 2018/19. Medway is noted to be sending 10.8%.

[27] Kent County Council (2020): 'Kent State of the Environment Report: Waste Update', [online] available to access via this link

- Residual household waste collected by Kent County Council has fallen from 665.1kg in 2010/11 to 535.3kg in 2018/19. Household waste sent for reuse is noted to continue to be slowly increasing.
- Commercial and industrial waste is anticipated to continue to increase from 1.1m tonnes (2016) to 1.3m tonnes in 2031. Illegal waste disposal continues to be a noted issue in Kent and Medway, with 22,050 incidents of fly tipping occurring in 2018/19. This creates health and safety issues as the dumping of hazardous waste often results in some degree of environmental damage.

In addition to those managed by KCC, the Minerals and Waste Local Plan (Adopted in 2016 amended 2020) relates to the safeguarding of wharves and rail depots particularly DM 8 (Safeguarding Minerals Management, Transportation, Production & Waste Management Facilities).

The consumption requirements of transport related assets in relation to resources and waste should be considered within the LTP5. It is noted that KCC currently review and consider energy consumption and carbon emissions in relation to road assets, as outlined in the “Well-managed Highway Infrastructure – Service Definitions & Service Risk Assessments” document.

Appendix B Road capacity and junction scheme assessment tables

B.1 Road capacity schemes

Table B.1.1 Ashford – A28 Great Chart Bypass dualling

Road widening to add an extra lane in both directions of the A28 Great Chart bypass. Approximately 2km in length.

Dualling between the roundabout junction with Ashford Road and Chilmington Avenue (southwestern end of the scheme) to the roundabout junction with Chart Road (northeastern end of the scheme).

Part of a major development site.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally or nationally designated sites for biodiversity. However, the northeastern end of the scheme is adjacent to part of Ashford Green Corridors Local Nature Reserve (LNR), which is located between the A28 and Chart Road. In addition, the scheme is located 530m northeast of Ashford Community Woodland LNR. The scheme intersects with an SSSI Impact Risk Zone (IRZ); however, this is only for aviation proposals, and not road proposals. In terms of Biodiversity Action Plan (BAP) priority habitats, the scheme is adjacent to two relatively large areas of deciduous woodland which span 550m and 680m of the length of the scheme respectively. In addition, there is a smaller area of deciduous woodland 20m north of the scheme, located to the north of Chart Road. As the scheme involves dualling, it has the potential to lead to the loss of these habitats.	↓
Air quality	Ashford does not contain an Air Quality Management Area (AQMA). Whilst the scheme has potential to improve air quality in and around this location by improving congestion on the bypass, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on the A28 and support economic growth and the delivery of new development in Great Chart. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public	?

SEA Topic	Commentary	
	realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the bypass dualling may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows by increasing the capacity of the A28. A stimulation of induced demand through the road scheme has the potential to lead to an increase in carbon dioxide (CO_2) emissions associated with motor vehicles. In terms of climate change adaptation, whilst the scheme is primarily within Flood Zone 1, the bypass intersects with the Great Stour River and this part of the road is within Flood Zone 2/ 3. In addition, the land either side of the road is within Flood Zone 3. Similarly, surface water flood risk is high where the Great Stour River intersects with the bypass, and the land to the northwest of the bypass is also at high risk of surface water flooding. The scheme will likely result in an increase in hard road surfaces, and in this respect, the scheme has the potential to worsen surface water flood risk in this area. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a low likelihood of being underlain by best and most versatile (BMV) land (<20% area BMV), and therefore the scheme is unlikely to lead to the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The southwestern end of the scheme is adjacent to a grade II listed building and 100m southeast of scheduled monument 'Medieval moated site, The Moat'. The northeastern end of the scheme is 80-120m south of two grade II listed buildings. In addition, the part of the scheme that intersects with Tithe Barn Lane is 360m northwest of grade II* listed building 'Singleton Manor'. The scheme is 130m south of Great Chart Conservation Area, which contains a large cluster of listed buildings, including one grade I listed building, 'Church of St Mary', and two grade II* listed buildings. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting.	?

SEA Topic	Commentary	
	Finally, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme is 2.6km south of the Kent Downs National Landscape and is therefore unlikely to significantly affect its setting or special qualities. The northeastern end of the scheme is adjacent to a stretch of Tree Preservation Orders (TPOs) to the north along Chart Road, and therefore the scheme could result in the loss of some of the trees in this TPO. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the bypass dualling is likely to impact landscape character in this location, as well as the townscape character of the southeastern side of Great Chart and the western side of Ashford, by increasing traffic flows in this location. As the scheme is approximately 2km in length, the impacts of the scheme on landscape/ townscape character are likely to be significant. Finally, the scheme has the potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion along the A28 and support economic growth and the delivery of new development in Great Chart.

However, the proposed bypass dualling has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment, including a conservation area.

Whilst the proposed bypass dualling has the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The potential route of the bypass runs near several habitats that have been identified as BAP priority habitats. It is also adjacent to part of Ashford Green Corridors LNR. These areas should be avoided, and their sensitivities reflected through the design and layout of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.11 Dover – A2 Lydden dualling

Addition of a second land in each direction. Runs between the A2 Lydden Hill junction (northwestern end of the scheme) and the A2 Duke of York roundabout (southeastern end of the scheme).

SEA Topic	Commentary	
Biodiversity, flora and fauna	To the north of Temple Ewell, the route of the scheme is adjacent to Lydden Temple Ewell NNR to the south. In the same location, the potential route of the scheme is 90m from Lydden and Temple Ewell Downs SAC/ SSSI. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the northwestern end of the scheme is adjacent to an area of deciduous woodland to the north, which is also classified as ancient woodland. In addition, the area covered by Lydden and Temple Ewell Downs SAC/ SSSI, 90m from the potential route of the scheme, contains lowland calcareous grassland. Further along the A2, in Whitfield and at the junction with the A256, there are more areas of deciduous woodland adjacent to the scheme. There is also an area of deciduous woodland adjacent to the southeastern end of the scheme. In this respect, the construction and operation of the scheme has the potential to disturb these habitats.	↓
Air quality	The end of the scheme is 2.5km from the A20 AQMA in Dover, following the route of Jubilee Way from the southeastern end of the scheme, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by reducing traffic and congestion on the A2, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on the A2 and support economic growth and the delivery of new development to the north of Dover. Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the	?

SEA Topic	Commentary	
	quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the A2. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Whilst surface water flood risk is primarily very low in and around the scheme, isolated parts of the A2 have a low-high risk of surface water flooding, particularly the part of the A2 that intersects with the A256. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV), however there are areas with a moderate likelihood of BMV land (20-60% area BMV). In this respect, the scheme will likely result in the loss of some productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	Whilst the length of the scheme is in proximity to several grade II and II* listed buildings, the southeastern end of the scheme is 160m northeast of a large cluster of grade II listed buildings at the Duke of York's Royal Military School. In addition, the northwestern end of the scheme is 930m southwest of grade II registered park and garden 'Waldershare Park'. The northwestern end of the scheme is also 400m southeast of Coldred Village Green Conservation Area, whilst further along the A2, 740m southwest of the route of the scheme, is Temple Ewell Conservation Area. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The southeastern end of the scheme is adjacent to part of the Kent Downs National Landscape to the southeast, whilst the northwestern end of the scheme is 770m northeast of another part of the Kent Downs National Landscape. In this respect,	↓

SEA Topic	Commentary	
	the scheme has potential to significantly affect the setting or special qualities of the National Landscape, especially as it will likely generate increased levels of noise pollution. Two TPO areas border the route of the scheme to the north in Whitfield, which have potential to be lost due to the dualling of the A2. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the dualling of a large stretch of the A2 will have inevitable impacts on landscape character over a large area and is likely to impact the townscape character of Whitfield. The scheme has potential to increase noise pollution in the vicinity of this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on the A2 and support economic growth and the delivery of new development to the north of Dover.

However, the proposed dualling has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment, including several conservation areas.

Whilst the proposed dualling has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around the A20 AQMA, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The route of the road runs near several habitats that have been identified as BAP priority habitats. It is also adjacent to Lydden Temple Ewell NNR and near Lydden and Temple Ewell Downs SAC/ SSSI. Potential impacts on designated sites for biodiversity and BAP priority habitats should be considered during scheme

development, avoidance and mitigation measures implemented, and opportunities for net gain explored.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening, including with regards to the special qualities of the Kent Downs National Landscape.

Table B.1.12 Dover – A256 dualling

Addition of a second land in both directions on the A256. Located between the roundabout junction with Monks Road (northern end of the scheme) and Cater Road/ Lower Street roundabout junction with the A256 (southern end of the scheme).

Approximately 6.5km in length.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 380m west of Thanet Coast & Sandwich Bay Ramsar Site and Sandwich Bay to Hacklinge Marshes SSSI. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, several parts of the scheme are adjacent to small areas of deciduous woodland. In addition, an area of good quality semi-improved grassland is adjacent to the eastern side of the scheme in Statenborough. The northern end of the scheme intersects with a small area of coastal saltmarsh next to the River Stour, as well as mudflats either side of the river, and a small area of coastal and floodplain grazing marsh lies adjacent to the scheme on the other side of the river. In this respect, the construction of the scheme has the potential to lead to the loss of these habitats, whilst the operation of the scheme has potential to lead to the disturbance of these habitats and others nearby.	↓
Air quality	Whilst there is no AQMA in or around Sandwich, the A256 is 6.6km south of the Thanet Urban AQMA and 14km north of the A20 AQMA in Dover, which were both declared due to high levels of nitrogen dioxide (NO_2). Whilst the scheme has potential to improve air quality along the A256 by reducing traffic and congestion on the road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on the A256 and support economic growth and the delivery of new development to the west of Sandwich and nearby villages. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public	?

SEA Topic	Commentary	
	realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the A256. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, whilst the middle of the route of the scheme is within Flood Zone 1, parts of each end of the scheme are within Flood Zone 2/ 3, specifically to the northwest/ west of Sandwich, around the River Stour, and to the east of Eastry, around the south stream. Whilst surface water flood risk is primarily very low on the A256, the area either side of the road, to the west of Sandwich, has a low-high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV), however the northern part of the scheme, to the northwest/ west of Sandwich, intersects with an area with a moderate likelihood of BMV land (20-60% area BMV). In this respect, the scheme will likely result in the loss of some productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The southern end of the scheme partially intersects with scheduled monument ‘large cemetery N of Sangrado’s Wood’, which is located between the A256 and Dover Road, to the southeast of Buttsole. There is a large cluster of listed buildings in Eastry, to the west of the scheme, and the nearest listed building is 250m west of the A256. These are primarily grade II listed buildings, but there are three grade I and one grade II* listed buildings, the latter of which is closest to the scheme. There is a grade II listed building adjacent to the scheme, to the west of the A256, in Statenborough. There is also a cluster of listed building on Felderland Lane, 170m southeast of the scheme and to the northeast of Statenborough. This includes one grade II* listed building. The scheme is 220m southeast of Eastry Conservation Area, which is in Eastry near the start of the scheme. Further north, towards the end of the scheme, is Sandwich – Walled Town	↓

SEA Topic	Commentary	
	Conservation Area, which is 520m southeast of the scheme near the River Stour. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their fabric and setting. The largest cluster of listed buildings and scheduled monuments is found in Sandwich; however, this is 960m east of the scheme, and is therefore unlikely to be significantly affected by the scheme. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The scheme is adjacent to several TPO areas, including two in Statenborough and two near Stone Cross. In this respect, the scheme has the potential to lead to the loss/ disturbance of these trees. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the dualling of a large stretch of the A256 will have inevitable impacts on landscape character over a large area and is likely to impact the villagescape/ townscape character of Eastry and the western side of Sandwich. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on the A256 and support economic growth and the delivery of new development to the west of Sandwich and nearby villages.

However, the proposed dualling has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment, including several conservation areas.

Whilst the proposed dualling has the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation

of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The route of the road runs near several habitats that have been identified as BAP priority habitats. It is also near Thanet Coast & Sandwich Bay Ramsar Site and Sandwich Bay to Hacklinge Marshes SSSI. Potential impacts on designated sites for biodiversity and BAP priority habitats should be considered during scheme development, avoidance and mitigation measures implemented, and opportunities for net gain explored.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.14 Maidstone – Blue Bell Hill A229 M2 connection

New dual carriageway link, approximately 1km in length.

Between the M2 westbound (northern end of the scheme) and the A229 northbound (southern end of the scheme).

SEA Topic	Commentary	
Biodiversity, flora and fauna	The southern end of the scheme is 270m north of Wouldham to Detling Escarpment SSSI. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the potential route of the scheme intersects with an area of deciduous/ ancient woodland, which covers a large proportion of the wider area, particularly to the west of the scheme. In this respect, the construction and operation of the scheme has potential to disturb this habitat.	↓
Air quality	Whilst the scheme is not in proximity to an AQMA, Maidstone Borough AQMA is located approximately 3.1km south of the scheme along the A229. Through contributing to an overall increase in traffic flows on the road network, the scheme has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on the A229 at Blue Bell Hill, with benefits for the quality of life of residents at this location. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely	?

SEA Topic	Commentary	
	affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows across a wider area. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Whilst fluvial flood risk is very low in some parts of the scheme, there are also some areas at low-high risk of surface water flooding that intersect with the scheme, particularly towards the northern end of the scheme. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The scheme is located on urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is not located near any designated heritage assets. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment, including at locations at some distance from the scheme.	?
Landscape, noise and tranquillity	The scheme wholly intersects with the Kent Downs National Landscape, and in this respect, the scheme is likely to significantly affect its setting or special qualities. However, it is recognised that the scheme is within an urban context and near an existing route, limiting potential impacts on the National Landscape. The scheme is adjacent to a large TPO area to the west, and therefore the scheme could result in the loss of some of the trees in this TPO. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the scheme will likely have some impact on landscape character in this location, although this will be limited given that the scheme is within an urban context and near an existing route.	?

SEA Topic	Commentary	
	The scheme has potential to increase noise pollution in the vicinity of this location; however, this is unlikely to be significant given the proximity of the scheme to the M2, which likely already produces a significant level of noise pollution.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on the A229 through Blue Bell Hill.

However, the proposed link road has the potential to impact on key biodiversity habitats present locally, as well as landscape and townscape character.

Whilst the proposed link road has the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The potential route of the link road runs through/ near several habitats that have been identified as BAP priority habitats. It also runs close to Wouldham to Detling Escarpment SSSI. These sensitivities of these areas should be fully considered through scheme routing, design and layout.

Potential impacts on the landscape character should be minimised through appropriate design and layout and screening, including associated with the special qualities of the Kent Downs National Landscape.

Table B.1.15 Maidstone – Leeds to Langley bypass

New single carriageway link, approximately 4km in length.

Between the A274 Sutton Road (southwestern end of the scheme) to the A20/ M20 Junction 8 (northeastern end of the scheme).

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not located near any internationally or nationally designated sites for biodiversity. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the potential route of the scheme passes near several small habitats, including deciduous/ ancient woodland, traditional orchard and reedbeds. The scheme is also 680m west of a large area of wood-pasture and parkland. In this respect, the construction and operation of the scheme has potential to disturb these habitats.	?
Air quality	The southwestern end of the scheme is 980m east of Maidstone Borough AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in Langley Heath, Leeds and Ashbank by reducing traffic and congestion on the roads that pass through these settlements, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on the B2163 and support economic growth and the delivery of new development in Leeds and Langley. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in this location. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is primarily within Flood Zone 1, with only a few small areas of land within Flood Zone 3 intersecting with the potential route of the scheme. Similarly, surface water flood risk in this location is primarily very low, with only a few small areas of land at medium-high risk of surface water flooding intersecting with the potential route of the scheme.	↓

SEA Topic	Commentary	
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme is likely to result in the loss of some productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is located adjacent to/ near numerous listed buildings, including three grade II listed buildings along the potential route of the scheme, where Forge Lane intersects with Old Mill Road. The largest cluster of listed buildings is in Leeds, which also contains scheduled monument 'Leeds Priory' located 370m east of the potential route of the scheme. In addition, grade II* registered park and garden 'Leeds Castle' is located 620m east of the potential route of the scheme. Just outside of this park and garden is grade I listed building 'Church of St Nicholas', 510m east of the potential route of the scheme in Ashbank. The scheme is 270m northwest of Leeds Upper Street Conservation Area and 270m west of Leeds Lower Street Conservation Area. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The northeastern end of the scheme is 780m south of the Kent Downs National Landscape, and in this respect, the scheme is likely to significantly affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the scheme will likely have inevitable impacts on landscape character over a large area (the scheme is approximately 4km in length) and is likely to impact the villagescape character of Langley Heath, Leeds and Ashbank. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on the B2163 and support growth in Leeds and Langley.

However, the proposed bypass has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment, including several conservation areas.

Whilst the proposed bypass has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in Langley Heath, Leeds and Ashbank, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the bypass runs near several habitats that have been identified as BAP priority habitats. The sensitivities of these habitats should be fully recognised by scheme routing, layout and design.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening, including with regards to the northeastern end of the scheme which is located near the Kent Downs National Landscape.

Table B.1.19 Sevenoaks – M25 to M26 Eastbound slips

Addition of a M25 northbound to M26 east bound, and a M25 southbound to M26 eastbound, set of slip roads.

Approximately 2km of new dual carriageway.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 1.2km west of Sevenoaks Gravel Pits SSSI. The scheme intersects with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme intersects with several areas of deciduous woodland (one of which is also ancient woodland). Therefore, the scheme has the potential to lead to the loss of this habitat.	↓

SEA Topic	Commentary	
Air quality	The scheme does not intersect with an AQMA; however, it links to AQMA No 13 (A25) in Sevenoaks. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion in this location, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on the M25 and M26. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in this location. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is primarily within Flood Zone 1, but it also intersects some land within Flood Zone 3. Similarly, the scheme intersects some land with a low-high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location primarily has a low likelihood of being underlain by BMV land (<20% area BMV), and therefore the scheme is unlikely to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is 260m southeast of grade II* registered park and garden 'Chevening', which contains numerous listed buildings, including two grade I listed buildings and two grade II* listed buildings. In addition, the scheme is never several grade II listed buildings in Dunton Green to the northeast. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting.	↓

SEA Topic	Commentary	
	Finally, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme wholly intersects with the Kent Downs National Landscape, and therefore the scheme is unlikely to significantly affect its setting or special qualities. The impacts of the scheme on landscape/ townscape character will depend on the detailed design and layout of the road. Nevertheless, the scheme is unlikely to have a significant impact on landscape character as it is recognised that the scheme is within an urban context and on an existing route, limiting potential landscape impacts (although not townscape). The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in the vicinity of the M25 and M26.

However, the proposed slip roads have the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed slip roads have the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around this location, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The potential route of the slip roads run through/ near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Sevenoaks Gravel Pits SSSI. The sensitivities of these habitats should be fully recognised by scheme routing, layout and design.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening, particularly as the scheme intersects with the Kent Downs National Landscape.

Table B.1.20 Thanet – Manston Road to Haine Road link

Addition of a new single carriageway across a range of major development sites, approximately 2.5km in length.

Connects Manston Road, near existing Airport terminal (southwestern end of the scheme), to the existing roundabout junction of Haine Road and the A256 (northeastern end of the scheme).

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally or nationally designated sites for biodiversity. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will likely need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, whilst there are some areas of deciduous woodland and traditional orchard within 1km of the scheme, these are relatively small in size and screened by existing built-up areas. In this respect, the scheme is unlikely to significantly affect these habitats.	?
Air quality	The northeastern end of the scheme intersects with Thanet Urban AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by diverting traffic away from Haine Road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality across the wider area.	↓
Population and human health	The scheme has the potential to relieve traffic and congestion in Manston and Haine and support economic growth and the delivery of new development to the northwest of Ramsgate. Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows around Manston and Haine. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles.	↓

SEA Topic	Commentary	
	In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Similarly, surface water flood risk is primarily very low in and around the scheme, with only a few isolated areas at risk of surface water flooding.	
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme will likely result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is near several grade II listed buildings; near the southwestern end of the scheme, 100m southeast of the potential route of the scheme, is a cluster of three grade II listed buildings. In addition, 120m north of the mid-point of the potential route of the scheme is another grade II listed building. Finally, near the northeastern end of the scheme (Haine Road), 200m southeast of the potential route of the scheme, is another grade II listed building. Given the proximity of the scheme to these listed buildings, there is potential for the scheme to adversely affect their setting, including through noise pollution. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the link road, which spans approximately 2.5km in length, will have inevitable impacts on landscape character and is likely to impact the townscape character of Manston, Haine and Lydden. The scheme is likely to increase noise pollution in this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in Manston and Haine and support economic growth and the delivery of new development to the northwest of Ramsgate.

However, the proposed link road has the potential to impact landscape character, and the setting of the historic environment.

Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around Manston and Haine, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.21 Thanet – Canterbury Road West to Manston Road link

New single lane road approximately 0.8km in length. Connects Canterbury Road West (southern end of the scheme) to Manston Road (northern end of the scheme).

Part of a major development site.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The southern end of the scheme is 750m northwest of Thanet Coast & Sandwich Bay SPA/ Ramsar site, Sandwich Bay SAC, Thanet Coast SAC, Sandwich Bay to Hacklinge Marshes SSSI, and Sandwich & Pegwell Bay NNR. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the southern end of the scheme is 90m west of a small area of deciduous woodland. Towards the northern end of the scheme there is another small area of deciduous woodland 170m east of the potential route of the scheme. Therefore, the construction and operation of the scheme has potential to disturb this habitat.	?
Air quality	The scheme partially intersects with Thanet Urban AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by diverting traffic away from Haine Road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	↓

SEA Topic	Commentary	
Population and human health	The scheme has the potential to relieve traffic and congestion on Haine Road and support economic growth and the delivery of new development to the west of Ramsgate. Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows around Manston. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Similarly, surface water flood risk is primarily very low in and around the scheme, with only a few isolated areas at risk of surface water flooding.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme will likely result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The southern end of the scheme (Canterbury Road) is 210m northwest of scheduled monument 'Anglo-Saxon cemetery S of Ozengell Grange'. Towards the northern end of the scheme (Manston Road), 170m east of the potential route of the scheme, is a grade II listed building to the east of Haine Road. Nearby, 230m east of the potential route of the scheme, is a grade II* listed building (Barn about 50m east of Ozengell Grange). Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓

SEA Topic	Commentary	
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the link road will have inevitable impacts on landscape character and is likely to impact the townscape character of Manston to the northwest and the northern extent of Cliffsend to the southwest. However, it is noted that the scheme is confined to a relatively small area (the scheme is 0.8km in length), and therefore the effects of the scheme on the setting of the surrounding landscape and townscape are unlikely to be significant. In terms of noise pollution, the scheme is likely to increase noise in this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on Haine Road and support economic growth and the delivery of new development to the west of Ramsgate.
However, the proposed link road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.
Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around this location, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.
The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the link road runs through/ near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Thanet Coast & Sandwich Bay SPA/ Ramsar site, Sandwich Bay SAC, Thanet Coast SAC, Sandwich Bay to Hacklinge Marshes SSSI, and Sandwich & Pegwell Bay NNR. These sensitivities will need to be fully recognised in scheme development. More broadly, potential impacts on designated sites for biodiversity and BAP priority

habitats should be considered during scheme development, avoidance and mitigation measures implemented, and opportunities for net gain explored.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.22 Thanet – Canterbury Road to Minnis Road link

New single lane road, approximately 1.1km in length.

Connects Canterbury Road A28 (southern end of the scheme) to Minnis Road opposite Gore End Close (northern end of the scheme).

Part of a major development site.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The northern end of the scheme is 640m south of Thanet Coast & Sandwich Bay SPA/ Ramsar site and Thanet Coast SAC/ SSSI. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the southern end of the scheme is 900m west of a large area of wood-pasture and parkland (Quex Park), which also contains areas of deciduous woodland. Whilst this habitat is at relative distance from the scheme, given its relatively large size, and the presence of open land between the potential route of the scheme and the habitat, there is still potential for the construction and operation of the scheme to disturb this habitat.	?
Air quality	The northern end of the scheme intersects with Thanet Urban AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by diverting traffic away from Canterbury Road and Station Road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	↓
Population and human health	The scheme has the potential to relieve traffic and congestion in Birchington-on-Sea and support economic growth and the delivery of new development to the west of the village. Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows to the west of Birchington-on-Sea, with potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1.	↓

SEA Topic	Commentary	
	Whilst surface water flood risk is primarily very low in and around the scheme, there is a strip of land with a low-high risk of surface water flooding that intersects with the scheme near the end.	
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme will likely result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The southern end of the scheme is 400m northwest of scheduled monument 'Ring ditches and enclosures 450m ESE of College Farm', and 490m east of a grade II listed building. Another scheduled monument, 'Group of ring ditches 360m NW of Great Brooks End Farm', is located 360m to the west of the potential route of the scheme. In addition, Birchington Conservation Area, which contains a cluster of listing buildings, including one grade II*, is approximately 620m to the east of the scheme in Birchington-on-Sea. However, it is recognised that the character of this area is currently affected to some degree by the existing built-up area. Finally, the northern end of the scheme (Minnis Road) is 60-130m east of two grade II listed buildings south of Minnis Road. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme also has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the link road will have inevitable impacts on landscape character and is likely to impact the townscape character of Birchington-on-Sea to the east. However, it is noted that the scheme is confined to a relatively small area (the scheme is 1.1km in length), and therefore the effects of the scheme on the setting of the surrounding landscape and townscape are likely to be limited. In terms of noise pollution, the scheme is likely to increase noise in this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme.	?

SEA Topic	Commentary	
	Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in Birchington-on-Sea and support economic growth and the delivery of new development to the west of the village.

However, the proposed link road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around Thanet Urban AQMA, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the link road runs through/ near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Thanet Coast & Sandwich Bay SPA/ Ramsar site and Thanet Coast SAC/SSSI. The sensitivities of these areas should be recognised through the routing, layout and design of the scheme. More broadly, potential impacts on designated sites for biodiversity and BAP priority habitats should be considered during scheme development, avoidance and mitigation measures implemented, and opportunities for net gain explored.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.23 Thanet – Canterbury Road to Park Lane link

New single lane road approximately 900m in length. Connects Canterbury Road A28 (western end of the scheme) to Park Lane off Manston Road (eastern end of the scheme).

Part of a major development site.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally or nationally designated sites for biodiversity. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will likely need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the eastern end of the scheme is adjacent to a large area of wood-pasture and parkland (Quex Park), which also contains areas of deciduous woodland. Therefore, the construction and operation of the scheme has the potential to disturb this habitat.	?
Air quality	The eastern end of the scheme is located 10m to the south of Thanet Urban AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by diverting traffic away from Canterbury Road and Park Lane, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in Birchington-on-Sea and support economic growth and the delivery of new development to the south of the village. Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows to the south of Birchington-on-Sea. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Similarly, surface water flood risk is very low in and around the scheme.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV), and therefore the scheme will likely result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are	↓

SEA Topic	Commentary	
	incorporated within the design and construction stages of the scheme.	
Cultural heritage	The potential route of the scheme is 190m north of scheduled monument 'Ring ditches and enclosures 450m ESE of College Farm'. The eastern end of the scheme is 360m southwest of a grade II listed building in Quex Park, which contains seven other grade II listed buildings all within 1km of the scheme. The potential route of the scheme is 690m south of Birchington Conservation Area, which contains a cluster of listing buildings, including one grade II*, in Birchington-on-Sea. However, it is recognised that the character of this area is currently affected to some degree by the existing built-up area. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment. The scheme is likely to increase traffic along Shottendane Road through diverting traffic from Canterbury Road. This may have impacts on the 'Quex Park settlements' scheduled monument, which is located to the northeast of the scheme, adjacent to Shottendane Road.	↓
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The eastern end of the scheme is adjacent to numerous TPOs in Quex Park, including one that runs alongside Park Lane. In this respect, the scheme has potential to lead to the loss of trees in these TPOs. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the link road will have inevitable impacts on landscape character and is likely to impact the townscape character of Birchington-on-Sea to the north. However, it is noted that the scheme is only approximately 900m in length, and therefore the effects of the scheme on the setting of the surrounding landscape and townscape are unlikely to be significant. Finally, the scheme has the potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in Birchington-on-Sea and support economic growth and the delivery of new development to the south of the village.

However, the proposed link road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around Thanet Urban AQMA, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the link road runs through/ near several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be recognised through the routing, layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.24 Thanet – Clipper Close to Manston Road link

New single lane road approximately 1.2km in length. Connects Clipper Close arm of Columbus Avenue roundabout (southern end of the scheme) to Manston Road and Shottendane Road with new roundabout junction including an arm for Margate Hill (northern end of the scheme).

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will likely need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the southern end of the scheme is 550m northeast of an area of deciduous woodland, however this is screened to some extent by Manston Park. The northern end of the scheme is adjacent to a large area of wood-pasture and parkland (Quex Park), which also contains	?

SEA Topic	Commentary	
	areas of deciduous woodland. Therefore, the scheme has the potential to lead to the loss of/ disturb this habitat.	
Air quality	The end of the scheme is 1.1km southeast of Thanet Urban AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by relieving traffic on Spitfire Way and Acol Hill/ The Street/ Minster Road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in Acol and support economic growth and the delivery of new development to the north of Manston Park. Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows around Manston Park. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Whilst surface water flood risk is primarily very low around the scheme, the potential route of the scheme follows a strip of land with a low risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV), and therefore the scheme will likely result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The southern end of the scheme (Clipper Close) is 510m northeast of a grade II* listed building (Cleve Court and Cleve Lodge); however, it is shielded to some degree by the buildings that make up Manston Park.	?

SEA Topic	Commentary	
	The northern end of the scheme (Manston Road) is 340m southeast of a grade II listed building in Quex Park. In addition, the scheme is 780m east of Acol Conservation Area, which covers The Street in Acol and contains four grade II listed buildings. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The end of the scheme is adjacent to numerous TPOs in Quex Park, including one that runs alongside Manston Road. In this respect, the scheme has potential to lead to the loss of trees in these TPOs. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the link road will have inevitable impacts on landscape character and is likely to impact the townscape character of Acol to the west. The scheme is approximately 1.2km in length, and therefore the effects of the scheme on the setting of the surrounding landscape and townscape are likely to be significant. In terms of noise pollution, the scheme is likely to increase noise in this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in Acol and support economic growth and the delivery of new development to the north of Manston Park.

However, the proposed link road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around Thanet Urban AQMA, the scheme also has the potential to encourage car usage by

reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the link road runs through/ near several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be recognised through the routing, layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.25 Thanet – Hartsdown Road to Manston Road link

New single lane road approximately 800m in length.

Connects Hartsdown Road (northern end of the scheme) to Manston Road (southern end of the scheme) via a new junction with Shottendane Road.

Part of a major development sites.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The northern end of the scheme is 880m south of Thanet Coast SAC/ SSSI, Thanet Coast and Sandwich Bay SPA/ Ramsar site. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will likely need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the southern end of the scheme is adjacent to an area of deciduous woodland to the east (Margate Cemetery), whilst the northern end of the scheme is 150m west of another area of deciduous woodland. Therefore, the scheme has the potential to lead to the loss of/ disturb this habitat.	↓
Air quality	Most of the scheme intersects with the Thanet Urban AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by relieving traffic at the junction between Hartsdown Road and Manston Road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion at the junction between Hartsdown Road and Manston Road and support economic growth and the delivery of new development to the southwest of Margate.	?

SEA Topic	Commentary	
	Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in this location. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Whilst surface water flood risk is primarily very low in this location, the potential route of the scheme intersects a strip of land with a low-high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV), and therefore the scheme will likely result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The southern end of the scheme is located close to a cluster of listed buildings in Margate Cemetery to the east, including one grade II* listed building which is 70m from the scheme. In addition, the northern end of the scheme is 370m northwest of scheduled monument Salmestone Grange', which is in the same area as a grade II* listed building. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. Finally, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the link road will have inevitable impacts on landscape character and is likely to impact the townscape character of this part of Margate. However, the scheme is only	?

SEA Topic	Commentary	
	approximately 800m in length, and therefore the effects of the scheme on the setting of the surrounding landscape and townscape are less likely to be significant. In terms of noise pollution, the scheme is likely to increase noise in this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion at the junction between Hartsdown Road and Manston Road and support economic growth and the delivery of new development to the southwest of Margate.

However, the proposed link road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around Thanet Urban AQMA, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the link road runs through/near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Thanet Coast SAC/ SSSI, Thanet Coast and Sandwich Bay SPA/Ramsar site. The sensitivities of these areas should be fully recognised when determining the route and design of the scheme. More broadly, potential impacts on designated sites for biodiversity and BAP priority habitats should be considered during scheme development, avoidance and mitigation measures implemented, and opportunities for net gain explored.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.26 Thanet – Nash Road widening

Widening of road to two-lane marked carriageway, approximately 1.7km in length. From Nash Road junction with Turners Close (northern end of the scheme) to Nash Road junction with Wherry Close (southern end of the scheme).

SEA Topic	Commentary	
Biodiversity, flora and fauna	The northern end of the scheme is 1.3km south of Thanet Coast SAC/ SSSI and Thanet Coast and Sandwich Bay SPA/ Ramsar site. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will likely need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is 50-150m from two small areas of deciduous woodland. Therefore, the scheme has the potential to lead to the loss of/ disturbance of these habitats.	?
Air quality	The northern third of the scheme intersects with the Thanet Urban AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by relieving traffic and congestion on Nash Road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on Nash Road and support economic growth and the delivery of new development to the south of Margate. Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in this location. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Whilst surface water flood risk is primarily very low in this location, the land directly to the east of the road has a low-high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The scheme is located on urban/ industrial land, and therefore will not result in the loss of productive agricultural land.	-

SEA Topic	Commentary	
	No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	
Cultural heritage	The scheme is adjacent to a grade II listed building to the east, whilst the northern end of the scheme is 180m southeast of scheduled monument 'Salmestone Grange', and this area also contains a grade II* listed building. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. Finally, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the road widening will likely impact landscape character in this location as well as the townscape character of this part of Margate. Finally, the scheme has the potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on Nash Road and support economic growth and the delivery of new development to the south of Margate.

However, the proposed road widening has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed road widening has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around Thanet Urban AQMA, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and

the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

This part of Nash Road runs near several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be fully recognised when determining the route, layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.27 Thanet – Manston Road to Nash Road link

New single lane road approximately 500m in length.

Connects Manston Road (western end of the scheme) to Nash Road (eastern end of the scheme).

Part of a major development site.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The scheme intersects an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the potential route of the scheme is 130m south of an area of deciduous woodland in St Gregory's Catholic Primary School. In addition, the potential route of the scheme is 80m north of a larger area of deciduous woodland in Margate Hebrew Cemetery. In this respect, the construction and operation of the scheme has the potential to disturb these habitats.	?
Air quality	Both ends of the scheme intersect with the Thanet Urban AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by diverting traffic away from the junction to the north, where Shottendane Road, Hartsdown Road, Tivoli Road, College Road and Nash Road meet, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion at the junction to the north, where Shottendane Road, Hartsdown Road, Tivoli Road, College Road and Nash Road meet, and support economic growth and the delivery of new development to the south of Margate. Whilst the scheme has the potential to support accessibility by car, this also has the potential to increase car usage by	?

SEA Topic	Commentary	
	reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on Manston Road and Nash Road. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Whilst surface water flood risk is primarily very low in and around the scheme, the start of the scheme intersects with a part of Nash Road that has a low-high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme will result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is 130m south of scheduled monument 'Salmestone Grange' at St Gregory's Catholic Primary School, which contains grade II* listed building 'Salmestone Grange including Chapel'. In addition, there is a grade II listed building at the entrance to Shottendane Nursing Home 140m north of the western end of the scheme (Manston Road). There is also a cluster of eleven listed buildings 170-310m south of the route of the scheme, in Margate Hebrew Cemetery, including two grade II* listed buildings. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is not in proximity to a National Landscape. The western end of the scheme is 40m northeast of a TPO area along Manston Road, which has potential to be lost as a result of the scheme.	?

SEA Topic	Commentary	
	The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the link road will have inevitable impacts on landscape character and is likely to impact on the setting of St Gregory's Catholic Primary School to the north and Margate Hebrew Cemetery to the south. However, it is noted that the scheme is only approximately 500m in length, and therefore the effects of the scheme on the setting of the surrounding landscape and townscape are unlikely to be significant. In terms of noise pollution, the scheme is likely to increase noise in this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion at the junction to the north, where Shottendane Road, Hartsdown Road, Tivoli Road, College Road and Nash Road meet, and support economic growth and the delivery of new development to the south of Margate.

However, the proposed link road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around the Thanet Urban AQMA, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of areas of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the link road runs near several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be fully recognised when determining the route, layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.32 Tunbridge Wells – A228 Colts Hill bypass

New dual carriageway link, approximately 3.3km in length.

Connects the A228 at the junction with Maidstone Road (southwestern end of the scheme) to the B2017 at the junction with the A228 (northeastern end of the scheme) via a new arm on the roundabout.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The southwestern end of the scheme is 540m northwest of Foal Hurst Wood LNR. The scheme intersects an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the potential route of the scheme intersects with two large areas of traditional orchard, which cover approximately 800m and 950m of the length of the scheme respectively. Several small areas of deciduous/ ancient woodland are also located near the potential route of the scheme, as close as 30m to the scheme. In this respect, the construction and operation of the scheme has the potential to disturb these habitats.	↓
Air quality	There is no AQMA near the scheme. Whilst the scheme has potential to improve air quality along the A228 by reducing traffic and congestion on the road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on the A228. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in this location. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is primarily within Flood Zone 1, with the exception of the southwestern	↓

SEA Topic	Commentary	
	end of the scheme, which intersects with an area of land within Flood Zone 2/ 3. Similarly, the scheme primarily has a very low risk of surface water flooding, with the exception of a small part of the road near the northeastern end of the scheme, which has a low-high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	
Soil and water quality	Half of the undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV), whilst the other half has a moderate likelihood of BMV land (20-60% area BMV). In this respect, the scheme will likely result in the loss of some productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The southwestern end of the scheme is located close to several grade II listed buildings (the closest is 110m from the potential route of the scheme). The mid-section of the scheme, near Colt's Hill, is also close to several grade II listed buildings (the closest is 60m from the potential route of the scheme). Finally, the northeastern end of the scheme is adjacent to two grade II listed buildings at the junction between the A228 and Badsell Road, whilst a third listed building is location 40m north of the scheme. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The southwestern half of the scheme intersects with the High Weald National Landscape, and in this respect, the scheme has potential to significantly affect the setting or special qualities of the National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the scheme will likely have inevitable impacts on landscape character over a large area and is likely to impact the townscape character of Lower Green to the southwest of the scheme, Colt's Hill to the east of the scheme, and Paddock Wood to the northeast of the scheme. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme.	?

SEA Topic	Commentary	
	Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on the A288.

However, the proposed bypass has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed bypass has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around the A228, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the bypass runs through/ near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Foal Hurst Wood LNR. These areas should be avoided when determining the route of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening, particularly with regards to the southwestern half of the scheme which intersects with the High Weald National Landscape.

Table B.1.33 Tunbridge Wells – Five Oak Green bypass

New dual carriageway link approximately 1.5km in length.

Connects the B2017 (western end of the scheme) with Colts Hill Bypass (eastern end of the scheme).

SEA Topic	Commentary	
Biodiversity, flora and fauna	The eastern end of the scheme is 850m west of Foal Hurst Wood LNR. The scheme does not intersect with an IRZ. In terms of BAP priority habitats, the eastern end of the scheme intersects with an area of traditional orchard, which covers 280m of the length of the scheme. The western end of the scheme is adjacent to a narrow strip of ancient and semi-	↓

SEA Topic	Commentary	
	natural woodland to the south. In this respect, the construction and operation of the scheme has the potential to disturb these habitats.	
Air quality	There is no AQMA near the scheme. Whilst the scheme has potential to improve air quality along Alders Road, Five Oak Green Road and Badsell Road, by reducing traffic and congestion on these roads, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion along Alders Road, Five Oak Green Road and Badsell Road and support economic growth and the delivery of new development in this location. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in this location. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is primarily within Flood Zone 1; however, part of the potential route of the scheme intersects with an area of land within Flood Zone 3 associated with the Alder Stream, which intersects with the scheme. Similarly, the scheme primarily has a very low risk of surface water flooding, with the exception of the part of the scheme that intersects with the Alder Stream, which has a low-high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a primarily high likelihood of being underlain by BMV land (>60% area BMV), whilst the remainder has a moderate likelihood of BMV land (20-60% area BMV). In this respect, the scheme will likely result in the loss of some productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are	↓

SEA Topic	Commentary	
	incorporated within the design and construction stages of the scheme.	
Cultural heritage	The western end of the scheme is very close to (<50m) two grade II listed buildings. Further along the scheme to the east, near Church Lane, is another grade II listed building 40m south of the scheme, as well as a grade II* listed building 110m north of the scheme. There is also a large cluster of 23 listed buildings 330m south of the scheme, where Church Lane intersects with Alders Road, including one grade I listed building (Church of St Thomas A Becket). Further along the scheme again, near Sychem Lane, is another cluster of five grade II listed buildings 60m north of the scheme. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is 380m north of the High Weald National Landscape, and in this respect, the scheme has potential to significantly affect the setting or special qualities of the National Landscape. The scheme does not intersect with, or pass near, any TPOs. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the scheme will likely have inevitable impacts on landscape character over a large area (approximately 1.5km) and is likely to impact the townscape character of Five Oak Green to the north and Colt's Hill to the southeast. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion along Alders Road, Five Oak Green Road and Badsell Road and support economic growth and the delivery of new development in this location.

However, the proposed bypass has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed bypass has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along Alders Road, Five Oak Green Road and Badsell Road, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the bypass runs through/ near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Foal Hurst Wood LNR. The sensitivities of these areas should be fully recognised when determining the route, layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening, particularly with regards to the High Weald National Landscape.

Table B.1.34 Tunbridge Wells – Paddock Road East site – local road through development linking Mascalls Court Road with Church Lane

New link road approximately 1.5km in length.

Connects Mascalls Court Road (southern end of the scheme), via all movements unsignalized junction, to Church Lane (northern end of the scheme), via all movements unsignalized junction.

Part of a major development site.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The northern half of the scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the potential route of the scheme is 30m from an area of deciduous woodland are the half-way point, and 20m from a small area of traditional orchard at the northern end of the scheme. In this respect, the construction and operation of the scheme has potential to disturb these habitats.	?
Air quality	There is no AQMA near the scheme. Whilst the scheme has potential to improve air quality along Mascalls Court Road and Church Road by reducing traffic and congestion on these roads, through contributing to an overall	?

SEA Topic	Commentary	
	increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	
Population and human health	The scheme has the potential to relieve traffic and congestion on Mascalls Court Road and Church Road and support economic growth and the delivery of new development in the southeast of Paddock Wood. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in the southeast of Paddock Wood. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, whilst the scheme is primarily within Flood Zone 1, it is adjacent to land within Flood Zone 2/ 3 and the northern end of the scheme intersects with this area of increased flood risk. Surface water flood risk in this area is extensive, and largely follows the pattern described for fluvial flood risk. In addition, large stretches of Mascalls Court Road and Church Road have a high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location primarily has a low likelihood of being underlain by BMV land (<20% area BMV). In this respect, the scheme is unlikely to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is near several grade II listed buildings, the closest of which is 80m from the scheme. The southern half of the scheme is more constrained than the northern half in this respect. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting.	↓

SEA Topic	Commentary	
	By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme is 2.1km northeast of the High Weald National Landscape, and in this respect, the scheme is unlikely to significantly affect its setting or special qualities. The scheme passes through a large area of TPOs, and therefore has the potential to lead to the loss of some of these trees. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the scheme will likely have inevitable impacts on landscape character over a large area (the scheme is approximately 1.5km in length) and is likely to impact the townscape character of the southeast side of Paddock Wood. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion along Mascalls Court Road and Church Road and support economic growth and the delivery of new development to the southeast of Paddock Wood.

However, the proposed new road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed new road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along Mascalls Court Road and Church Road, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The potential route of the new road runs near several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be fully recognised when determining the route, layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.35 Tunbridge Wells – Paddock Road North West site – link road A228 to B2160

New link approximately 1.5km in length.

Connects the A228 (western end of the scheme) to the B2160 (eastern end of the scheme), incorporating Transfesa Road on the eastern side.

Part of a major development site.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The end of the scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the western end of the scheme is 100m east of an area of deciduous woodland and traditional orchard and 100m north of a relatively large area of deciduous/ ancient woodland. Similarly, the eastern end of the scheme is 60m southwest of an area of deciduous woodland and 100m southwest of a relatively large area of traditional orchard. In this respect, the construction and operation of the scheme has potential to disturb these habitats.	?
Air quality	There is no AQMA near the scheme. Whilst the scheme has potential to improve air quality along Maidstone Road (A228 and B2160) by reducing traffic and congestion on these roads, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on Maidstone Road (A228 and B2160) and support economic growth and the delivery of new development in the northwest of Paddock Wood. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised	?

SEA Topic	Commentary	
	that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in the northwest of Paddock Wood. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, whilst the western end of the scheme is within Flood Zone 1, the mid-point and eastern end of the scheme, as well as the wider area, is within Flood Zone 2/ 3. Surface water flood risk in this area is largely very low; however, there are a few drains running through the scheme that have a low-high risk of surface water flooding. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme will likely result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The western end of the scheme is 230m southeast of a cluster of three grade II listed buildings in Whetsted. The eastern end of the scheme is 460m west of a grade II listed building. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The start of the scheme is 2km northeast of the High Weald National Landscape, and in this respect, it is unlikely to significantly affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the scheme will likely have inevitable impacts on landscape character over a relatively large area (the scheme is approximately 1.5km in length) and is likely to impact the townscape character of the northwestern side of Paddock Wood. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme.	?

SEA Topic	Commentary	
	Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on Maidstone Road (A228 and B2160) and support economic growth and the delivery of new development to the northwest of Paddock Wood.

However, the proposed link road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along Maidstone Road (A228 and B2160), the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the link road runs near several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be fully recognised when determining the route, layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.36 Tunbridge Wells – Paddock Road South West site – local roads through development connecting Badsell Road and A228

New link road approximately 0.9km in length.

Connects the A228 (northwestern end of the scheme) to Badsell Road (southeastern end of the scheme), formed by all moves unsignalized junction.

Part of a major development site.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally or nationally designated sites for biodiversity, nor does the scheme intersect with an IRZ.	?

SEA Topic	Commentary	
	The southeastern end of the scheme is 190m north of Foal Hurst Wood LNR. In terms of BAP priority habitats, the southeastern end of the scheme is adjacent to an area of traditional orchard to the south, and 190m north of an area of deciduous/ ancient woodland which covers the same area as Foal Hurst Wood LNR. The remainder of the scheme is not particularly close to any priority habitats, however there is a relatively large area of deciduous/ ancient woodland 390m north of the scheme. In this respect, the construction and operation of the scheme has potential to disturb these habitats.	
Air quality	There is no AQMA near the scheme. Whilst the scheme has potential to improve air quality along Badsell Road and Maidstone Road by reducing traffic and congestion on these roads, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on Badsell Road and Maidstone Road and support economic growth and the delivery of new development in the west of Paddock Wood. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that the new road may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows in the west of Paddock Wood. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is almost entirely within Flood Zone 2/ 3. Whilst less extensive than fluvial flood risk, a significant area of the scheme has a low-high surface water flood risk, including Badsell Road. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme will result in the loss of productive agricultural land.	↓

SEA Topic	Commentary	
	No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	
Cultural heritage	The potential route of the scheme is 210m northeast of a cluster of four grade II listed buildings on Badsell Road. There's another two grade II listed buildings 330m southwest of the scheme, at the junction between Badsell Road and Maidstone Road. However, given these buildings are already located along Badsell Road, and the scheme will relieve traffic on these roads to some degree, the scheme is less likely to affect the significance and setting of these assets. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The start of the scheme is 1.1km northeast of the High Weald National Landscape, and in this respect, it is unlikely to significantly affect its setting or special qualities. However, it is recognised that there is open land between the scheme and the National Landscape, and as the National Landscape is at a higher elevation than the scheme, views out of the National Landscape towards Paddock Wood may be impacted. The start of the scheme is 320m southwest of a small TPO area. However, the scheme is unlikely to affect the trees in this designation. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the road. Nevertheless, the scheme will likely have inevitable impacts on landscape character over a relatively large area (the scheme is approximately 900m in length) and is likely to impact the townscape character of the western side of Paddock Wood. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on Badsell Road and Maidstone Road and support economic growth and the delivery of new development to the west of Paddock Wood.

However, the proposed link road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed link road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along Badsell Road and Maidstone Road, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of a large area of productive agricultural land.

Mitigation measures and enhancement opportunities

The potential route of the link road runs near several habitats that have been identified as BAP priority habitats. It also runs relatively close to the Foal Hurst Wood LNR. The sensitivities of these areas should be fully recognised when determining the route, layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening, particularly with regards to the High Weald National Landscape.

Table B.1.38 M2 – road capacity enhancement

- Additional capacity provides additional resilience on a future key route to Channel crossing points, whilst ensuring journey times remain reliable and quick as growth occurs.
- Implementation dependent on outturn of Lower Thames Crossing traffic movements and final adopted Local Plan for Swale.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The western extent of the scheme is 155m north of Queendown Warren SAC, SSSI and LNR. It is also 645m north of Purple Hill SSSI, 685m south of Levan Strice LNR, and 835m south of Foxburrow Wood LNR. The eastern extent of the scheme is 2.3km south of The Swale SPA and SSSI. A small part of western extent of the scheme, near Queendown Warren SAC, SSSI and LNR, intersects with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. The rest of the scheme intersects with an IRZ that is only for aviation proposals, and not road proposals.	↓

SEA Topic	Commentary	
	In terms of BAP priority habitats, the scheme intersects with / is adjacent to several areas of deciduous / ancient woodland and is adjacent to several areas of traditional orchard. It is also 150m north an area of good quality semi-improved grassland and 175m north of an area of lowland calcareous grassland. In this respect, the construction and operation of the scheme has potential to disturb these habitats.	
Air quality	The scheme is in proximity to several AQMAs along the A2 to the north. The closest of these is 'AQMA NO 2/6 Ospringe extended' in Faversham, which is 970m north of the scheme. Whilst the scheme has potential to improve air quality along the A2 by increasing capacity on the M2, thereby reducing traffic and congestion, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	↓
Population and human health	The scheme has the potential to relieve traffic and congestion on the M2 and support economic growth and the delivery of new development between Gillingham and Faversham. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that increasing the capacity of the M2 may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is primarily within Flood Zone 1, with the exception of a few isolated parts that are within Flood Zone 3. Similarly, the scheme is primarily at very low risk of surface water flooding; however, there are isolated areas of the road at low-high risk of surface water flooding.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is within proximity to numerous listed buildings. Most notably, the scheme is adjacent to a grade II listed	↓

SEA Topic	Commentary	
	building at: the end of Primrose Lane, Bregar; and at Little Sharsted Farm near Erriottwood. It is also 150-195m north of two grade II* listed buildings off Clockhouse Lane, southeast of Faversham; 390-520m south of two grade II* listed buildings off Water Lane, south of Faversham; 435m southwest of a grade II* listed building in Oad Street; 510m north of two grade II* listed buildings in Milstead; 510-645m northeast of two grade II* listed buildings in Bredgar; 565m northeast of grade I listed building 'Church of St John the Baptist' in Bredgar; 565-605mm north of two grade II* listed buildings northwest of Stockbury; 585m north of grade I listed building 'Copton Manor' off Ashford Road, south of Faversham; 590m northeast of a grade II* listed building in Bex; 640m north of a grade II* listed building east of Erriottwood; 660m east of a grade II* listed building off Canterbury Road, east of Junction 7 of the M2; 730m north of grade I listed building 'Sharsted Court', northeast of Seed; and 995m northeast of grade I listed building 'Church of St Mary Magdalene' to the east of Stockbury. The scheme is also 1km northeast of scheduled monument 'Ringwork and baileys at Church Farm' to the east of Stockbury; 1km south of scheduled monument 'The Maison Dieu, a 16th century house incorporating part of a medieval hospital' in Faversham; and 1.2km north of grade II registered park and garden 'Doddington Place' to the north of Seed. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. The scheme is 90m south of Faversham – Ospringe Conservation Area; 155m south of Hartlip Conservation Area; 285m northeast of Bredgar Conservation Area; 310m north of Whitehill Conservation Area; 370m north of Milstead Conservation Area; 455m south of Syndale Conservation Area; 540m north of Doddington and Newnham Conservation Area; 555m south of Kingsdown Conservation Area; 560m south of Meresborough Conservation Area; 695m south of Faversham – Faversham Town Conservation Area; and 735m south of Preston-next-Faversham Conservation Area. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme is adjacent to the Kent Downs National Landscape to the south, and in this respect, the scheme is likely to significantly affect its setting or special qualities by increasing road capacity. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the capacity enhancement. Nevertheless, the scheme will likely	↓

SEA Topic	Commentary	
	have inevitable impacts on landscape character over a relatively large area. The scheme has potential to increase noise pollution in the vicinity of this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on the M2 and support economic growth and the delivery of new development between Gillingham and Faversham.

However, the proposed capacity upgrade has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed capacity upgrade has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along the A2, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The M2 intersects with / lies adjacent to several habitats that have been identified as BAP priority habitats. It is also in close proximity to Queendown Warren SAC, SSSI and LNR. The sensitivities of these areas should be fully recognised when determining the layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.39 A21 Kipping's Road – Kipping's Cross roundabout improvements

Improvements to Kipping's Cross roundabout to support future growth.

SEA Topic	Commentary	
Biodiversity, flora and fauna	Whilst this stretch of the A2 is 35m south of Brookland Wood SSSI, Kipping's Cross roundabout is 1.8km from this SSSI. The roundabout intersects with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, whilst this stretch of the A2 intersects with lies adjacent to several areas of deciduous / ancient woodland and traditional orchard, the roundabout is 210m southeast of the nearest area of deciduous woodland.	?
Air quality	There is no AQMA near the scheme. Whilst the scheme has potential to improve air quality locally by improving congestion at Kipping's Cross roundabout, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on this stretch of the A21 and support economic growth and the delivery of new development between Pembury and Lamberhurst. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that relieving the pinch point on this stretch of the A21 may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the roundabout – as well as this stretch of the A21 – is within Flood Zone 1. Similarly, the roundabout has a very low risk of surface water flooding.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are	-

SEA Topic	Commentary	
	incorporated within the design and construction stages of the scheme.	
Cultural heritage	Kipping's Cross roundabout is 60m southeast of a grade II listed building; 75-95m north of two grade II listed buildings; and 185m northwest of a grade II listed building. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. The scheme is not in proximity to any conservation areas. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme intersects with the High Weald National Landscape. However, as the scheme only involves improvements to the roundabout, ii is less likely to significantly affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the roundabout improvements. Nevertheless, the scheme will likely have inevitable impacts on landscape character over a relatively large area by increasing car usage along this stretch of the A21. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on this stretch of the A21 and support economic growth and the delivery of new development between Pembury and Lamberhurst.

However, the proposed capacity upgrade has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed roundabout improvements have the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along the A21, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution

and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

This stretch of the A21 intersects with / lies adjacent to several habitats that have been identified as BAP priority habitats. It is also in close proximity to Brookland Wood SSSI. The sensitivities of these areas should be fully recognised when determining the layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.40 Malling Road to Ashton Road (A26 and A228 stretches) and A228 Seven Mile Lane stretch – capacity enhancement

The most extensive option is dualling.

Includes junction enhancements at Mereworth and at the junction of Seven Mile Lane with Tonbridge Road, as well as the junction of Malling Road with Ashton Road.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The southern end of the scheme is 1.9km west of the River Beult SSSI. Only the very southern end of the scheme intersects with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme intersects / lies adjacent to several areas of deciduous / ancient woodland, wood pasture and parkland and traditional orchard.	↓
Air quality	There is no AQMA near the scheme. Whilst the scheme has potential to improve air quality locally by improving congestion along these stretches of the A26 and A228, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion on these stretches of the A26 and A228 and support economic growth and the delivery of new development between Kings Hall and Yalding. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised	?

SEA Topic	Commentary	
	that relieving the pinch point on these stretches of the A26 and A228 may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the majority of the scheme is within Flood Zone 1, with the exception of a small section to the south of Mereworth and the southern end of the scheme, which are both within Flood Zone 3. Similarly, the majority of the scheme has a very low risk of surface water flooding, with the exception of some areas which have a low-high risk of surface water flooding. These areas largely correlate with the areas of increased fluvial flood risk.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is in proximity to several listed buildings, most notably: adjacent to grade II* registered park and garden 'Mereworth Castle' south of King's Hill'; adjacent to three grade II listed buildings at the junction with The Street and another slightly further south of the junction; 40m northwest of scheduled monument 'World War II Bofors Anti-aircraft gun tower, Pickett-Hamilton fort and pillbox: part of the airfield defences of RAF West Malling fighter station' in the north of King's Hill; 155m east of grade I listed building 'Church of St Lawrence' on The Street; 230m west of grade II* listed building 'Church of St Michael' on Old Church Lane; 255m east of grade II* listed building 'Forge Gate Farmhouse' on Maidstone Road; 265m southwest of grade II* listed building 'Dower House' off Roydon Hall Road; and 390m southwest of scheduled monument 'Earthwork in Milbay's Wood' to the west of Nettlestead Green. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. The scheme intersects with The Street, Mereworth Conservation Area; is adjacent to Mereworth Castle Conservation Area; and is 30m southwest of Roydon, East Peckham Conservation Area; 225m west of Butchers Lane, Mereworth Conservation Area; 415m south of West Malling Conservation Area; 550m southeast of Yotes Court Conservation Area; 675m southwest of New Barns and	↓

SEA Topic	Commentary	
	Broadwater Farm Conservation Area; and 870m east of West Peckham Conservation Area. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme is not within proximity to a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the capacity enhancements. Nevertheless, the scheme will likely have inevitable impacts on landscape character over a relatively large area by increasing car usage along these stretches of the A26 and A228. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on these stretches of the A26 and A228 and support economic growth and the delivery of new development between Kings Hill and Yalding.

However, the proposed capacity upgrade has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed capacity enhancements have the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along the A26 and A228, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

These stretches of the A26 and A228 intersect with / lie adjacent to several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be fully recognised when determining the layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.41 Sittingbourne Northern Relief Road

Linking Swale Way to the A2.

Entails two new junctions onto the A2.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 545m southwest of The Swale SPA, Ramsar site and SSSI. The scheme intersects with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is 20-65m south of two areas of deciduous woodland and 60m south of an area of traditional orchard.	↓
Air quality	The scheme is 1.1km east of AQMA No 3 - East Street, Sittingbourne Kent, which is directly connected to the scheme via the A2. Whilst the scheme has potential to improve air quality along the A2 by diverting traffic to the relief road, thereby reducing traffic and congestion, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	↓
Population and human health	The scheme has the potential to relieve traffic and congestion on this stretch of the A2 and support economic growth and the delivery of new development to the east of Sittingbourne. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. However, it is recognised that relieving the pinch point on this stretch of the A2 may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the majority of the scheme is within Flood Zone 3, with the exception of the new eastern junction onto the A2, which is within Flood Zone 3. Similarly, the majority of the scheme has a very low risk of	↓

SEA Topic	Commentary	
	surface water flooding, with the exception of some areas which have a low-high risk of surface water flooding.	
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV), and therefore the scheme is likely to lead to the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is 130-220m northeast of three grade II listed buildings on The Street (A2); 260m southwest of two listed buildings on Church Road; 260-380m northwest of three grade II listed buildings on London Road (A2); 270m north of grade I listed building 'Church of St Lawrence' on the western side of Bapchild'; 290m northeast of a grade I listed building on Dully Road; 320m northeast of a cluster of three grade II listed buildings off Church Road; and 335m southwest of grade I listed building 'Church of St Giles' on Church Road. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. The scheme intersects with Tonge Conservation Area. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is not within proximity to a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the relief road. Nevertheless, the scheme will likely have inevitable impacts on landscape character by increasing car usage along this stretch of the A2. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on this stretch of the A2 and support economic growth and the delivery of new development to the east of Sittingbourne.

However, the proposed relief road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed relief road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along the A2, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

This stretch of the A2 is in proximity to several habitats that have been identified as BAP priority habitats. It is also in proximity to The Swale SPA, Ramsar site and SSSI. The sensitivities of these areas should be fully recognised when determining the layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.1.42 Sittingbourne Southern Relief Road

A new road corridor, with public transport and walking and cycling provision along much of its length, between the A2 and M2, including creation of a new M2 junction.

Connects to A2 at proposed location of new Northern Relief Road eastern junction.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 1.7m southeast of The Swale SPA, Ramsar site and SSSI. Only the northeastern end of the scheme intersects with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme intersects with / lies adjacent to areas of deciduous / ancient woodland and traditional orchard.	↓
Air quality	The northeastern end of the scheme is 2.3km southeast of AQMA No 3 - East Street, Sittingbourne Kent, which is directly connected to the scheme via the A2. Whilst the scheme has potential to improve air quality along the A2 by diverting traffic to the relief road, thereby reducing traffic and congestion, through contributing to an overall	↓

SEA Topic	Commentary	
	increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	
Population and human health	The scheme has the potential to relieve traffic and congestion on these stretches of the A2 and M2 and support economic growth and the delivery of new development to the southeast of Sittingbourne. Whilst the scheme has the potential to support accessibility by car, it also has the potential to increase car usage by reducing journey times by car. An increase in car use has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. However, the scheme does support the use of healthy modes of travel, such as walking and cycling. In addition, it is recognised that relieving the pinch point on these stretches of the A2 and M2 may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the majority of the scheme is within Flood Zone 3, with the exception of the northeastern end of the scheme and the section of the scheme between Broadoak Road and Highsted Road, which is within Flood Zone 3. Similarly, the majority of the scheme has a very low risk of surface water flooding, with the exception of some areas which have a low-high risk of surface water flooding. These areas of low-high risk broadly cover the same areas within Flood Zone 3.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV), and therefore the scheme is likely to lead to the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is in proximity to numerous listed buildings. Most notably, the scheme is 180m northeast of a grade II listed building in Highsted; 215m east of a grade I listed building on Dully Road; 230-345m northeast of three grade II listed buildings on London Road (A2); 305m north of a grade II listed building on Hawks Hill Lane; and 425m north of grade I listed building 'Church of St Nicholas' in Rodmersham (as well as three grade II listed buildings in this location).	↓

SEA Topic	Commentary	
	Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. The scheme is 500m northwest of Rodersham Green Conservation Area; 520m southeast of Tonge Conservation Area; and 980m northwest of Milstead Conservation Area. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The southwestern end of the scheme is adjacent to the Kent Downs National Landscape, and in this respect, the scheme is likely to significantly affect its setting or special qualities by delivering a new relief road. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the relief road. Nevertheless, the scheme will likely have inevitable impacts on landscape character by increasing car usage along these stretches of the A2 and M2. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that road schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion on these stretches of the A2 and M2 and support economic growth and the delivery of new development to the southeast of Sittingbourne.

However, the proposed relief road has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed relief road has the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements along the A2 and M2, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

These stretches of the A2 and M2 are in proximity to several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be fully recognised when determining the layout and design of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

B.2 Junction schemes

Table B.2.1 Ashford – Canterbury Road / Simone Weil Avenue – capacity improvement to the traffic signal junction

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 230m northwest of Ashford Green Corridors LNR. Half of the scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is 260m northwest of an area of deciduous woodland adjacent to Ashford Green Corridors LNR. In addition, the scheme is 300m southeast of another area of deciduous woodland. The scheme is unlikely to lead to the significant disturbance of these habitats.	-
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles.	↓

SEA Topic	Commentary	
	In terms of climate change adaptation, whilst the scheme is primarily within Flood Zone 1, there is a small, isolated area near the junction within Flood Zone 2. Surface water flood risk is primarily very low/ low at this location, however there are isolated areas at medium/ high risk of surface water flooding in and around the scheme. In this respect, flood mitigation measures will likely be needed.	
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is 280m southwest of a cluster of five grade II listed buildings on Canterbury Road and 350m northeast of another two grade II listed buildings within a conservation area. Given the relative proximity of the scheme these heritage assets, there is potential for the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is 2.3km south of the Kent Downs National Landscape. The impacts of the scheme on townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the townscape character of this part of Ashford by increasing traffic flows in this location. The scheme also has the potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around the junction.

However, the proposed junction upgrades have the potential to impact on townscape character and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around the junction, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

Potential impacts on the setting of the historic environment and landscape/townscape character should be minimised through appropriate design and layout and screening.

Table B.2.2 Ashford – William Harvey Hospital Roundabout – widening of A2070 entry arms

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 690m northeast of Ashford Green Corridors LNR and 1.6km northwest of Hatch Park SSSI. The scheme intersects with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is adjacent to two areas of deciduous woodland to the northwest and south. Therefore, the scheme has the potential to lead to the loss of/ disturbance of these habitats.	?
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, whilst the scheme is within Flood Zone 1. Surface water flood risk is primarily very low/ low at this location, however there are isolated areas at medium/ high risk of surface water flooding in and around the scheme. In this respect, flood mitigation measures will likely be needed.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-

SEA Topic	Commentary	
Cultural heritage	The scheme is 80m southwest of a conservation area and 120-440m from 15 grade II listed buildings within this conservation area. In addition, the scheme is 830m north of grade I listed building 'Church of St Mary' located at the end of Church Road. Given the proximity of the scheme these heritage assets, there is potential for the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is 2.6km southwest of the Kent Downs National Landscape. The impacts of the scheme on townscape character will depend on the detailed design and layout of the roundabout upgrade scheme. Nevertheless, the scheme is likely to impact the townscape character of this part of Willesborough by increasing traffic flows in this location. The scheme also has the potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that roundabout upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around the junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally, townscape character and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around the junction, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Ashford Green Corridors LNR. These areas should be avoided when determining the design and layout of the scheme.

Potential impacts on the setting of the historic environment and landscape/townscape character should be minimised through appropriate design and layout and screening.

Table B.2.3 Ashford – Church Hill - Pound Lane - Ashford Road junction signalisation

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is 440m south of an area of good quality semi-improved grassland and 450m northwest of another area of good quality semi-improved grassland. In addition, the scheme is 740m west of an area of deciduous/ ancient woodland. As the scheme only involves junction signalisation, it is unlikely to affect these habitats.	-
Air quality	The scheme is not near an AQMA. As the scheme only involves signalisation of junctions, it is unlikely to have a significantly effect on air quality.	-
Population and human health	The scheme has the potential to support accessibility by all modes by improving signalisation. The scheme is unlikely to affect air quality, noise pollution and the quality of the public realm over a wider area as it only involves signalisation of junctions.	↑
Climatic factors	In terms of climate change mitigation, the scheme is unlikely to increase significantly overall traffic flows on the road network as it only involves signalisation. In terms of climate change adaptation, whilst the scheme is within Flood Zone 1, there is a large area of land within Flood Zone 2/ 3 to the northwest of the scheme. Surface water flood risk at this location varies between very low and high. In this respect, flood mitigation measures will likely be needed.	-
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is adjacent to two grade II listed buildings to the northeast and northwest, and 60m from another grade II listed building to the southeast. In addition, the scheme is 480m	-

SEA Topic	Commentary	
	west of grade I listed building 'Church of St Michael' and 510m south of scheduled monument 'Romano-British roadside settlement and World War II pillbox immediately east of Westhawk Farm'. However, given the scheme involves signalisation of junctions, it is unlikely to significantly affect these heritage assets.	
Landscape, noise and tranquillity	The scheme is not near a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is unlikely to have any significant impacts.	-
Material assets	The scheme is unlikely to use many materials as it only involves signalisation of junctions.	↑

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme is unlikely to lead to many significant effects as it only involves junction signalisation. It does however have the potential to support accessibility by all modes of transport, depending on the nature of signalisation.

Mitigation measures and enhancement opportunities

No mitigation measures or enhancement opportunities are identified.

Table B.2.5 Canterbury – New A2 junction for Mountfield Park development

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is 270m northwest of a thin strip of deciduous woodland. In addition, the scheme is 220m north of a small area of ancient woodland. Therefore, the scheme has the potential to lead to some loss of/ disturbance of these habitats, although this is uncertain.	?
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion through a new junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?

SEA Topic	Commentary	
Population and human health	The scheme has the potential to relieve traffic and congestion in and around this location and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. However, surface water flood risk in this location is low-high. In this respect, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (>60% area BMV), and therefore the scheme is likely to lead to the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is 150m northwest of Renville Farm and Bridge Railway Station (Bridge) Conservation Area. In addition, the scheme is 360m northwest of the nearest designated heritage asset, which is a grade II listed building. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is 1.1km north of the Kent Downs National Landscape, and therefore there may be some potential for the scheme to affect its setting or special qualities. The impacts of the scheme on landscape/ townscape character will depend on the detailed design and layout of the roundabout upgrade scheme. Nevertheless, the scheme is	?

SEA Topic	Commentary	
	likely to impact landscape character in this location due to the open nature of the location. The scheme also has the potential to increase noise pollution in the vicinity of this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that roundabout upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this location.

However, the proposed new junction has the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed new junction has the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of productive agricultural land.

Mitigation measures and enhancement opportunities

The new junction is near several habitats that have been identified as BAP priority habitats. These areas should be avoided when determining the design and layout of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening, including with regards to the presence of the Kent Downs National Landscape.

Table B.2.6 Dartford – M25 Junction 1A

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not located near any internationally, nationally or locally designated sites for biodiversity. Half of the scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to West Thurrock Lagoon & Marches SSSI, which is located 2km northeast of the scheme. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is adjacent to several areas of deciduous woodland to the southeast and southwest, and there are several other areas of this habitat within 1km of the scheme. In this respect, the scheme has the potential to lead to the loss of/ disturbance of these habitats.	?
Air quality	The southern half of this scheme intersects with Dartford AQMA No 1, which was declared due to high levels of particulate matter (PM_{10}) and NO_2. Whilst the scheme has potential to improve air quality in and around this AQMA by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, whilst the southwestern half of the scheme is within Flood Zone 1, the northeastern half of the scheme is within Flood Zone 3 associated with the River Thames. Surface water flood risk is primarily very low at this location, however there are isolated areas at low-high risk of surface water flooding in and around the scheme. In this respect, flood mitigation measures will likely be needed.	↓

SEA Topic	Commentary	
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is 820-920m northwest of two grade II listed buildings and is therefore unlikely to adversely affect their fabric and setting. However, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is not near a National Landscape. The impacts of the scheme on townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the townscape character of this part of Dartford by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally, landscape character, and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. These areas should be avoided when determining the design and layout of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.7 Dover – Whitfield Roundabout

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is located 930m southeast of Lydden Temple NNR. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is adjacent to an area of deciduous woodland to the southwest, and several other areas of deciduous woodland are in proximity of the scheme. In this respect, the scheme has the potential to lead to the loss of/ disturbance of these habitats.	↓
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this roundabout, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the roundabout and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the roundabout upgrades may benefit the reliability of bus services, supporting accessibility by public transport, and provide opportunities for the integration of active travel networks.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1, and surface water flood risk is very low.	↓

SEA Topic	Commentary	
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is 650m south of a grade II listed building on Bewsbury Cross Lane, which is at relative distance from the scheme, and is therefore unlikely to adversely affect their fabric and setting. However, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is 1.7km east of the Kent Downs National Landscape and is therefore unlikely to significantly affect its setting or special qualities. The impacts of the scheme on townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the townscape character of this part of Whitfield by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that roundabout upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. These areas should be avoided when determining the design and layout of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.8 Dover – Duke of York Roundabout

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is located 1.1km north of the Dover to Kingsdown Cliffs SSSI and 1.2km north of the Dover to Kingsdown Cliffs SAC. The scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to the designated sites listed above. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is 390m southeast of a small area of deciduous woodland adjacent to the A2. In this respect, the scheme has the potential to lead to the loss of/ disturbance of this habitat.	?
Air quality	The scheme is 2.5km from the A20 AQMA following the route of Jubilee Way and the A20, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this roundabout, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the roundabout and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the roundabout upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has	↓

SEA Topic	Commentary	
	the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1, and surface water flood risk is very low.	
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme is likely to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is near a cluster of 15 grade II listed buildings at the Duke of York's Royal Military School, the closest of which is 170m southwest of the scheme. In addition, the scheme is 1km northeast of scheduled monument 'Fort Burgoyne'. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The southeastern half of the scheme intersects with the Kent Downs National Landscape and is therefore likely to significantly affect its setting or special qualities. The impacts of the scheme on landscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the landscape character in this location, particularly to the southeast, by increasing traffic flows in this location. The scheme is also likely to impact the character of the Duke of York's Royal Military School to the southwest. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that roundabout upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on landscape character, and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of productive agricultural land.

Mitigation measures and enhancement opportunities

Potential impacts on the setting of the historic environment and landscape character should be minimised through appropriate design and layout and screening, including with regards to the Kent Downs National Landscape.

Table B.2.9 Dover – A257 / Sandwich Bypass / Ash Road

SEA Topic	Commentary	
Biodiversity, flora and fauna	Whilst on the other side of Sandwich, the scheme is 1.9km west of Sandwich Bay SAC and Sandwich Bay to Hacklinge Marshes SSSI and 2.1km west of Thanet Coast & Sandwich Bay SPA/ Ramsar site. The scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to the designated sites listed above. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is 320m north of an area of deciduous woodland adjacent to the A256 and 440m north of an area of good quality semi-improved grassland next to the deciduous woodland. In this respect, the scheme has the potential to lead to the disturbance (if not loss) of these habitats.	?
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this roundabout, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the roundabout and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of	?

SEA Topic	Commentary	
	the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the roundabout upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, whilst the scheme is within Flood Zone 1, the land surrounding the roundabout is within Flood Zone 2/ 3. Surface water flood risk is very low in this location, however immediately to the south of the roundabout surface water flood risk is low/ medium. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a moderate likelihood of being underlain by BMV land (20-60% area BMV). In this respect, the scheme has the potential to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	?
Cultural heritage	The scheme is 470m west of a grade II listed building set back from Ash Road. In addition, the scheme is 710m west of Sandwich – Walled Town Conservation Area, which contains scheduled monument 'Sandwich town walls: section from Woodnesborough Gate to Canterbury Gate', which is 940m southeast of the scheme. To the east of this scheduled monument, in Sandwich, are numerous listed buildings, some of which are within 1km of the scheme. Given the proximity of the scheme to these heritage assets, there is potential for the traffic flow changes from the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is not near a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the landscape character in this location, as well as the townscape character of the western side of Sandwich, by increasing traffic flows in this location.	?

SEA Topic	Commentary	
	The scheme has potential to increase noise pollution in the vicinity of this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that roundabout upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on townscape/landscape character and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and may result in the loss of productive agricultural land.

Mitigation measures and enhancement opportunities

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.10 Dover – A256 Sandwich Bypass / A258 Deal Road / A256 (S)

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is located 1km north of Thanet Coast & Sandwich Bay Ramsar site and Sandwich Bay to Hacklinge Marshes SSSI. The scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to the designated sites listed above. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is adjacent to an area of deciduous woodland to the east, adjacent to the A258. In addition, the scheme is 860m north of an area of good quality semi-improved grassland. In this respect, the scheme has the potential to lead to the loss of/ disturbance of these habitats.	↓
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this roundabout, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the roundabout and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the roundabout upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. Surface water flood risk is very low in this location, however immediately to the south of the roundabout surface water flood risk is low/ medium/ high. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location has a high likelihood of being underlain by BMV land (60% area BMV). In this respect, the scheme will likely result in the loss of productive agricultural land.	↓

SEA Topic	Commentary	
	No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	
Cultural heritage	The scheme is 570-770m north of nine grade II listed buildings and one grade II* listed building on Felderland Lane. In addition, the scheme is 760-910m southwest of three grade II listed buildings on Dover Road and 950m east of a grade II listed building at the end of a private road off The Street in Woodnesborough. There is also a scheduled monument at the end of this private road, 'Medieval moated site at Grove Manor Farm', which is located 1km from the scheme. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is not near a National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the landscape character in this location, as well as the townscape character of Stone Cross to the northeast, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that roundabout upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally and landscape/townscape character.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use

through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of productive agricultural land.

Mitigation measures and enhancement opportunities

The junction is located near several habitats that have been identified as BAP priority habitats. These areas should be avoided when determining the design and layout of the scheme.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.13 Folkestone and Hythe – A20 A260 Spitfire Way junction

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 470m north of Folkestone to Etchinghill Escarpment SAC/ SSSI. The scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to the designated sites listed above. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is 220m north of an area of deciduous woodland, 310m southeast of an area of deciduous/ ancient woodland (Killing Wood), 450m north of an area of lowland calcareous grassland, 500m east of an area of deciduous woodland, and 550m northwest of an area of good quality semi-improved grassland. In this respect, the scheme has the potential to lead to the disturbance of these habitats.	?
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the roundabout upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?

SEA Topic	Commentary	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1, and surface water flood risk in this location is low. However, there is a small, isolated area of high surface water flood risk adjacent to the scheme to the northwest. Therefore, flood mitigation measures will likely be needed.	↓
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme is likely to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is 430m west of a grade II listed building on Alkham Valley Road and 750m from another grade II listed building at the end of Terlingham Lane. In addition, the scheme is 900m northeast of scheduled monument 'Medieval ringwork with bailey and approach causeway, incorporating a bowl barrow on Castle Hill'. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme intersects with the Kent Downs National Landscape, and therefore has the potential to significantly affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the landscape character in this location, as well as the townscape character of Hawkinge to the northwest, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally and landscape character.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and has the potential to result in the loss of productive agricultural land.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Folkestone to Etchinghill Escarpment SAC/ SSSI. These areas should be avoided when determining the final route of the scheme.

Potential impacts on landscape character should be minimised through appropriate design and layout and screening, including in association with the special qualities of the Kent Downs National Landscape with which the scheme intersects.

Table B.2.16 Folkestone and Hythe – A260 Alkham Valley Road junction – capacity improvement

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 230m north of Folkestone to Etchinghill Escarpment SAC/ SSSI. The scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to the designated sites listed above. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is adjacent to an area of deciduous woodland to the southwest, 210m north of an area of lowland calcareous grassland, and 340m northwest of an area of good quality semi-improved grassland. In this respect, the scheme has the potential to lead to the loss of/ disturbance of these habitats.	?
Air quality	The scheme is not near an AQMA.	?

SEA Topic	Commentary	
	Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the roundabout upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1, and surface water flood risk in this location is very low/ low.	↓
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme is likely to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is 510m southwest of a grade II listed building on Alkham Valley Road and 870m southeast of another grade II listed building at the end of Terlingham Lane. In addition, the scheme is 770m northeast of scheduled monument 'Medieval ringwork with bailey and approach causeway, incorporating a bowl barrow on Castle Hill'. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?

SEA Topic	Commentary	
Landscape, noise and tranquillity	The scheme intersects with the Kent Downs National Landscape, and therefore has the potential to significantly affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the landscape character in this location, as well as the townscape character of Folkestone to the south, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on landscape and townscape character.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of productive agricultural land.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. It is also located close to the Folkestone to Etchinghill Escarpment SAC/ SSSI. The sensitivities of these areas should be recognised in scheme design and layout.

Potential impacts on landscape/ townscape character should be minimised through appropriate design and layout and screening, particularly with regards to the special qualities of the Kent Downs National Landscape which the scheme intersects.

Table B.2.17 Folkestone and Hythe – Alkham Valley Road / A20 London bound on-slip / A20 London bound off-slip – widening of Alkham Valley Road arm

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is located 390m north of Folkestone to Etchinghill Escarpment SAC/ SSSI. The scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to the designated sites listed above. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is 170m northeast of an area of deciduous woodland, 370m southeast of an area of deciduous/ ancient woodland (Killing Wood), 370m north of an area of lowland calcareous grassland, and 440m north of an area of good quality semi-improved grassland. In this respect, the scheme has the potential to lead to the disturbance (if not loss) of these habitats.	?
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the roundabout upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1, and surface water flood risk in this location is very low/ low. However, there is a small, isolated area of high surface water flood risk to the northeast of the roundabout between the A20 slip road and Alkham Valley Road. Therefore, flood mitigation measures will likely be needed.	↓

SEA Topic	Commentary	
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme is likely to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is 62m northwest of a grade II listed building on Alkham Valley Road and 530m southwest of a cluster of three grade II listed buildings and one grade I listed building (Church of St. Michael) to the north of the A20. In addition, the scheme is 930m northeast of scheduled monument 'Medieval ringwork with bailey and approach causeway, incorporating a bowl barrow on Castle Hill'. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme intersects with the Kent Downs National Landscape, and therefore has the potential to significantly affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the landscape character in this location, as well as the townscape character of Hawkinge to the northwest, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on landscape character and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of productive agricultural land.

Mitigation measures and enhancement opportunities

Potential impacts on the setting of the historic environment and landscape character should be minimised through appropriate design and layout and screening, particularly with regards to the Kent Downs National Landscape with which the scheme intersects.

Table B.2.19 Maidstone – M20 Junction 7

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is located 480m northeast of Vinters Valley Park LNR. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is adjacent to several areas of deciduous/ ancient woodland to the northeast and northwest, and there is also a small area of deciduous woodland within the junction roundabout. In addition, the scheme is 480m northeast of deciduous woodland/ wood-pasture and parkland that covers Vinters Valley Park LNR. In this respect, the scheme has the potential to lead to the loss of/ disturbance of this habitat.	↓
Air quality	The scheme intersects with Maidstone Borough AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is	?

SEA Topic	Commentary	
	recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is within Flood Zone 1 and primarily at very low risk of surface water flooding, with only a few small, isolated areas at medium-high risk of surface water flooding.	↓
Soil and water quality	The undeveloped land in this location primarily has a low likelihood of being underlain by BMV land (<20% area BMV). In this respect, the scheme is unlikely to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is 390m north of a grade II listed building, and 700m northeast of another grade II listed building. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect its fabric and setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The northern half of the scheme intersects with the Kent Downs National Landscape, and therefore it is likely to significantly affect its setting or special qualities. The scheme borders TPOs to the north, east and south, which could be lost as a result of the scheme. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact landscape character to the north, as well as the townscape character of Detling to the northeast, Harbourland to the west, and Maidstone to the south, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme.	?

SEA Topic	Commentary	
	Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on landscape character, including associated with the Kent National Landscape, and impact on key biodiversity habitats.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is adjacent to and near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Vinters Valley Park LNR. These areas should be avoided when determining the layout and design of the scheme.

Potential impacts on landscape/ townscape character should be minimised through appropriate design and layout and screening, including with regards to the special qualities of the Kent Downs National Landscape with which the scheme intersects.

Table B.2.20 Maidstone – Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction upgrades

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. The scheme is not near any BAP priority habitats.	-
Air quality	The scheme intersects with Maidstone Borough AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion on Heritage Lane, St Andrews Road and Fountain Lane, through contributing to an overall increase in traffic flows on the road network, the	?

SEA Topic	Commentary	
	scheme also has the potential to worsen air quality over a wider area.	
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is within Flood Zone 1. Whilst the scheme is primarily at very low risk of surface water flooding, part of the road at this junction has a medium risk of surface water flooding, particularly Fountain Lane.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is located 190m, 300m and 340m west of three grade II listed buildings on St Andrew's Road. In addition, the scheme is located 220m southwest of a large grade II listed building (St Andrew's House at Oakwood Hospital) set back from St Andrew's Road. Whilst the scheme is 150m northwest of another grade II listed building on Tonbridge Road, this is not visible from this junction. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect its fabric and setting. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is located 4.4km southwest of the Kent Downs National Landscape, and therefore it is unlikely to significantly affect its setting or special qualities.	?

SEA Topic	Commentary	
	The impacts of the scheme on townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme has the potential to impact on the townscape character of this part of Maidstone by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on the setting of heritage assets and townscape character.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

Potential impacts on the setting of the historic environment and townscape character should be minimised through appropriate design and layout and screening.

Table B.2.21 Maidstone – Willington Street and Wallis Avenue junction improvements

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The scheme intersects with an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will need to be consulted on the likely risks from the scheme.	?

SEA Topic	Commentary	
	In terms of BAP priority habitats, the scheme is 190m southwest of an area of deciduous/ ancient woodland, and 360m from another area of deciduous/ ancient woodland bordering Sutton Road. In this respect, the scheme has the potential to lead to some disturbance of this habitat.	
Air quality	The scheme intersects with Maidstone Borough AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion on Willington Street, Sutton Road and Wallis Avenue, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is within Flood Zone 1. Whilst the scheme is primarily at very low risk of surface water flooding, further to the east and west Sutton Road is at high risk of surface water flooding. In addition, Wallis Avenue is at medium risk of surface water flooding. In this respect, flood mitigation measures will likely be needed.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The nearest heritage asset is a grade II listed building on Sutton Road, located 740m southeast of the scheme. In this respect, it is unlikely that the scheme will significantly impact on its fabric and setting.	?

SEA Topic	Commentary	
	Nevertheless, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme is 4.4km southwest of the Kent Downs National Landscape, and therefore it is unlikely to significantly affect its setting or special qualities. The scheme is located 100m east of a TPO area adjacent to Sutton Road; however, the scheme is unlikely to lead to the loss of trees in this area. The impacts of the scheme on townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact the townscape character of this part of Maidstone by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally and townscape.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. The sensitivities of these areas should be reflected in scheme design and layout.

Potential impacts on townscape character should be minimised through appropriate design and layout and screening.

Table B.2.22 Maidstone – Willington Street and A20

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 910m southeast of Vinters Valley Park LNR. The scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to Spot Lane Quarry SSSI, located 1.4km southeast of the scheme. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is adjacent to a large area of deciduous woodland to the southwest. In this respect, the scheme has the potential to lead to the loss of/ disturbance of this habitat.	↓
Air quality	The scheme is located 130m east of Maidstone Borough AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion on Willington Street and Ashford Road/ Lord Romney's Hill (A20), through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, whilst the scheme is within Flood Zone 1, it is 130m east of a strip of land cutting through the A20 that is within Flood Zone 3. Surface water	↓

SEA Topic	Commentary	
	flood risk shows a similar pattern; whilst the scheme primarily has a very low/ low risk of surface water flooding, the same strip of land has a medium-high risk of surface water flooding. In this respect, flood mitigation measures will likely be needed.	
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is adjacent to the grade II listed registered park and garden Mote Park to the southwest, which contains several listed buildings, including one grade II*, which is located 590m southwest of the scheme. In addition, the scheme is adjacent to a grade II listed building to the southeast and is located 460m east of two more grade II listed buildings off the A20. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their fabric and setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is 2.1km south of the Kent Downs National Landscape, and therefore it is unlikely to significantly affect its setting or special qualities. The scheme is located 140m east of two individual TPOs along the A20; however, the scheme is unlikely to lead to the loss of trees in this area. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact landscape character to the southwest (Mote Park), as well as the townscape character of this part of Maidstone by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑

Key

No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to have significant impacts on key biodiversity habitats present locally and the fabric and setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is in proximity to habitats that have been identified as BAP priority habitats. It also runs relatively close to Vinters Valley Park LNR. The sensitivities of these areas should be reflected in scheme layout and design.

Potential impacts on the fabric and setting of the historic environment should be minimised through appropriate design and layout and screening.

Table B.2.24 Sevenoaks – Bat and Ball junction – A225 / A25 – capacity upgrade

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is located 130m southeast of Sevenoaks Gravel Pits SSSI, and although further away, 1km southwest of Greatness Brickworks SSSI. The scheme intersects with an IRZ for transport proposals including road, rail and by water, which is linked to Sevenoaks Gravel Pits SSSI. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme is 120m southeast of a large area of deciduous woodland that intersects with Sevenoaks Gravel Pits SSSI. The scheme is also 340m west of another, smaller area of deciduous woodland off Hillingdon Avenue. In this respect, the scheme has the potential to lead to the disturbance of these habitats.	↓
Air quality	The scheme intersects with AQMA No 13 (A25), which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around this AQMA by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is within Flood Zone 1. Similarly, the scheme is primarily at very low risk of surface water flooding; however, there are small, isolated areas of the junction at low-medium risk of surface water flooding.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land.	-

SEA Topic	Commentary	
	No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	
Cultural heritage	The scheme is 150m northwest of a grade II listed building off Hospital Road, and 160m southwest of another grade II listed building Bat and Ball railway station. In addition, the scheme is 730m west of scheduled monument 'Bowl barrow in Millpond Wood', and 850m northeast of grade II* listed building 'Bradbourne Farmhouse' off Bradbourne Vale Road (A25). Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect its fabric and setting. The scheme is 540m north of Sevenoaks – Hartslands Conservation Area, and 910m west of Wildernesse Conservation Area. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is 1.4km west and north of the Kent Downs National Landscape, and therefore it is unlikely to significantly affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact landscape character to the northwest, as well as the townscape character of this part of Sevenoaks, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally (including nationally designated sites), and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Sevenoaks Gravel Pits SSSI. The specific sensitivities of these locations should be fully recognised in scheme design and layout.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.25 Swale – Brenley Corner M2

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally, nationally or locally designated sites for biodiversity. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is 380m east of an area of deciduous woodland, 490m southwest of an area of traditional orchard, and 620m west of another area of deciduous woodland. In this respect, the scheme has the potential to lead to the disturbance of this habitat.	?
Air quality	The scheme is not near an AQMA. Whilst the scheme has potential to improve air quality in and around this location by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of	?

SEA Topic	Commentary	
	the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is within Flood Zone 1. Similarly, the scheme is primarily at very low risk of surface water flooding; however, there are small, isolated areas adjacent to the scheme at medium-high risk of surface water flooding.	↓
Soil and water quality	The undeveloped land in this location primarily has a high likelihood of being underlain by BMV land (>60% area BMV). In this respect, the scheme is likely to result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	↓
Cultural heritage	The scheme is 610m northwest of a grade II listed building off Canterbury Road and 660m west of grade II* listed building Nash Court. In addition, the scheme is 910m northeast of two more grade II* listed buildings at Colkins. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect its fabric and setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is 840m northeast of the Kent Downs National Landscape, and therefore has the potential to affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact landscape character in this location, as well as the townscape character of Faversham to the northwest and Boughton-under-Blean to the southeast, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	↓

SEA Topic	Commentary	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on landscape character.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation and will result in the loss of productive agricultural land.

Mitigation measures and enhancement opportunities

Potential impacts on landscape/ townscape character should be minimised through appropriate design and layout and screening, particularly with regards to the Kent Downs National Landscape.

Table B.2.27 Tonbridge and Malling – Hermitage Lane / St Andrews Road / Fountain Lane improvements including junction

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not located near any internationally, nationally or locally designated sites for biodiversity. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. The scheme is not located near any BAP priority habitats.	-
Air quality	The scheme fully intersects with Maidstone Borough AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion at this junction, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?

SEA Topic	Commentary	
Population and human health	The scheme has the potential to relieve traffic and congestion in and around this junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1. However, surface water flood risk along Fountain Lane/ Farleigh Lane, as well as parts of Tonbridge Road, is medium-high in some areas. In this respect, flood mitigation measures will likely be needed.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is located 100m southwest of a grade II listed building on Tonbridge Road. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?
Landscape, noise and tranquillity	The scheme is 4.6km southwest of the Kent Downs Area of Outstanding Natural Beauty (National Landscape). The impacts of the scheme on townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact townscape character in this location by increasing traffic flows. However, the scheme may also improve townscape character by reducing traffic and congestion at this location. The scheme has potential to increase noise pollution in the vicinity of this location.	?
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme.	?

SEA Topic	Commentary	
	Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.29 Tonbridge and Malling – A20 / Hall Road / Mills Road

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 790m from Ditton Quarry LNR to the southwest. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is adjacent to an area of deciduous woodland to the east. In this respect, the scheme has the potential to lead to the loss of/disturbance of this habitat.	↓
Air quality	The scheme fully intersects with Tonbridge and Malling – Aylesford AQMA, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion at this location, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?

SEA Topic	Commentary	
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is within Flood Zone 1. Whilst surface water flood risk in this location is primarily very low, small parts of the roads that make up this junction intersect with areas of land at medium-high risk of surface water flooding. In this respect, flood mitigation measures will likely be needed.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is adjacent to a grade II listed building to the north. Given the proximity of the scheme to this heritage asset, there is potential for the scheme to adversely affect its fabric and setting. The scheme is 260m from Holtwood Aylesford Conservation Area to the southwest. By encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The scheme is 2.9km southwest of the Kent Downs National Landscape, and therefore it is unlikely to significantly affect its setting or special qualities. The impacts of the scheme on townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact	?

SEA Topic	Commentary	
	townscape character in this part of Ditton by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally and the fabric and setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is in the vicinity of several habitats that have been identified as BAP priority habitats. It also runs relatively close to Ditton Quarry LNR. The sensitivities of these areas should be reflected by the layout and design of the scheme.

Potential impacts on the fabric and setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.33 Tunbridge Wells – Halls Hole Road / A264 Pembury Road / Blackhurst Lane junction improvement (roundabout scheme)

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is located 970m southeast of the Hilbert Woods LNR and 1.3km southwest of Pembury Cutting and Pit SSSI.	↓

SEA Topic	Commentary	
	The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is adjacent to deciduous woodland to the northwest and 50m from another area of deciduous woodland to the southeast. In addition, the scheme is 230m southeast of a large area of deciduous/ ancient woodland. In this respect, the scheme has the potential to lead to the loss of/ disturbance of these habitats.	
Air quality	The scheme is 2.4km northeast of the A26 AQMA in Royal Tunbridge Wells, following the route of Pembury Road, Calverley Road, Crescent Road and Church Road, which was declared due to high levels of NO_2. Whilst the scheme has potential to improve air quality in and around this AQMA by improving congestion at this junction and along Pembury Road, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the roundabout upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1, and surface water flood risk at this location is very low.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme intersects with the Tunbridge Wells Conservation Area and is 90m northwest of a grade II listed building in Sandown Park. In addition, the scheme is 580m northeast of	↓

SEA Topic	Commentary	
	grade II registered historic park and garden 'Dunorlan Park', which contains five grade II listed buildings at the end of the park and garden nearest the scheme. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their fabric and setting. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme is adjacent to the High Weald National Landscape to the east, and therefore it has the potential to significantly affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact landscape character in this location, particularly to the east, as well as the townscape character of this part of Royal Tunbridge Wells, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction improvement schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally, landscape character and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. It is also located relatively close to Hilbert Woods LNR and Pembury Cutting and Pit SSSI. The sensitivities of these sites should be fully recognised by scheme layout and design.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening, including with regards to the Tunbridge Wells Conservation Area and the special qualities of the High Weald National Landscape.

Table B.2.34 Tunbridge Wells – Signalisation of junctions at Sandrock Road and Sandhurst Road on A264

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is located 870m southeast of Hilbert Woods LNR. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is located 140-390m from five areas of deciduous woodland (one of which is also ancient woodland) to the north, east and south. As the scheme only involves signalisation of junctions, it is unlikely to disturb these habitats.	-
Air quality	The scheme is 1.5km northeast of the A26 AQMA in Royal Tunbridge Wells, following the route of Pembury Road, Calverley Road, Crescent Road and Church Road, which was declared due to high levels of NO_2. As the scheme only involves signalisation of junctions, it is unlikely to have a significantly effect on air quality.	-
Population and human health	The scheme has the potential to support accessibility by a range of modes of transport by improving signalisation. The scheme is unlikely to affect air quality, noise pollution and the quality of the public realm over a wider area as it only involves signalisation of junctions.	↑
Climatic factors	In terms of climate change mitigation, the scheme is unlikely to increase overall traffic flows on the road network as it only involves signalisation. In terms of climate change adaptation, the scheme and wider area is within Flood Zone 1, and surface water flood risk at this location is very low.	-
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is adjacent to the grade II listed registered park and garden ‘Dunorlan Park’, which contains five grade II listed	-

SEA Topic	Commentary	
	buildings. In addition, there are two grade II listed buildings 250-330m west of the scheme, set back from Pembury Road. However, given the scheme only involves signalisation of junctions, it is unlikely to significantly affect the fabric or setting of these heritage assets.	
Landscape, noise and tranquillity	The scheme is 320m west of the High Weald National Landscape to the east, and therefore it has limited potential to affect its setting or special qualities. Given the scheme only involves signalisation of junctions, the significance of effects are likely to be minimal. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is unlikely to have any significant impacts.	-
Material assets	The scheme is unlikely to use many materials as it involves the signalisation of junctions.	↑

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme is unlikely to lead to significant effects as it is limited to junction signalisation. However, the scheme has the potential to support accessibility by a range of modes of transport by improving signalisation.

Mitigation measures and enhancement opportunities

No mitigation measures or enhancement opportunities are identified.

Table B.2.35 M2 Junction 1 – capacity upgrade

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 30m south of Shome and Ashenbank Woods SSSI, 140m south of Great Crabbles Wood SSSI, and 495m north of Cobham Woods SSSI. It is also 910m west of the Rede Common LNR. The scheme intersects with an IRZ for transport proposals including road, rail and by water. In this respect, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme intersects with deciduous / ancient woodland and wood-pasture and parkland. It is also adjacent to traditional orchard. In this respect, the scheme has the potential to lead to the loss of/ disturbance of these habitats.	↓

SEA Topic	Commentary	
Air quality	The scheme intersects with the Gravesham A2 AQMA. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion at this location, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is within Flood Zone 1. Similarly, the scheme is primarily at very low risk of surface water flooding; however, there are isolated areas of the junction at low-high risk of surface water flooding.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is 50m south of a grade II listed building on Old Watling Street, 375m north of a grade II listed building near Oak Tree Cottage, and 705m southeast of two grade II listed buildings in Shorne Ridgeway. It also partially intersects with Grade II* registered park and garden 'Cobham Hall'. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their fabric and setting. The scheme is 675m southeast of Chestnut Green, Shorne Conservation Area. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	?

SEA Topic	Commentary	
Landscape, noise and tranquillity	The scheme partially intersects with the Kent Downs National Landscape, and therefore it has potential to affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact landscape character to the southwest, as well as the townscape character of this part of Strood, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally (including nationally designated sites), landscape character and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. It also runs relatively close to Shome and Ashenbank Woods SSSI. The specific sensitivities of these locations should be fully recognised in scheme design and layout.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.36 M25-M26-A21 junction – east facing slips

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is 1.2km north of the Dryhill SSSI and LNR and 1.8km west of the Sevenoaks Gravel Pits SSSI. The scheme partially intersects with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, the scheme intersects with / is adjacent to areas of deciduous woodland and is adjacent to several areas of deciduous woodland. It is also 200m southeast of a large area of wood pasture and parkland.	↓
Air quality	The scheme is 775m southwest of 'AQMA No. 13 (A25)'. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion at this location, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. Part of the scheme fall within Flood Zone 3. In addition, part of the scheme has a low-high risk of surface water flooding. In this respect, flood mitigation measures will likely be needed.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is 175m west of a grade II listed buildings at Morants Court, off Morants Court Road. It is also 180m southeast of grade II* registered park and garden 'Chevening'. In addition, it is 660m southeast of a grade II listed building in	↓

SEA Topic	Commentary	
	this registered park and garden, as well as 745-970m from a cluster of listed buildings on Chevening Road. This includes grade I listed building 'Church of St Botolph'. The scheme is also 530m northwest of the edge of a large cluster of listed buildings in Chipstead and 995m northeast of the edge of a large cluster of buildings in Sundridge. Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their fabric and setting. The scheme is 225m north of the Chipstead Conservation Area and 600m southeast of the Chevening Conservation Area. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	
Landscape, noise and tranquillity	The scheme falls within the Kent Downs National Landscape and therefore it has potential to affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact landscape character to the southeast, as well as the townscape character of Chipstead and Dunton Green, by increasing traffic flows in this location. The scheme has potential to increase noise pollution in the vicinity of this location.	↓
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around this junction.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally (including nationally designated sites), landscape character and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air

quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

The junction is near several habitats that have been identified as BAP priority habitats. The specific sensitivities of these locations should be fully recognised in scheme design and layout.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Table B.2.37 A2 Gravesend – upgrades to local junctions

Upgrades to the Hall Road, Wrotham Road and Henshurst Road junctions.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The Hall Road junction is 775m southeast of the Swanscombe Peninsula SSSI. The Henshurt Road junction is 1.1km west of the Shorne and Ashenbank Woods SSSI. The Hall Road and Henshurst Road junctions intersect with an IRZ for transport proposals including road, rail and by water. Therefore, Natural England will need to be consulted on the likely risks from the scheme. In terms of BAP priority habitats, Wrotham Road and Henshurst Road junctions are adjacent to areas of deciduous woodland. The Henshurst Road junction is also adjacent to an area of traditional orchard and 10mm south of a relatively large area of deciduous / ancient woodland.	↓
Air quality	All three junctions intersect with the Gravesham A2 AQMA. Whilst the scheme has potential to improve air quality in and around the AQMA by improving congestion at this location, through contributing to an overall increase in traffic flows on the road network, the scheme also has the potential to worsen air quality over a wider area.	?
Population and human health	The scheme has the potential to relieve traffic and congestion in and around the junction and support accessibility by car. However, the scheme also has the potential to increase car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents. In addition, the scheme does not support the use of healthy modes of travel, such as walking and cycling. Nevertheless, it is recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?

SEA Topic	Commentary	
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. A stimulation of induced demand through the road scheme has the potential to lead to an increase in CO_2 emissions associated with motor vehicles. All three junctions fall within Flood Zone 1. However, part of each of the three junctions has a low-high risk of surface water flooding. In this respect, flood mitigation measures will likely be needed.	↓
Soil and water quality	The scheme is located in urban/ industrial land, and therefore will not result in the loss of productive agricultural land. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The Hall Road junction is 170m north of scheduled monument 'Roman enclosure SE of Vagniacae' and 170m southeast of scheduled monument 'Springhead Roman site'. It is also 575m northwest of a cluster of three grade II listed buildings in Northfleet Green and 825m north of a cluster of four grade II listed buildings at Scadbury Manor. The Wrotham Road junction is 775m west of a cluster of four grade II listed buildings along Hever Court Road; 800m east of a cluster of three grade II listed buildings in Northfleet Green; and 1km northwest of a grade II* listed building at Ifield Court. The Henshurst Road junction is 210m southeast of a cluster of four grade II listed buildings along Hever Court Road and 460m northeast of a grade II listed building off Church Road (St Margaret's Church). Given the proximity of the scheme to these heritage assets, there is potential for the scheme to adversely affect their fabric and setting. The Henshurst Road junction is also 990m southwest of the Thong, Shorne Conservation Area; however, this is screened by Clayland Wood. In addition, by encouraging car use, and potentially increasing traffic flows over a wider area, the scheme has the potential to impact on the fabric and setting of the historic environment.	↓
Landscape, noise and tranquillity	The Henshurst Road junction is 1.2km northwest of the Kent Downs National Landscape and therefore it has potential to affect its setting or special qualities. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. Nevertheless, the scheme is likely to impact landscape character to the south, as well as the townscape character of the southern edge of Gracesend, by increasing traffic flows in this location.	?

SEA Topic	Commentary	
	The scheme has potential to increase noise pollution in the vicinity of this location.	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. Nevertheless, it is recognised that junction upgrade schemes generally require a lot of materials in construction.	?

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

Summary

The scheme has the potential to relieve traffic and congestion in and around these three junctions.

However, the proposed junction upgrades have the potential to impact on key biodiversity habitats present locally (including nationally designated sites), landscape character and the setting of the historic environment.

Whilst the proposed junction upgrades have the potential to support accessibility by car and enhance bus network reliability, the scheme also has the potential to encourage car usage by reducing journey times by car. An increase in car use through a stimulation of induced demand has the potential to adversely affect air quality, noise pollution and the quality of the public realm over a wider area, with the potential to lead to adverse impacts on the quality of life of residents.

The scheme will also have adverse effects with regards to climate change mitigation.

Mitigation measures and enhancement opportunities

Two of the three junctions are near several habitats that have been identified as BAP priority habitats. In addition, the Hall Road junction is in proximity to the Swanscombe Peninsula SSSI. The specific sensitivities of these locations should be fully recognised in scheme design and layout.

Potential impacts on the setting of the historic environment and landscape/ townscape character should be minimised through appropriate design and layout and screening.

Appendix C Rail, bus and multi-modal scheme assessment tables

C.1 Rail network proposals

R1 – Freight gauge enhancement for international traffic

This proposal focuses on reducing road-based freight by shifting to rail. The Channel Tunnel has half its capacity reserved for freight under international agreements. However, paths across the National Rail network often underutilised due to the lack of a continuous rail freight route on the UK side. This is because freight is typically containerised and does not fit through tunnels in Kent. To fully enable containerised traffic, gauge known as W12a is required. To fit through tunnels in Kent, this primarily requires notching of tunnel linings.

Network Rail has already undertaken a Strategic Outline Business Case (SOBC) and is considering, with the Department for Transport (DfT), an initial upgrade to enable gauge 9a – this allows wagons to sit lower on the track bed to provide height for container loads. However, whilst lower cost than gauge W12a, it is likely to only provide a marginal increase in rail freight relative to network and tunnel capacity due to lower availability, and the higher whole life cost of the specialised wagons.

KCC needs to provide the intelligence it has on freight flow and impacts to ensure the Network Rail and DfT business case development fully reflects the benefits of investment. This would be best done by composing a KCC case for publication and lobbying purposes. In the first instance, gauge 9a investment should be lobbied for, given its relatively low cost. KCC has engaged with Getlink and could expect to receive further support from them in preparing that case. The initial SOBC had benefit cost ratios (BCRs) below 1 – KCC aim to increase this.

Table C.1.1 R1 – Freight gauge enhancement for international traffic

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme is unlikely to lead to any direct effects on biodiversity as it will not involve any land take. Nevertheless, the scheme will enable a greater proportion of freight movement in Kent to take place via rail as opposed to road, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads. However, it is also recognised that there could be short-term minor adverse effects on biodiversity during the construction phase of this scheme, as tunnels will have to be adapted to cater for containers and this will inevitably lead to some noise disturbance to wildlife.	-
Air quality	By reducing road-based freight by shifting to rail, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	By reducing road-based freight by shifting to rail, and consequently improving air quality and road safety, the scheme is likely to lead to improvements to human health.	↑

SEA topic	Discussion of potential effects and relative merits	
Climatic factors	By reducing road-based freight by shifting to rail, this scheme is likely to lead to a significant reduction in greenhouse gas (GHG) emissions from vehicular movement, supporting climate change mitigation.	↑
Soil and water quality	The scheme will not involve land take and will therefore not result in the loss of any productive agricultural land. No significant impacts on water quality are anticipated as a result of the scheme.	-
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by reducing road-based freight traffic, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes. However, it is recognised that by increasing freight traffic on the rail network, and adapting tunnels to cater for larger containers, heritage assets associated with the rail network may be harmed.	?
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by reducing road-based freight traffic, as traffic and congestion can adversely impact landscape character. However, it is recognised that by increasing freight traffic on the rail network, noise quality in the vicinity of the rail network may be worsened.	↑
Material assets	The scheme is likely to require minimal materials as it will only involve the notching of tunnel linings.	-

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

R2 – Maidstone journey time improvements

The Maidstone mainline is the core route for London-bound journeys from the county town, its suburbs of Barming and Bearsted, and for major communities along the line such as West Malling and Kings Hill. The journey time deficit Maidstone faces for London commutes, compared to its neighbours like Medway, was improved by the introduction of high-speed services along the valley line. However, those services were only in weekday peaks, and have been cut to two per peak since the pandemic.

The deficit has further been improved by the re-introduction of services via the City of London, with the London Charing Cross service providing a stop at London Bridge. They are semi-fast through the county, avoiding stops at Kemsing and Barming. This has improved average journey times from Maidstone to comparable mainlines in the county. However, these advantages are not being provided across the week, with no services to Charing Cross on a Sunday. In addition, the introduction of the Charing Cross services has been made starting from Maidstone East. This has reduced services to one per hour between Maidstone and Ashford.

There is also potential for a new station to be delivered at Lenham Heathlands. This may need mitigating through journey time improvements so that passenger times and train resources are not consumed by an extra stop. If improvements are not

needed due to slack in the timetable, then it raises a question of why this time saving is not being used for the benefit of customers now.

KCC are to propose through the LTP5 that:

- Maidstone's county town status is recognised through the return of the third peak high-speed service.
- Investigations and reasoning are provided by Southeastern concerning the case for high-speed services along the Valley line over whole day and weekends.
- Charing Cross services via London Bridge are provided over the whole week.
- The impact of the new station at Lenham Heathlands is determined and mitigations delivered if necessary.

Table C.1.2 R2 – Maidstone journey time improvements

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme is unlikely to lead to any direct effects on biodiversity as it will not involve any land take. Nevertheless, the scheme will likely encourage a modal shift away from the private car, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	-
Air quality	By encouraging a modal shift away from the private car to rail, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	By encouraging a modal shift away from the private car to rail, and consequently improving air quality and road safety, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to rail, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation.	↑
Soil and water quality	The scheme will not involve land take and will therefore not result in the loss of any productive agricultural land. No significant impacts on water quality are anticipated as a result of the scheme.	-
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to rail, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes.	↑
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to rail, as traffic and congestion can adversely impact landscape character.	↑
Material assets	The scheme is unlikely to require any materials as it will only involve journey time improvements on an existing railway line.	-

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

R3 – Gatwick access improvements

Gatwick is Kent's closest major international airport. The airport plans to grow by bringing the emergency northern runway into standard use for flights. It has set itself a commitment to a minimum public transport access mode share of 55%.

Network Rail has assessed rail access from Kent and determined that there is a business case for trialling services, subject to assuring no infrastructure works would be needed. The decision rests with the DfT.

Gatwick are considering supporting coach services from Chatham via Maidstone and Sevenoaks to support access to the airport. Whilst these would be easiest to deliver, they are likely to be less reliable than rail and do not provide the advantage of being widely accessible to all existing rail users on the routes under consideration.

KCC and stakeholders propose to address the Gatwick proposals and further the Network Rail case for trialling rail services by lobbying Government.

Table C.1.3 R3 – Gatwick access improvements

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme is unlikely to lead to any direct effects on biodiversity as it will not involve any land take. Nevertheless, the scheme will likely encourage a modal shift away from the private car, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	-
Air quality	By encouraging a modal shift away from the private car to public transport, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	By encouraging a modal shift away from the private car to public transport, and consequently improving air quality and road safety, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to public transport, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation. However, it is recognised that this scheme will ultimately improve access to the airport, which has the potential to increase the number of flights taken by people in Kent, and indirect adverse effects are anticipated in this respect.	↑
Soil and water quality	The scheme will not involve land take and will therefore not result in the loss of any productive agricultural land. No	-

SEA topic	Discussion of potential effects and relative merits	
	significant impacts on water quality are anticipated as a result of the scheme.	
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to public transport, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes.	↑
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to public transport, as traffic and congestion can adversely impact landscape character.	↑
Material assets	The scheme is unlikely to require any materials as it will only involve public transport access improvements where existing infrastructure is in place.	-

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

R4 – Dover / Folkestone high speed journey time improvements

Introduction of high-speed rail slashed journey times from east Kent to central London. A <1hr commute has become known as the golden hour – and whilst Folkestone Central just makes this threshold, Dover falls outside it. Levelling Up Funding was secured for both towns and KCC previously bid for funding to reduce journey times for high-speed services. The DfT stated it had a good strategic case.

The proposal, promoted by infrastructure owner High Speed 1 Ltd, is to establish a junction near Dollands Moor sidings, just west of Folkestone, to enable high-speed domestic rail services to route on the High Speed 1 rail link to London, rather than the slower domestic line to Ashford. Some services would bypass Ashford, with Ashford still receiving some high-speed stopping services from the coast and from Canterbury. The scheme would be dependent on growing the domestic high-speed service frequencies, and possibly require fleet expansion, so as not to conflict with Otterpool Park proposals for stopping high-speed services.

KCC plan to update the business case and develop maturity of the cost estimates and delivery strategy, to support Government / Great British Railways (GBR) decision making on future high-speed fleet procurement and service planning.

Table C.1.4 R4 – Dover / Folkestone high speed journey time improvements

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme is unlikely to lead to any direct effects on biodiversity as it will not involve any land take. Nevertheless, the scheme will likely encourage a modal shift away from the private car, which is likely to have indirectly minor positive	-

SEA topic	Discussion of potential effects and relative merits	
	effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	
Air quality	By encouraging a modal shift away from the private car to rail, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	By encouraging a modal shift away from the private car to rail, and consequently improving air quality and road safety, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to rail, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation.	↑
Soil and water quality	The scheme will not involve land take and will therefore not result in the loss of any productive agricultural land. No significant impacts on water quality are anticipated as a result of the scheme.	-
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to rail, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes.	↑
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to rail, as traffic and congestion can adversely impact landscape character.	↑
Material assets	The scheme is unlikely to require any materials as it will only involve journey time improvements on an existing railway line.	-

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

R5 – International rail services for Kent

Ashford International Station opened in 1996 and Ebbsfleet International Station in 2007. The latter's opening lead to a reduction in services at Ashford International Station. Eurostar have stated that the stations had declining levels of use, though KCC argue they were poorly marketed and service patterns and routes were sub-optimal, locking them into a cycle of decline.

Public funds of c.£9m were spent on signalling and power at Ashford International Station to ensure the new generation of international trains can stop there. The international stations provide unique benefits to Kent, and the current arrangements of travelling, at great costs, to London for Eurostar services present economic disadvantages. KCC are aware that there are companies developing plans to introduce competition to the international rail link between England and France.

KCC propose to continue its work to establish the strategic and economic case for international rail services stopping in Kent. This will provide the public interest argument for public funds if needed to upgrade the stations to accommodate new border control arrangements. KCC will also ensure the case for Kent can be pitched to potential new operators.

Table C.1.5 R5 – International rail services for Kent

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme is unlikely to lead to any direct effects on biodiversity as it will not involve any land take. Nevertheless, the scheme will likely support the continued use of international rail services, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	-
Air quality	By supporting the continued use of international rail services, this scheme is likely to lead to no changes in air quality in Kent.	-
Population and human health	By supporting the continued use of international rail services, and consequently maintaining current levels of air quality and road safety, the scheme is likely to lead to no change to human health.	-
Climatic factors	By supporting the continued use of international rail services, this scheme is likely to lead to no change in GHG emissions from vehicular movement.	-
Soil and water quality	The scheme will not involve land take and will therefore not result in the loss of any productive agricultural land. No significant impacts on water quality are anticipated as a result of the scheme.	-
Cultural heritage	By supporting the continued use of international rail services, this scheme would likely lead to no significant effects on the historic environment.	-
Landscape, noise and tranquillity	By supporting the continued use of international rail services, this scheme would likely lead to no significant effects on landscape, townscape and villagescape character.	-
Material assets	The scheme is unlikely to require any materials as it will only involve the continuation of existing international rail services.	-

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

R6 – Sturry and Canterbury West improvements

Network Rail plans to undertake a programme of re-signalling, to reduce block size on the route and enable trains to run closer together, which may provide some capacity gains and improve route performance.

Separately, KCC and Canterbury City Council (CCC) consider that Sturry Station platforms should be lengthened, to enable stopping trains to not occupy the level crossing when stopping, which causes traffic delays. Works would be eased in complexity if integrated with the re-signalling programme.

At Canterbury West Station, there is the potential to transform the land around the rail tracks and create a high-quality station quarter, boosting the local area's prosperity and amenities. This aspect is dependent on sidings becoming redundant from the re-signalling projects, enabling land release.

Each of the further works are not within the scope of the re-signalling programme, and so would need their respective cases to be made and to attract funding. Hence, KCC propose to develop an assessment of economic impacts of the Sturry level crossing and station upgrade to support and lobby Network Rail and DfT to consider further investment. KCC will support CCC with the station quarter proposals.

Table C.1.6 R6 – Sturry and Canterbury West improvements

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme involves some land take in proximity to Canterbury West Station. However, as this is brownfield land, redevelopment of this land has the potential to lead to significant positive effects on biodiversity through the delivery of biodiversity net gain (BNG).	↑
Air quality	By reducing traffic delays at the level crossing at Sturry Station, this scheme is likely to lead to improvements in air quality in this location by reducing traffic and congestion.	↑
Population and human health	By creating a high-quality station quarter at Canterbury West Station, and consequently boosting the local area's prosperity and amenities, this scheme has the potential to improve the quality of life of the local community. In addition, by reducing traffic delays at the level crossing at Sturry Station, this scheme is likely to lead to improvements in air quality in this location by reducing traffic and congestion, thereby leading to improvements to human health.	↑
Climatic factors	By reducing traffic delays at the level crossing at Sturry Station, this scheme is not considered likely to lead to any significant changes to GHG emissions from vehicular movement.	-
Soil and water quality	This scheme involves some land take in proximity to Canterbury West Station. However, as this is brownfield land, this scheme will not result in the loss of any productive agricultural land. No significant impacts on water quality are anticipated as a result of the scheme.	-
Cultural heritage	The scheme has the potential to lead to positive effects on the historic environment by creating a high-quality station quarter at Canterbury West Station, which has the potential to improve the setting of heritage assets in proximity to this area. However, it is recognised that this is largely dependent on the design and layout of development. In addition, by reducing traffic delays at the level crossing at Sturry Station, this	↑

SEA topic	Discussion of potential effects and relative merits	
	scheme is likely to lead to improvements to the setting of the historic environment in this location as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes.	
Landscape, noise and tranquillity	The scheme has the potential to lead to positive effects on townscape character by creating a high-quality station quarter at Canterbury West Station, which has the potential to improve townscape character in proximity to this area. However, it is recognised that this is largely dependent on the design and layout of development. In addition, by reducing traffic delays at the level crossing at Sturry Station, this scheme is likely to lead to improvements to townscape character in this location as traffic and congestion can adversely impact townscape character.	↑
Material assets	The scheme will require some materials to deliver the station quarter at Canterbury West Station and the lengthening of platforms at Sturry Station.	↓

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

R7 – Local services

This scheme supports the delivery of Kent-centric local services to support high streets and local attractions. The market has shifted from commuting, with leisure an increasingly important share on the network.

Kent's rail network and services have been focused on tidal movement to London on weekdays and weekends. The rail network and services need to be better designed to link Kent's towns. It is a ready-to-go low carbon mass people mover.

The costs are prohibitive – double figures for return journeys off peak for one adult. There should not need to be a reliance on pre-purchase or eligibility of concessionary / discount fare cards (e.g. network card etc). Bus network fares initiatives have demonstrated the price – patronage link nationally and in Kent.

KCC propose to campaign for a half hourly service on every mainline across the whole week. The fares pricing structure should be made significantly more competitive, following similar efforts made under bus network initiatives undertaken by Government and local transport authorities (i.e. Bus Service Improvement Plans), with devolved / awarded government funding.

Table C.1.7 R7 – Local services

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme is unlikely to lead to any direct effects on biodiversity as it will not involve any land take. Nevertheless, the scheme will likely encourage a modal shift away from the private car, which is likely to have indirectly minor positive	

SEA topic	Discussion of potential effects and relative merits	
	effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	
Air quality	By encouraging a modal shift away from the private car to rail, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	
Population and human health	As this scheme seeks to reduce the price of train tickets, it has the potential to decrease inequality and therefore improve the quality of life of certain members of the local community by enabling a greater number of people to access employment and education opportunities further afield. In addition, by encouraging a modal shift away from the private car to rail, and consequently improving air quality and road safety, the scheme is likely to lead to improvements to human health.	
Climatic factors	By encouraging a modal shift away from the private car to rail, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation.	
Soil and water quality	The scheme will not involve land take and will therefore not result in the loss of any productive agricultural land. No significant impacts on water quality are anticipated as a result of the scheme.	
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to rail, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes.	
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to rail, as traffic and congestion can adversely impact landscape character.	
Material assets	The scheme is unlikely to require any materials as it will only involve more frequent services on existing railway lines.	

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

C.2 Bus and multi-modal network proposal

PT1 – Bus Service Improvement Plan

The KCC Bus Service Improvement Plan (BSIP) is now in delivery, supported by £35.1m of grant funding lasting until 2025/26. Beyond this, KCC will continue to focus efforts on building on the improvements from the initial BSIP funding.

Although a single proposal within the LTP5, the BSIP and strategy to deliver that is the largest and most widespread proposal. The BSIP and the arising Enhanced Bus

Partnerships (EBPs) cover bus priority schemes, fares schemes, travel information, ticketing to supported services and community transport.

The BSIP needs to be further funded - KCC received 15% of the cost of the plan, established in 2021. Stabilising and improving bus networks across the county will need KCC to demonstrate buses are a strategic priority on parts of its road network, to help operators in improving journey times, reliability and reduce the cost-of-service operations. This can enable more services and attract more passenger journeys.

The LTP5 will set out clearly the outcomes desired for Kent's bus network, in recognition of the high uncertainty over industry structure and funding. What follows is a reiteration of the BSIP and EBPs key principles which are the outcomes KCC has established it will work towards:

- Place the customer at the heart of everything KCC do through an established passenger charter, to help KCC work with operators on customer's behalf.
- Put buses at the centre of decision making in respect of new road schemes, planning and developments, and support bus operators and services in KCC's role as the highway authority.
- Improve the quality and accessibility of public transport information and services, including flexible and better value ticketing options.
- Consider and embrace innovative transport solutions such as demand responsive transport (DRT) and mobility as a service (MaaS) models as possible alternatives to the private car, make use of bus rapid transit (BRT) where appropriate, and continue to support the community transport sector in Kent.

Table C.2.1 PT1 – BSIP

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme has the potential to lead to direct effects on biodiversity as it will likely involve some land take. However, this is uncertain at this stage. The scheme will also likely encourage a modal shift away from the private car, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	?
Air quality	By encouraging a modal shift away from the private car to bus, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	As this scheme seeks to reduce the price of bus tickets, it has the potential to decrease inequality and therefore improve the quality of life of certain members of the local community by enabling a greater number of people to access employment and education opportunities further afield. In addition, by encouraging a modal shift away from the private car to bus, and consequently improving air quality and road safety, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to bus, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation.	↑

SEA topic	Discussion of potential effects and relative merits	
Soil and water quality	The scheme will likely involve some land take and therefore has the potential to result in the loss of productive agricultural land. However, this is uncertain at this stage. No significant impacts on water quality are anticipated as a result of the scheme.	?
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to bus, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes. However, it recognised that the scheme's impact on the historic environment will depend on the design and layout of any new bus infrastructure, which is uncertain at this stage.	?
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to bus, as traffic and congestion can adversely impact landscape character. However, it recognised that the scheme's impact on the landscape character will depend on the design and layout of any new bus infrastructure, which is uncertain at this stage.	?
Material assets	The scheme is likely to require some materials as it will likely involve the delivery of new bus infrastructure. However, this is uncertain at this stage.	?

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

PT2 – Thameside Fastrack Network Growth

The Thameside Fastrack Network is nationally recognised as a best-practice case of integrated transport alongside new development, coupled with supporting existing communities. Further growth is planned in the Thameside area, as much work remains to be delivered in Ebbsfleet Garden City, along with wider growth in the Dartford-Gravesend to Medway corridor.

Given Fastrack's success, it is a proven approach to providing further communities an opportunity to rely on efficient and affordable, and zero carbon at tail pipe, public transport. Opportunities exist to plot a future for the network and its growth to widen its benefits without compromising existing network performance.

KCC propose to develop a network extension plan, based on an assessment of corridor options and their relation to local growth proposals. Subject to the network study, KCC will determine preferred route corridor options and progress proposals to make the case for further network investment.

Table C.2.2 PT2 – Thameside Fastrack Network Growth

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme has the potential to lead to direct effects on biodiversity as it will likely involve some land take. However, this is uncertain at this stage. The scheme will also likely encourage a modal shift away from the private car, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	?
Air quality	By encouraging a modal shift away from the private car to bus, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	As this scheme seeks to improve accessibility via public transport, it has the potential to decrease inequality and therefore improve the quality of life of certain members of the local community by enabling a greater number of people to access employment and education opportunities further afield. In addition, by encouraging a modal shift away from the private car to bus, and consequently improving air quality and road safety, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to bus, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation.	↑
Soil and water quality	The scheme will likely involve some land take and therefore has the potential to result in the loss of productive agricultural land. However, this is uncertain at this stage. No significant impacts on water quality are anticipated as a result of the scheme.	?
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to bus, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes. However, it recognised that the scheme's impact on the historic environment will depend on the design and layout of any new bus infrastructure, which is uncertain at this stage.	?
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to bus, as traffic and congestion can adversely impact landscape character. However, it recognised that the scheme's impact on the landscape character will depend on the design and layout of any new bus infrastructure, which is uncertain at this stage.	?
Material assets	The scheme is likely to require some materials as it will likely involve the delivery of new bus infrastructure. However, this is uncertain at this stage.	?

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

PT3 – Dover Fastrack Network Growth

The Dover Fastrack Network has been designed to provide public-transport oriented development within the largest growth area of the district, at Whitfield. The network will provide a connection to the town centre and the national rail network to enable new residents and existing communities to travel locally, across the county and to London without depending on private vehicles. This will be achieved via a bus network with some segregated running, helping to improve reliability and resilience at times of international traffic disruptions at the port.

Opportunities exist to plot a future for the network and its growth to widen its benefits as the Whitfield urban extension grows, and as the Dover District Local Plan considers future housing delivery.

KCC propose to develop a network extension plan, working closely with Dover District Council and developers on the remaining Whitfield urban extension and future local development along the whole route.

Table C.2.3 PT3 – Dover Fastrack Network Growth

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme has the potential to lead to direct effects on biodiversity as it will likely involve some land take. However, this is uncertain at this stage. The scheme will also likely encourage a modal shift away from the private car, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	?
Air quality	By encouraging a modal shift away from the private car to bus, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	As this scheme seeks to improve accessibility via public transport, it has the potential to decrease inequality and therefore improve the quality of life of certain members of the local community by enabling a greater number of people to access employment and education opportunities further afield. In addition, by encouraging a modal shift away from the private car to bus, and consequently improving air quality and road safety, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to bus, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation.	↑
Soil and water quality	The scheme will likely involve some land take and therefore has the potential to result in the loss of productive agricultural	?

SEA topic	Discussion of potential effects and relative merits	
	land. However, this is uncertain at this stage. No significant impacts on water quality are anticipated as a result of the scheme.	
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to bus, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes. However, it recognised that the scheme's impact on the historic environment will depend on the design and layout of any new bus infrastructure, which is uncertain at this stage.	?
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to bus, as traffic and congestion can adversely impact landscape character. However, it recognised that the scheme's impact on the landscape character will depend on the design and layout of any new bus infrastructure, which is uncertain at this stage.	?
Material assets	The scheme is likely to require some materials as it will likely involve the delivery of new bus infrastructure. However, this is uncertain at this stage.	?

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

PT4 – Mobility as a Service

MaaS can be the digital glue that sticks the transport offer all together, in one easy place. A new type of service to plan, book and pay for integrated multimodal journeys in one MaaS account that is not currently possible.

Spearheading the establishment of MaaS is the Fastrack Thameside Network area. Led by KCC as part of Kent's BSIP, the plan is to supplement Fastrack with further local transport choice arising from development in the Ebbsfleet Garden City and investment in the local towns. Choices integrated into the MaaS platform could include a bike / ebike hire scheme, wider local bus services, the national rail network, an electric car club, carsharing, walking and cycle routes, and potential integration with the network in the London area.

In East Kent, options for establishing MaaS could be provided in the Dover area, again using the Fastrack Dover Network as the anchor point. The Otterpool Park Garden Community, where major improvements to transport would be delivered, is another potential expansion area with S106 contributions.

KCC propose to develop and obtain the necessary external funding to deliver a Thameside MaaS platform to evaluate its effectiveness, alongside learning from other MaaS rollouts across the UK. KCC will work to find opportunities in East Kent to apply the MaaS platform and, subject to the outcomes of the initial MaaS Ebbsfleet pilot, seek to establish a county-wide MaaS platform phased by EBP areas

with potential to expand to Medway as part of Kent and Medway's Energy and Low Emissions Strategy (ELES).

Table C.2.4 PT4 – Mobility as a Service

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme has the potential to lead to direct effects on biodiversity as it will likely involve some land take. However, this is uncertain at this stage. The scheme will also likely encourage a modal shift away from the private car, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	?
Air quality	By encouraging a modal shift away from the private car to public transport and active travel, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	As this scheme seeks to improve accessibility via public transport and active travel, it has the potential to decrease inequality and therefore improve the quality of life of certain members of the local community by enabling a greater number of people to access employment and education opportunities further afield. In addition, by encouraging a modal shift away from the private car to public transport and active travel, and consequently improving air quality and road safety and encouraging physical activity, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to public transport and active travel, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation.	↑
Soil and water quality	The scheme will likely involve some land take and therefore has the potential to result in the loss of productive agricultural land. However, this is uncertain at this stage. No significant impacts on water quality are anticipated as a result of the scheme.	?
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to public transport and active travel, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes. However, it recognised that the scheme's impact on the historic environment will depend on the design and layout of any new bus infrastructure, which is uncertain at this stage.	?
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to public transport and active travel, as traffic and congestion can adversely impact landscape character. However, it recognised that the scheme's impact on the landscape character will depend on	?

SEA topic	Discussion of potential effects and relative merits	
	the design and layout of any new bus infrastructure, which is uncertain at this stage.	
Material assets	The scheme is likely to require some materials as it will likely involve the delivery of new bus infrastructure. However, this is uncertain at this stage.	?

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

PT5 – Cycle hire trials

Locations have been identified in Kent, principally by developers, to implement cycle hire schemes. These are Otterpool Park, Ebbsfleet Garden City, Aylesford, and Highsted Park, Sittingbourne).

Since these represent a new approach to cycling provision, the priority is to monitor their effectiveness and learn lessons to ensure that if they are implemented further, it is done so in the most effective way and in more worthwhile locations.

Monitoring and evaluating will also aid with identifying if cycle hire docks need to expand out from developments to provide network of docks into town centres / other key destinations.

KCC propose to support developers and districts with the delivery of cycle hire schemes, to understand user needs and identify any further improvements that could be implemented to improve their attractiveness. Subject to the outcomes of these initial locations, KCC will work with developers and districts to consider the case for further implementation elsewhere in the county.

Table C.2.5 PT5 – Cycle hire trials

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme is unlikely to lead to any direct effects on biodiversity as it will not involve any land take. Nevertheless, the scheme will likely encourage a modal shift away from the private car to bicycle, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	?
Air quality	By encouraging a modal shift away from the private car to bicycle, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	By encouraging a modal shift away from the private car to bicycle, and consequently improving air quality and road safety and encouraging physical activity, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to bicycle, this scheme is likely to lead to a significant reduction in	↑

SEA topic	Discussion of potential effects and relative merits	
	GHG emissions from vehicular movement, supporting climate change mitigation.	
Soil and water quality	The scheme will not involve land take and will therefore not result in the loss of any productive agricultural land. No significant impacts on water quality are anticipated as a result of the scheme.	-
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to bicycle, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes.	↑
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to bicycle, as traffic and congestion can adversely impact landscape character.	↑
Material assets	The scheme is unlikely to require any materials as it will only involve the use of existing roads.	-

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

PT6 – Mobility hubs

Mobility hubs have been applied in Europe for the last decade, often anchored around car club hire spaces. The term hub is used to indicate that more than one type of transport is co-located in a single place, acting as an access point. A hub could be a bus stop co-located with car hire spaces, or car hire spaces co-located with cycle hire spaces, or even all three together. The more types of transport that are provided in an area, the more choice there is to co-locate into a hub.

Given the need for choice, the prospect of mobility hubs in Kent will be dependent on areas seeing an increase in choice through investment in infrastructure and its operations that can be supported long-term. Therefore, the most viable prospects for hubs are in central and inner suburbs of Kent's largest towns, and in those largest new development areas such as Ebbsfleet Garden City and Otterpool Park Garden Town. In relation to this, KCC propose to:

- Work with developers and districts on the planning of mobility hub networks. KCC anticipate hubs to be deliverable first in new developments, and funded by new developments, which provides the opportunity to learn lessons and evaluate their suitability for other parts of Kent.
- Dependent on the success of trials in Kent and more widely, KCC will explore proposals for mobility hubs in existing communities in Kent.
- Mobility hubs will be anchored around electric car hire clubs, bus stops or rail stations for onwards travel.
- Mobility Hubs should seek to achieve ComoUK accreditation.

- Subject to implementation of a MaaS platform, mobility hubs should have standardised branding with the MaaS platform and their use purchasable through the MaaS platform.

Table C.2.6 PT6 – Mobility hubs

SEA topic	Discussion of potential effects and relative merits	
Biodiversity, flora and fauna	This scheme is unlikely to lead to any direct effects on biodiversity as it will not involve any land take. Nevertheless, the scheme will likely encourage a modal shift away from the private car to bicycle, which is likely to have indirectly minor positive effects on biodiversity by reducing the number of vehicular collisions with wildlife on roads.	?
Air quality	By encouraging a modal shift away from the private car to shared car, public transport and active travel, this scheme is likely to lead to significant improvements in air quality by reducing traffic and congestion on roads in Kent.	↑
Population and human health	As this scheme seeks to improve accessibility via shared car, public transport and active travel, it has the potential to decrease inequality and therefore improve the quality of life of certain members of the local community by enabling a greater number of people to access employment and education opportunities further afield. In addition, by encouraging a modal shift away from the private car, and consequently improving air quality and road safety and encouraging physical activity, the scheme is likely to lead to improvements to human health.	↑
Climatic factors	By encouraging a modal shift away from the private car to shared car, public transport and active travel, this scheme is likely to lead to a significant reduction in GHG emissions from vehicular movement, supporting climate change mitigation.	↑
Soil and water quality	The scheme will not involve land take and will therefore not result in the loss of any productive agricultural land. No significant impacts on water quality are anticipated as a result of the scheme.	-
Cultural heritage	The scheme would likely lead to positive effects on the historic environment by encouraging a modal shift away from the private car to shared car, public transport and active travel, as traffic and congestion can adversely impact the setting of heritage assets and historic landscapes.	↑
Landscape, noise and tranquillity	The scheme would likely lead to positive effects on landscape, townscape and villagescape character by encouraging a modal shift away from the private car to shared car, public transport and active travel, as traffic and congestion can adversely impact landscape character.	↑
Material assets	The scheme is unlikely to require any materials as it will only involve the use of existing roads.	-

Key

Likely negative effect	↓	Likely positive effect	↑
Neutral / no effect	-	Uncertain effect	?

AECOM

Strategic Environmental Assessment for the Kent LTP5

Additional scheme assessment post consultation

December 2024

Delivering a better world

Prepared for:

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C.3 C.1 Road capacity schemes

Table C1.38 Dartford - Galley Hill Road

The Galley Hill Road will be reinstated for local traffic, to make travelling to and from the Gravesend area easier. This could include building a parallel road as an alternative to the existing one. It is anticipated that this could help to reduce pressure on the remaining network and allow for bus services and Fastrack routes.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not located in proximity to any internationally designated sites for biodiversity or geodiversity. However, it is adjacent to the Swanscombe Peninsula SSSI (to the south, and also approximately 115m to the north). The scheme is also approximately 722m north-east of the Swanscombe Skull Site SSSI. The scheme intersects with SSSI Impact Risk Zones (IRZs) for the type of development likely to be taken forward, and will require consultation with Natural England. In terms of BAP priority habitats, the scheme is located approximately 140m north of an area of deciduous woodland. However, given that it is adjacent to the railway line between Northfleet and Swanscombe (with the railway line located between the habitat and the scheme), it is unlikely to be significantly impacted by additional transport infrastructure at this location.	↓
Air quality	The scheme is within Dartford AQMA No. 2, as declared by Dartford Borough Council. As this scheme involves reopening Galley Hill Road for local traffic and/or potentially delivering a parallel road, air quality in the immediate vicinity has the potential to be negatively impacted – due to an increase in usage. This has the potential to exacerbate conditions within parts of the AQMA. However, it may benefit air quality in other locations through easing congestion and traffic flows, and the use of alternative modes of transport to the private car may be encouraged by the use of buses on the route. Uncertain effects therefore.	?
Population and human health	The scheme will benefit local residents by allowing for easier access between Swanscombe and Gravesend. This will likely contribute to reduced journey times, allowing for easier access to services, facilities and employment opportunities. The scheme is also anticipated to reduce pressure and congestion on the rest of the transport network in Swanscombe, and could allow for the return of bus services along the road corridor. However, it is noted that reopening the road for local traffic could encourage car use and adversely affect air quality, noise pollution and the quality of the public realm at certain locations close to the scheme. A reduction of congestion elsewhere may though lead to benefits over a wider area.	?
Climatic factors	In terms of climate change mitigation, the scheme has the potential to increase overall traffic flows on the road network,	↓

SEA Topic	Commentary	
	given it reopens Galley Hill Road for local traffic and / or introduces a parallel road. This in turn is likely to lead to an increase in CO_2 emissions associated with motor vehicles. In terms of climate change adaptation, the scheme is largely within Flood Zone 1, though it is noted that there is a large area of land within Flood Zone 2 adjacent to the north which intersects with Galley Hill Road on the overpass section. Surface water flood risk at this location varies between very low and low, with areas at medium risk adjacent to the network. In this respect, flood mitigation measures could be beneficial.	
Soil and water quality	The scheme is located on urban land according to the provisional Agricultural Land Classification (ALC). As such, the scheme is not anticipated to have negative impacts on land and soil resources – even if a new road is constructed to replace the existing Galley Hill Road. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is located approximately 435m north / north-west of the 'Palaeolithic sites near Baker's Hole' scheduled monument. However, the scheme is unlikely to affect it given the location of the scheduled monument adjacent to High Speed 1 and the presence of the rail line between the scheme and the site. The scheme is also adjacent to one Grade II* listed building – Former Church of All Saints. As this scheme involves enabling local traffic to use Galley Hill Road, it is possible the historic environment will be negatively impacted through changes to the setting of this Grade II* listed building. Furthermore, the potential construction of a new parallel road is also likely to impact upon the setting of the church given visual impacts and potential noise impacts. It is also possible that the wider historic environment within Swanscombe could be impacted, as enabling local traffic to use the road could increase traffic flows over on certain locations.	↓
Landscape, noise and tranquillity	The scheme is not in proximity or likely to affect the setting of designated landscapes. The impacts of the scheme on landscape and townscape character will largely depend on the design and layout taken forward. It is possible that the scheme will impact on local landscape and townscape character – due to allowing local traffic to use the Galley Hill Road, or building a parallel road. However, the impact is not anticipated to be significant, given the scheme's location in a built up, urban area with limited landscape value. It is expected that noise pollution could increase through the scheme – though it is noted that there are existing noise issues from current transport infrastructure.	-

SEA Topic	Commentary	
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. However, as it is possible that a new road could be constructed to replace the existing Galley Hill Road (owing to the compromised geology of the existing route), it is recognised that a large quantity of materials will likely be required.	↓

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

7.4.1 Summary

The scheme has the potential to reduce pressures on the surrounding road network by reopening the Galley Hill Road to local traffic or through the construction of a parallel road. This may have localised air quality benefits within the parts of the AQMA.

The scheme has the potential lead to an increase in greenhouse gas emission through encouraging car use. It is also likely to impact upon the historic environment; increased use of the road and the potential construction of a replacement road has the potential to impact upon the adjacent Grade II* listed church through changes to its setting. There would also be a need to consult Natural England on the scheme given proximity to SSSIs.

The scheme is likely to benefit accessibility by making local journeys quicker and easier, especially between Gravesend and Swanscombe. Additionally, the scheme has the potential to support the return of bus services along the road corridor. However, opening the road for local traffic has the potential to encourage an increased use in private vehicles for localised journeys; an increase in vehicle usage could contribute to additional air noise pollution and impact upon the quality of the public realm locally. This would have the potential to lead to adverse impacts on the quality of life of residents at certain locations.

7.4.2 Mitigation measures and enhancement opportunities

Potential impacts on the setting of the historic environment should be minimised through appropriate design and layout and screening. Potential impacts relating to climate change adaptation should also be minimised through the implementation of flood water management schemes. Natural England should be consulted with respect to potential impacts to biodiversity given the overlap with SSSI IRZs.

C.4 C.2 Junction schemes

Table 2.34 Sevenoaks - M25 Junction 3 capacity enhancement

Capacity enhancements to allow the junction to better serve travel from the existing community and local growth sites. This includes interim measures including improved lane making and directions, and smart(er) traffic control signalling. Further enhancements may come forward once the capacity shortfall is established and options have been determined to address constraints.

SEA Topic	Commentary	
Biodiversity, flora and fauna	The scheme is not near any internationally designated sites for biodiversity or geodiversity. However, it is approximately 285m west and approximately 233m south of the Farmingham Wood SSSI. The scheme intersects with an IRZ; however, this is only for aviation proposals, and not road proposals. In terms of BAP priority habitats, the scheme is approximately 420m north-west of an area of good quality semi-improved grassland. It is also approximately 86m east and 285m west of ancient woodland, and within proximity to a number of deciduous woodland areas (some of which are located within the roundabout). In the short term, given the scheme will involve improving lane markings and directions, and implanting smarter traffic control signalling, it is unlikely to directly affect these habitats.	-
Air quality	The scheme is adjacent to AQMA no. 8 (Swanley Town Centre) as declared by Sevenoaks District Council. As this scheme involves improved lane markings and directions, and smarter traffic control signalling, it is unlikely to have a significant effect on air quality. It is noted that this could improve the routing and flow of traffic, and as such could reduce congestion at this location – which would have a positive impact on air quality.	↑
Population and human health	The scheme has the potential to support accessibility by enhancing the junction's capacity, and improving lane markings and traffic control signalling, which will likely help to improve the flow of traffic. This could help to reduce congestion, and as such contribute to enhanced accessibility. Whilst junction capacity enhancements could lead to an increase in car use over a wider area, with the potential to lead to adverse impacts on the quality of life of residents, impacts are unlikely to be significant given the scale of the proposals. It is also recognised that the junction upgrades may benefit the reliability of bus services, supporting accessibility by public transport.	?
Climatic factors	In terms of climate change mitigation, the scheme has potential to increase overall traffic flows on the road network. This in turn is likely to lead to an increase in CO_2 emissions associated with motor vehicles, although given the scale of the proposals, this is unlikely to be significant.	↓

SEA Topic	Commentary	
	In terms of climate change adaptation, the scheme is within Flood Zone 1, though it is noted that there is a large area of land within Flood Zone 2 and Flood Zone 3 to the south / south-east of the scheme. Surface water flood risk at this location varies between very low and high. In this respect, flood mitigation measures could be beneficial.	
Soil and water quality	The junction is located on land classified as Grade 2 and Grade 3 agricultural land. However, it is not anticipated to result in the loss of productive agricultural land given the scheme is focused on enhancing capacity by improving lane markings and traffic control signalling. No significant impacts on water quality are anticipated from the scheme if the required embedded mitigation measures are incorporated within the design and construction stages of the scheme.	-
Cultural heritage	The scheme is located approximately 552m north of the 'Fort Farningham: a London mobilisation station' scheduled monument. The scheme is also within 550m of the Farningham Conservation Area and its associated listed buildings (located to the south-east). The focus of the scheme on improving lane markings and traffic control signalling; as such it is unlikely to significantly affect these heritage assets given the junction's existing impact on local character, the limited physical upgrades and its relative distance from the historic environment assets (the centre of the scheme is approximately 1km from the scheduled monument and over 1.5km from the Farningham Conservation Area).	-
Landscape, noise and tranquillity	The scheme is adjacent to the Kent Downs National Landscape. The impacts of the scheme on landscape and townscape character will depend on the detailed design and layout of the junction upgrades. However, given the current impact of Junction 3 on local landscape character, and the focus of the scheme on on-line improvements, impacts are unlikely to be significant.	-
Material assets	The potential effects of the scheme on material assets will be largely dependent on the sustainable use of materials in the construction and operation phases of the scheme. It is though anticipated that the focus of the scheme on improving lane markings and traffic control signalling will require minimal material use.	-

Key

Likely adverse effect	↓	Likely positive effect	↑
No effect	-	Uncertain effect	?

7.4.3 Summary

7.4.4 The proposed upgrades at Junction 3 have the potential to support accessibility by car, enhance bus network reliability, and support air quality improvements in and around the junction by potentially reducing congestion

7.4.5 Whilst there are significant environmental constraints nearby, including the Kent Downs National Landscape, an SSSI and historic environment assets, potential impacts will be limited by the scope and scale of the proposed on-line improvements (which are focused on improving lane markings and traffic control signalling). In addition, the junction currently has a significant impact on the landscape character and historic environment of the area.

7.4.6 Whilst the scheme could also have adverse effects with regards to climate change mitigation, these will be limited by the scope and scale of the proposals.

7.4.7 Mitigation measures and enhancement opportunities

Potential impacts relating to climate change adaptation should be minimised through the implementation of flood water management schemes.