# A47 Wansford to Sutton Dualling

## Scheme Number: TR010039

# Volume 7
# 7.1 Case for the Scheme

APFP Regulation 5(2)(q)

Planning Act 2008

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**The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

# A47 Wansford to Sutton Development Consent Order 202[x]

## 7.1 Case for the Scheme

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# Acronyms and Abbreviations

| Acronyms and Abbreviations | Meaning |
|---|---|
| µg/m$^3$ | Micrograms of gaseous pollutant per cubic meter of ambient air |
| AM | Ante meridiem (before midday) |
| AQMA | Air Quality Monitoring Area |
| AQO | Air Quality Objectives |
| AST | Appraisal Summary Table |
| BCR | Benefit to Cost Ratio |
| CCTV | Closed circuit television |
| COBA | Cost and Benefit Analysis |
| COBA-LT | Cost and Benefit to Accidents – Light Touch |
| CWS | County/Local Wildlife Sites |
| DCO | Development Consent Order |
| DfT | Department for Transport |
| DM | Do-Minimum |
| DMRB | Design Manual for Roads and Bridges |
| DS | Do-Something |
| EAST | Early Assessment and Sifting Tool |
| EIA | Environmental Impact Assessment |
| EMP | Environmental Management Plan |
| ES | Environmental Statement |
| FP3 | Footpath 3 |
| GG 142 | GG 142 - Walking, cycling and horse-riding assessment and review |
| GVA | Gross Value Added |
| ha | Hectares |
| HGVs | Heavy goods vehicles |
| ID | Identification |
| IDP | Integrated Development Programme |
| IMD | Index of Multiple Deprivation |
| IP | IP hour is 13:00 to 14:00 |
| JTR | Journey Time Reliability |
| km | Kilometres |
| KPI | Key Performance Indication |
| KSIs | killed or seriously injured |
| LEPs | Local Enterprise Partnerships |
| LGVs | light goods vehicles |
| LTTS | Long Term Trasport Strategy |
| m | Metres |
| MPs | Members of parliament |
| NCA | National Character Area |
| NERC | Natural Environment Research Council |

| Acronyms and Abbreviations | Meaning |
|---|---|
| NIDP | National Infrastructure Delivery Plan |
| NNR | National Nature Reserve |
| $NO_2$ | Nitrogen dioxide |
| NPPF | National Planning Policy Framework |
| NPS | National Policy Statement |
| NPS NN | National Networks National Policy Statement |
| NPV | Net Present Value |
| OAR | Options Assessment Report |
| OBR | Office of Budget Responsibility |
| OTMP | Outline Traffic Management Plan |
| PA 2008 | Planning Act 2008 |
| PCU | Passenger car units |
| PM | Post meridiem (after midday) |
| $PM_{10}$ | Particulate matter |
| PRoW | Public Rights of Way |
| PTM | Peterborough Transport Model |
| PV | Present Value |
| PV | present values |
| PVB | **Present Value Benefit** |
| RIS 1 | Road Investment Strategy |
| RIS2 | Road Investment Strategy 2 |
| RP1 | Roads Period 1 |
| RP2 | Roads Period 2 |
| RP2 | Second Road Period |
| SAC | Special Area of Conservation |
| SAR | Scheme Assessment Report (TR010039/APP/7.9) |
| SATURN | Simulation and Assignment of Traffic in Urban Road Network |
| SERTM | South East Regional Transport Model |
| SOBC | Strategic Outline Business Cases |
| SoS | Secretary of State for Transport |
| SPA | Special Protection Area |
| SPD | Supplementary Planning Document |
| SRN | Strategic Road Network |
| SSSI | Site of Special Scientific Interest |
| TAG | Transport Appraisal Guidance |
| TAG | Transport Appraisal Guidance |
| tCO2e | Tonnes of carbon dioxide equivalent |
| TUBA | Transport User Benefit Appraisal |
| V/C | Volume over capacity ratios |
| VDM | Variable demand model |

| Acronyms and Abbreviations | Meaning |
|---|---|
| VfM | Value for Money |
| VISSIM | VISSIM is a micro-simulation modelling software developed by the PTV Group, Germany: https://www.ptvgroup.com/en/solutions/products/ptv-vissim/ |
| VOC | Vehicle operating cost |
| WCH | Walking and Cycling, Horse Riding |
| WEI | Wider Economic Impacts |
| WTM | Wansford Traffic Model |
| ZOI | Zone of Influence |

# Executive Summary

This Case for the Scheme relates to an application for a Development Consent Order (DCO) for a Nationally Significant Infrastructure Project. The application is being made by Highways England (the Applicant) to the Secretary of State for Transport (the SoS) under Section 37 of the Planning Act 2008 (PA 2008). If made, the DCO would grant consent for the A47 Wansford to Sutton Scheme (the Scheme).

The Scheme is an Environmental Impact Assessment (EIA) development: therefore, an Environmental Statement (ES) is submitted with the DCO application (**TR010039/APP/6.1**). This assesses the potential impacts of the Scheme and proposes mitigation.

## Scheme Development

In 2014 a Corridor Feasibility Study on the A47/A12 identified 22 problem stretches of road. This Study informed the Government's Road Investment Strategy 2025 to 2020 (RIS1) and an initial case was made to carry out a number of schemes including the dualling of the A47 Wansford to Sutton.

Later studies identified the following problems:

- the A47 is ranked 2nd nationally for fatalities on A roads and the Wansford to Sutton stretch has recorded over 41 collisions of varying severity between October 2011 and September 2016
- it is difficult to maintain and manage due to congestion and long diversion routes, especially at peak times and bank holidays
- the corridor is a significant constraint to growth. A significant number of homes and jobs are expected over the next 15 years, which will result in increased traffic levels, there are constraints to development due to the anticipated limitations on the capacity of the highway network
- routes and junctions are over-capacity, or will soon be, resulting in congestion. This impacts on route reliability and journey time delays, with speeds much lower than the daily average at peak times. This can have knock-on effects, particularly in terms of safety terms, as traffic then uses the adjacent road network.

For the A47 between Wansford and Sutton nine initial options for identified and were assessed for their engineering, environmental, transportation and economic suitability.

Three options were presented for non-statutory public consultation in early 2017 and, following amendment as a result of issues raised in the consultation, Option 2 – part on-line, part off-line to the north dualling of the carriageway, plus free flow slip road from the A1 southbound, was adopted as the preferred route. This option solves the main traffic and

safety problems along the route, would have significant advantages in terms of environmental impact when compared to Option 3, and would have less impact during construction when compared to Option 1.

## Statutory Consultation

Statutory consultation on the preferred route was held in Autumn 2018 and 72% of the responses agreed with the dualling proposals. Following the feedback it was noted that many stakeholders would have preferred the route to be aligned north of the existing A47. A route entirely north of the existing A47 was determined not to be feasible due to the environmental constraints. However, an alternative northern alignment was developed in 2020. This was appraised and taken forward for further detailed design.

Further targeted statutory consultations and engagement were held in 2020 and 2021 and has resulted in further refinements. Consultation feedback has informed the Scheme as submitted in the DCO application. Thereafter, the Applicant continued to update and engage with stakeholders and discuss technical elements of plans.

## The Scheme

The Scheme comprises:

- approximately 2.6km of new dual carriageway constructed largely offline of the existing A47, including the construction of two new underpasses
- a new free-flow link road connecting the existing A1 southbound carriageway to the new A47 eastbound carriageway
- a new link road from the Wansford eastern roundabout to provide access to Sacrewell Farm, the petrol filling station and the Anglian Water pumping station
- closure of the existing access to Sacrewell Farm with a new underpass connecting to the farm from the link road provided
- a new slip road from the new A47 westbound carriageway also providing access to the petrol filling station
- a link road from the new A47 Sutton Heath roundabout, linking into Sutton Heath Road and Langley Bush Road
- new junction arrangements for access to Sutton Heath Road and Langley Bush Road
- closure of the existing accesses to the A47 from Sutton Heath Road, Sutton Drift and Upton Road
- new passing places and limited widening along Upton Drift (also referenced as Main Road)
- new walking and cycling routes, including a new underpass at the disused railway

- new safer access to the properties on the A1, north of Windgate Way
- installation of boundary fencing, safety barriers and signage
- new drainage systems including:
    - two new outfalls to the River Nene
    - a new outfall to Wittering Brook
    - extension of the A1 culvert at the Mill Stream
    - realignment and extension of the A47 Wansford Sluice
    - drainage ditch interceptors
    - new attenuation basins, with pollution control devices, to control discharges to local watercourses
- River Nene compensatory flood storage area
- works to alter or divert utilities infrastructure such as electricity lines, water pipelines and telecommunications lines
- temporary compounds, material storage areas and vehicle parking required during construction
- environmental mitigation measures.

A full description of the Scheme is provided in Chapter 2, The Proposed Scheme, of the ES (**TR010039/APP/6.1**).

## Need for the Scheme

The A47 is an important route for both commuter and longer distance east/west traffic. It forms part of the Strategic Road Network (SRN) between Yarmouth on the east coast and the A1, connecting Norwich and Peterborough and the towns and villages between. The rapid economic growth along this corridor is expected to continue with continuing implications for traffic growth.

The objectives of the Scheme are:

- **Supporting economic growth**
  The Proposed Scheme will improve journey times and journey time reliability. This will help contribute to sustainable economic growth by providing benefits such as effectively bringing businesses closer together and encouraging more people to join the labour market as a result of reduced commuting costs.
- **Making a safer network**
  Improving road safety for all road users by designing to modern highway standards appropriate for a major A road.
- **Providing a more free-flowing network**

Increasing the resilience of the A1 / A47 junction to cope with incidents such as collisions, breakdowns, maintenance and extreme weather. The improved A47 section from Wansford to Sutton will be more reliable, reducing journey times and providing capacity for future traffic growth.

- **Creating an accessible and integrated network**
  Ensuring the proposals take into account the local communities access to the road network, and provide a safer route between the communities for walking, cycling, horse-riding and other road users.

## Transport Case for the Scheme

The Scheme is included within the Department for Transport's Road Investment Strategy (RIS2) which sets out a list of schemes to be developed by Highways England (HE) in the period 2020-2025.

The Scheme accords with the objectives of National Planning Policy as set out in the National Networks National Policy Statement (NPS NN) and the National Planning Policy Framework (NPPF).

Cambridge and Peterborough Combined Authorities transport policies support the implementation of enhancements to the A47 between Wansford and Sutton to accommodate future planned growth, tackle congestion and improve road safety.

The modelling analysis shows that forecasted local and regional traffic growth will cause the A47 single carriageway section to be over capacity. This will result a significant increase in congestion, leading to delays, increased journey times and accidents.

The Scheme will provide the capacity improvements to allow for the forecasted traffic growth. In traffic and transport terms, the Scheme achieves the following:

- additional road capacity and related reduction in congestion
- improved reliability and network resilience which will encourage economic growth in the local area as well as across the A47 corridor between the A1/A47 junction, Peterborough and beyond
- improvement in safety operational issues and reduction in the predicted accident rates along the A47 corridor and surrounding network
- provision of new cycling, walking and horse-riding infrastructure including safe, convenient, accessible and attractive routes along and across the A47; detrunking of a section of the existing A47; provision of grade-separated infrastructure at Sacrewell Farm and at the disused railway line improving the resilience of the network and providing additional access for short-distance local movements.

## Economic Case Overview

The economic assessment presents the expected benefits and disbenefits associated with the Scheme. It sets out overall value for money by comparing the benefits to users against the Scheme's costs.

The Scheme represents High Value for Money (VfM), generating a Present Value benefit of £120.19 million with the total Scheme costs at £31.42 million (PV).

The Scheme is also forecast to generate wider economic impacts and journey time reliability benefits. The value for the total wider economic impacts is approximately £19.93 million, while for journey time reliability, it is £0.75 million.

## Conformity with Planning Policy and Transport Plans

### *National Policy*

The Scheme complies with national planning policy. The Government has highlighted the express need for further growth and improvements to the national networks within the NPS NN. It meets with the environmental and sustainable objectives within both the NPS NN and NPPF, with mitigation measures to reduce any unavoidable impacts on the surrounding environment.

National policy recognises that in delivering sustainable development local impacts are sometimes unavoidable. Overall, the benefits of the Scheme are considered to outweigh any unavoidable adverse effects.

The Department for Transport's (DfT) RIS2 includes the Scheme as a required improvement to the network which will improve safety, journey times and network resilience. The Infrastructure Act 2015 places a duty on the SoS to comply with the provisions of the RIS.

### *Sub-Regional Plans*

There is a strong drive in the Cambridgeshire and Peterborough Region for sustained economic growth to build upon the area's population growth and strong innovation and business base. Housebuilding has lagged behind economic development and there is accordingly a significant drive in the region to develop significant numbers of units to meet demand which will result in higher levels of commuting.

The development of the trunk road network is seen as vital to economic delivery particularly along the east-west growth corridor of the Region. It is necessary to ensure the ongoing devolution of power to the combined regional authority. At the same time, the Local Transport Plan also emphasises the interrelationship between the region's transport objectives and the delivery of wider goals relating to the economy, society and environment. The A47 Alliance, which brings together the Chamber of Commerce, Local Authorities,

Local Enterprise Partnerships (LEPs), members of parliament (MPs) and other stakeholders, also support dualling of the A47 in its entirety.

### *Local Plans*

The Peterborough Local Plan 2019 has safeguarded land at the junction of the A47/A1 for infrastructure works. It recognises the economic and population growth and need to proactively plan for this through land allocations. The Peterborough Long Term Transport Strategy (LTTS) 2011-2026 and The Cambridgeshire and Peterborough Local Transport Plan 2020 list the Scheme specifically as a network improvement.

The Scheme accords with the development control policies of the Local Plan and related Supplementary Planning Documents by demonstrating through the chapters of the ES **(TR010039/APP/6.1)** that the majority of unavoidable impacts on the natural and built environment can be mitigated. The public benefits of the Scheme outweigh any outstanding impacts that may remain.

## Conclusions

This Case for the Scheme demonstrates strong support for the Scheme grounded in national, regional and local planning and transport policy.

The NPS NN and the RIS promote the delivery of national networks that meet the country's long-term need for safe, expeditious and resilient networks to better support social and economic activity and provide a transport network that can stimulate and underpin ongoing economic growth.

The A47 between Wansford and Sutton is currently operating at over capacity resulting in congestion and leading to long, unreliable journey times. Population and economic growth in this part of the region will exacerbate this. Safety is also compromised and a high accident rate has been an unfortunate effect.

The DfT's RIS2 sets out a commitment for the *"dualling of the A47 between the A1 and the dual carriageway section west of Peterborough"* to resolve these issues which will also beneficially unlock economic growth and development, considered essential at a regional level, and strongly promoted by the A47 Alliance.

The preferred route design has been identified as the best option to meet the defined need and Scheme objectives. It will improve safety, resilience and journey time reliability and is consistent with national and local planning objectives for transport, economy and the environment.

Through the increased capacity and improved journey time reliability, the Scheme will also assist in making the region more attractive for businesses and will provide the required infrastructure for future development including housing and employment.

The Scheme demonstrates compliance with the NPS NN, including the Government's strategic vision for the development of the national road network, wider policies for economic performance, environment, safety, technology, sustainable transport and accessibility, as well as journey reliability and the experience of road users. Where unavoidable impacts are generated by the construction or operation of the Scheme it is demonstrated that the substantial and long-lasting transportation, economic and community benefits to the public, will outweigh any post mitigation local impacts.

# 1. Introduction

## 1.1. Purpose of this Document

1.1.1. This Case for the Scheme relates to an application for a Development Consent Order (DCO) made by Highways England Company Limited (the Applicant) to the Secretary of State for Transport (the SoS) via the Planning Inspectorate under section 37 of the Planning Act 2008 (PA 2008). If made, the DCO would grant consent for the A47 Wansford to Sutton Scheme (the Scheme).

1.1.2. Under Section 104(2) of the PA 2008 the SoS must have regard to (among other matters) any 'relevant national policy statement' when deciding an application for a DCO. The relevant national policy statement (NPS) for the Scheme is the National Networks National Policy Statement for (NPS NN) which sets out the need, and Government's policies, for delivering the development of Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks in England.

1.1.3. The NPS NN has particular weight in deciding this application for a DCO as, under Section 104(3) of the PA 2008, the SoS is required to decide the application in accordance with the relevant national policy statement, subject to the exceptions set out in section 104 (4) to (8). The Scheme's compliance with the NPS NN is assessed in the NPS NN Accordance Tables (**TR010039/APP/7.2**).

1.1.4. This document is therefore intended to supplement the assessment of the Scheme's compliance with the NPS NN and also identify 'any other matters' that are considered 'important and relevant' to the determination of the application in accordance with Section 104(2) of the PA 2008.

## 1.2. The Applicant

1.2.1. The Applicant is Highways England; the strategic highway company responsible for operating, maintaining and improving the Strategic Road Network ('SRN') in England. Highways England became a Government owned company in April 2015, succeeding to the functions of the Highways Agency.

1.2.2. The SRN is made up of the motorway and major A roads network. The A47 is part of the SRN.

## 1.3. Requirement for a Development Consent Order

1.3.1. The Scheme is a nationally significant infrastructure project (NSIP) within sections 14(1)(h) and 22(1)(b) of the PA 2008. Under section 22, an NSIP must fall within one of the three categories specified, which are expressly stated to be alternatives.

1.3.2. The Scheme satisfies section 22(3) in that:

- the highway is wholly in England
- the Applicant as a strategic highways company will be the highway authority for the highway
- the area of land on which part of the highway to be altered and any adjoining land expected to be used in connection with its alteration is greater than the relevant limit set out in subsection (4), which in this case is 710, 817.13m2
- speed limits on the Scheme will be 50mph or greater.

1.3.3. To comply with the PA 2008, Highways England is required to secure a DCO to construct and operate the Scheme.

1.3.4. An application for a DCO has been submitted to the Planning Inspectorate, who will appoint an Examining Authority or Panel (ExA) to examine it and make a recommendation to the SoS on whether development consent should be granted. The SoS will make the final decision on whether development consent should be granted.

## 1.4. Requirement for EIA

1.4.1. The Scheme is an Environmental Impact Assessment (EIA) development, as defined by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

1.4.2. An EIA Scoping Report was prepared (February 2018) to comply with Section 10 of these Regulations. The purpose of a Scoping Report (**TR010039/APP/6.5**) was to establish the scope of the EIA and the level of detail required. A Scoping Opinion was adopted by the Secretary of State on 19 March 2018 (**TR010039/APP/6.6**).

1.4.3. An Environmental Statement (ES) (**TR010039/APP/6.1**) has been submitted as part of the DCO application. The ES provides an assessment of the potential impacts of the Scheme and sets out proposals for mitigation.

1.4.4. Chapters 5 to 15 of the ES (**TR010039/APP/6.1**) provide details of the assessments that have been undertaken. They also set out the impacts, a description of the likely significant effects on the environment and identify the measures that are proposed to reduce and, if possible, offset likely significant adverse effects on the environment.

## 1.5. Planning Policy Context

1.5.1. Section 104 of the PA 2008 states that, where a relevant NPS has been designated, decisions about applications for a DCO must be taken in accordance with it.

1.5.2. The NPS NN was designated on 14 January 2015. It sets out the Government's vision and policies to deliver road networks that meet the country's long-term needs, support a prosperous and competitive economy and improve the quality of life for all.

1.5.3. Further details can also be found in Section 6 of this document and the NPS NN Accordance Tables (**TR010039/APP/7.2**).

1.5.4. The aims of the Scheme are directly in line with the Government's policies and illustrate the need for the Scheme on a national level. The Government has highlighted the express need for further growth and improvements to the national networks within the NPS NN. The Road Investment Strategies (both 'RIS1[1]' and 'RIS2[2]'), which explore these needs in further detail and support the Scheme as a required improvement to the SRN.

1.5.5. The Scheme will improve road safety, reduce congestion-related delay and improve journey time reliability, making movements at the junctions more free-flowing and journey times more predictable.

1.5.6. The Scheme is also in general accordance with policies and objectives contained in the development plan in relation to supporting economic development through infrastructure improvement. By increasing road capacity, reducing congestion and improving safety on the A47 between Wansford and Sutton, and improving green infrastructure the Scheme will encourage inward investment, support housebuilding and support the economic growth objectives contained in the Cambridgeshire and Peterborough Independent Economic Review and the Cambridgeshire and Peterborough Strategic Spatial Framework. The Local Transport Plan also emphasises the interrelationship between the region's transport objectives and the delivery of wider goals relating to the economy, society and environment. The Peterborough LTTS and Local Transport Plan specifically lists the Scheme as a network improvement.

[1] Road Investment Strategy 1
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/408514/ris-for-2015-16-road-period-web-version.pdf
[2] Road Investment Strategy 2
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/872252/road-period-web-version.pdf

1.5.7. The Scheme accords with the development control policies of the Peterborough Local Plan and related SPDs by demonstrating through the chapters of the ES (**TR010039/APP/6.1**) that any impacts on the natural and built environment can be managed and mitigated against and that overall, the public benefits of the Scheme outweigh any unavoidable adverse effects which may remain.

1.5.8. Further details can also be found in Chapter 6 of this document.

## 1.6. Structure of the Report

1.6.1. This Case for the Scheme comprises seven sections as detailed below:

- Section 1 - sets out the details of the application and applicant, and explains why the Scheme is a NSIP which requires the submission of a DCO application
- Section 2 - describes the Scheme and the surrounding area and sets out how the Scheme has developed over time. It sets out the route options that have been considered and how the preferred route option was selected
- Section 3 - sets out the need for the Scheme, describes the existing environment and describes the Scheme
- Section 4 - summarises the transport case for the Scheme
- Section 5 - summarises the economic case for the Scheme and describes its monetised and non-monetised benefits
- Section 6 - assesses the Scheme against national, regional and local planning and transport policy, and considers the policy justification for the Scheme
- Section 7 – provides a summary, bringing together the case for the Scheme and setting out its overall compliance with the NPS NN, relevant planning policy and other important considerations.

# 2. Scheme Development and Options Considered

## 2.1. Development History and Alternative Options

2.1.1. During 2014 an A47/A12 Corridor Feasibility Study[3] (Feasibility Study) was undertaken by AECOM, on behalf of the then Highways Agency and the Department for Transport ('DfT'), to identify issues on the SRN on the A47/A12 Corridor between the A1 west of Peterborough and Lowestoft (south of the A47's junction with the A12).

2.1.2. Twenty-two locations were identified that were considered to have current or imminent problems. These were then considered further at a high-level using criteria from the DfT's Early Assessment and Sifting Tool ('EAST'). AECOM developed the Options Assessment Report ('OAR') for each scheme and from this recommended a solution for which Strategic Outline Business Cases (SOBC) were produced.

2.1.3. The Study informed the Government's RIS, and an initial case was made to carry out the following improvements:

- A47 Wansford to Sutton Dualling
- A47 Guyhirn Junction Improvements
- A47 North Tuddenham to Easton Dualling
- A47 Thickthorn Interchange Improvements
- A47 Blofield to North Burlingham Dualling
- A12 Junction Improvements

2.1.4. The three stages of the Feasibility Study were published on the DfT website in March 2015 (dated February 2015) and can be found at: https://www.gov.uk/government/publications/a47-and-a12-corridor-feasibility-study-technical-report

2.1.5. The Stage 1 Report of the Feasibility Study reviewed the existing evidence to identify any problems along the corridor, which is detailed as follows: *"Current Situation: The standards and level of service on the A47 vary considerably over its length with part of the network which are single and dual carriageways. It is understood that the widely held opinion by local authorities and the business*

[3] A47/A12 Corridor Feasibility Study A47 and A12 corridor feasibility study: reports - GOV.UK (www.gov.uk)

*community, is that the corridor in its current form is a significant constraint to growth". (*Page 3).

*2.1.6.* Future Situation*: "The area is expected to continue to grow with over 50,000 new jobs and 100,000 new homes planned for the area over the next 15 years. There are growth hotspots at several locations along the corridor, including Peterborough, Kings Lynn, Norwich and Great Yarmouth and Lowestoft."* Further, *"Growth is forecast to result in increased traffic levels on sections of the route and therefore add to congestion and other problems. At the same time, proposed developments could be constrained by the capacity limitations on the highway network to accommodate additional trips."* (Page 3)

*2.1.7.* Need for intervention: *"There are a wide range of traffic issues along this route due to the varying nature of the corridor in terms of local environment, travel patterns and requirements. The main issues for the route relate to capacity".* This impacts on route reliability and creates journey time delays. Further, *"It also can cause traffic to divert onto the highway network and generate further issues. There are safety issues in certain locations where there are currently high collision and incident rates which could be addressed."* (Page 3)

2.1.8. The study identified 32 challenges along the route with the majority being capacity issues along the full extent but also, asset condition, network operation, safety and social and environmental issues and lack of realistic alternatives to support planned growth, hence the need for interventions to address such problems.

2.1.9. In December 2014 the DfT published the RIS for 2015 to 2020 (RIS1). RIS1 included a package of six schemes (identified in 2.1.1 above) to be developed and constructed by the Applicant during Roads Period 1 (RP1) (2015 to 2020) and the early part of the Roads Period 2 (RP2) (2020 to 2025). It was anticipated that these would improve journeys on the 115-mile section of the A47 between Peterborough and Great Yarmouth. These schemes have been branded as the A47 Improvement Programme.

2.1.10. Following the publication of RIS1, AECOM produced a high-level appraisal of benefits for the identified schemes on behalf of the DfT. This work was summarised in the A47 & A12 Corridor Feasibility Study, Stage 3: The Case for Investment (see 2.1.4 above).

2.1.11. In April 2015, the Applicant assumed responsibility for the SRN and for delivering the Government's vision for that network as set out in the RIS. As a result, the Applicant took ownership of the previously DfT led 'Strategy, Shaping and Prioritisation' phase of Scheme development.

2.1.12. In March 2015 Amey, supported by AECOM, were appointed to lead on the work to jointly progress the six schemes on the A47 and A12 in Norfolk which comprise

the A47 improvements Programme. Amey were appointed to progress four schemes including the A47 Wansford to Sutton Dualling.

## 2.2. Options Identification

2.2.1. Initial feasibility work undertaken for the RIS A47/A12 Corridor by AECOM in 2015 (A47/A12 Corridor Feasibility Study – Stage 1) identified the following issues relating to the A1 to Sutton stretch:

- the RIS announced the Scheme as *"dualling the A47 between A1 and Sutton (2.5km)"*
- the A47 between the A1 and Sutton experiences peak period congestion. Growth in Peterborough and Norwich could potentially exacerbate this situation
- this part of the route is already over capacity leading to longer journey times. By 2031 this will be further exacerbated by planned development that may utilize this link
- the A1 to Sutton stretch of single carriageway has a poor safety record. In particular, Cluster 57 at Sutton Heath Road is located within the Scheme.

2.2.2. Dualling of the section of the A47 between Wansford and Sutton offers a solution to the congestion, safety issues and will support economic growth and development in the area. As part of this work, broad solutions were reviewed to ensure that dualling of the route represented a suitable and economically cost-effective solution. Two potential options were therefore developed during feasibility as follows:

- part on-line, part off-line to the north of the existing carriageway plus free flow from A1 southbound (refined Option 2 below)
- off-line to the north of the existing carriageway plus free flow from A1 southbound (refined Option 5 below).

2.2.3. These two options were refined and further options were developed. Nine potential route options were identified as follows[4][5]:

- Option 1 - On-line dualling plus free flow slip from the A1 south-bound

[4] Scheme Assessment Report 2018, Annex G (**TR010039/APP/7.10**)
[5] Scheme Assessment Report 2018, Annex J (**TR010039/APP/7.10**)

- Option 2 - Part on-line, part off-line to the north plus free flow slip road from the A1 south-bound
- Option 3 - Off-line to the south plus free flow slip road from the A1 south-bound
- Option 4 - Off-line to the south of the River Nene
- Option 5 - Off-line to the north plus free flow slip road from the A1 south-bound
- Option 6 - Off-line to the north plus free flow slip road from the A1 south-bound
- Option 7 - Off-line to the north plus free flow slip road from the A1 south-bound
- Option 8 - Part off-line to the north, part off-line to the south plus free flow slip road from the A1 south-bound
- Option 9 - Part on-line, part off-line to the south plus free flow slip road from the A1 south-bound.

## 2.3. Options Selection

2.3.1. Each of the potential route options were assessed, using Highway England's objectives, to ensure that they represented solutions which would solve the identified transportation problem and meet the commitments of the RIS. The initial comparative assessment was undertaken using the DfT's Early Assessment and Sifting Tool (EAST) and Highways England's Key Performance Indication (KPI) Assessment. The EAST sifting process rates the options against the economic, financial, managerial and commercial aspects of EAST.

2.3.2. Initially for each option a qualitative Appraisal Summary Table (AST) was completed based on available information. The assessment work was then developed to allow assessment and ranking of the nine options against environmental, transportation, engineering and economic criteria as follows.

2.3.3. Environmental Considerations: A qualitative review of environmental issues, based on available environmental data, was undertaken and the following environmental topics considered:

- Noise
- Air quality

- Greenhouse gases
- Landscape
- Townscape
- Historic environment
- Biodiversity
- Water environment

2.3.4. **Transportation Considerations**: Each of the options offered a solution to the transportation problem and each provided additional capacity on the network. Therefore, the consideration of transportation issues was predominantly based on route length; the shorter the route, the lower likely journey times and the more favourable the option was rated in the process.

2.3.5. **Engineering**: A qualitative engineering assessment, based on the data available, was made taking the following engineering criteria into consideration:

- Buildability
- Land requirements
- General alignment
- Accommodation works
- Geotechnical
- Structures
- Impact on statutory undertakers.

2.3.6. **Economic Assessment:** A comparative economic assessment of each option was made based on high level comparative estimates of scheme costs and potential benefits.

2.3.7. A rough order of cost estimate of the likely scheme cost of each of the options was estimated based on the typical solution estimate from previous stages with an adjustment made to account for the split of the option length online to offline. Offline construction was estimated to be cheaper by about 20% than online construction.

2.3.8. Assessment Results: The results from the above exercises are presented in Table 2-1. These results were reviewed by Amey and used to determine a reduced number of potential options to be taken forward for further assessment and analysis and for the non-statutory public consultation.

Table 2-1 - Results of Comparative Qualitative Option Assessment

| Option | Comparative Qualitative RAG Ranking | | | | Options taken forward to consultnoation | Comment |
|---|---|---|---|---|---|---|
| | Environment | Engineering | Traffic | Economic | | |
| Option 1 | | | | | Yes | Option is online so the construction costs are higher, however it has the least impact on Designated sites. Although it ranked 7, once the remaining options were grouped together it ranked 3rd so was taken forward. |
| Option 2 | | | | | No | Option was considered too similar to Option 5 within the tolerance of design evolution so was not taken forward. |
| Option 3 | | | | | No | Option ranks first and ranks well on all four assessments however it was considered similar to Option 8 which ranked 2nd. Option 3 was closer to the fuel station compared to Option 8, so Option 3 was not taken forward. |
| Option 4 | | | | | No | Option scores poorly on all 4 assessments and is 0.3 km longer so was not taken forward. |
| Option 5 | | | | | No | This option was considered similar to Option 2 within the tolerance of design evolution. It was agreed the option should move slightly further north and be called Option 10 and taken forward. |
| Option 6 | | | | | No | Option ranks sixth. It is a longer route giving reduced journey time benefits. It was agreed at ORM that the option should not be taken forward. |
| Option 7 | | | | | No | Although from an environment perspective the option ranks well as it is away from designated sites it takes the local residents through a much longer route. It also scores poorly on transport and economic assessment so was not taken forward. |
| Option 8 | | | | | Yes | This option ranks second and was selected for further assessment as it is slightly further away from the Fuel station compared to Option 3. |
| Option 9 | | | | | No | This option was considered too similar to Options 3 and 8 within the tolerance of design evolution so was not taken forward. |

2.3.9. Options 2 and 5 were considered to be similar, within the tolerance of design evolution. Option 5 impacted on the southern end of the scheduled monument. At that same point the route also partially utilised the existing A47 carriageway so

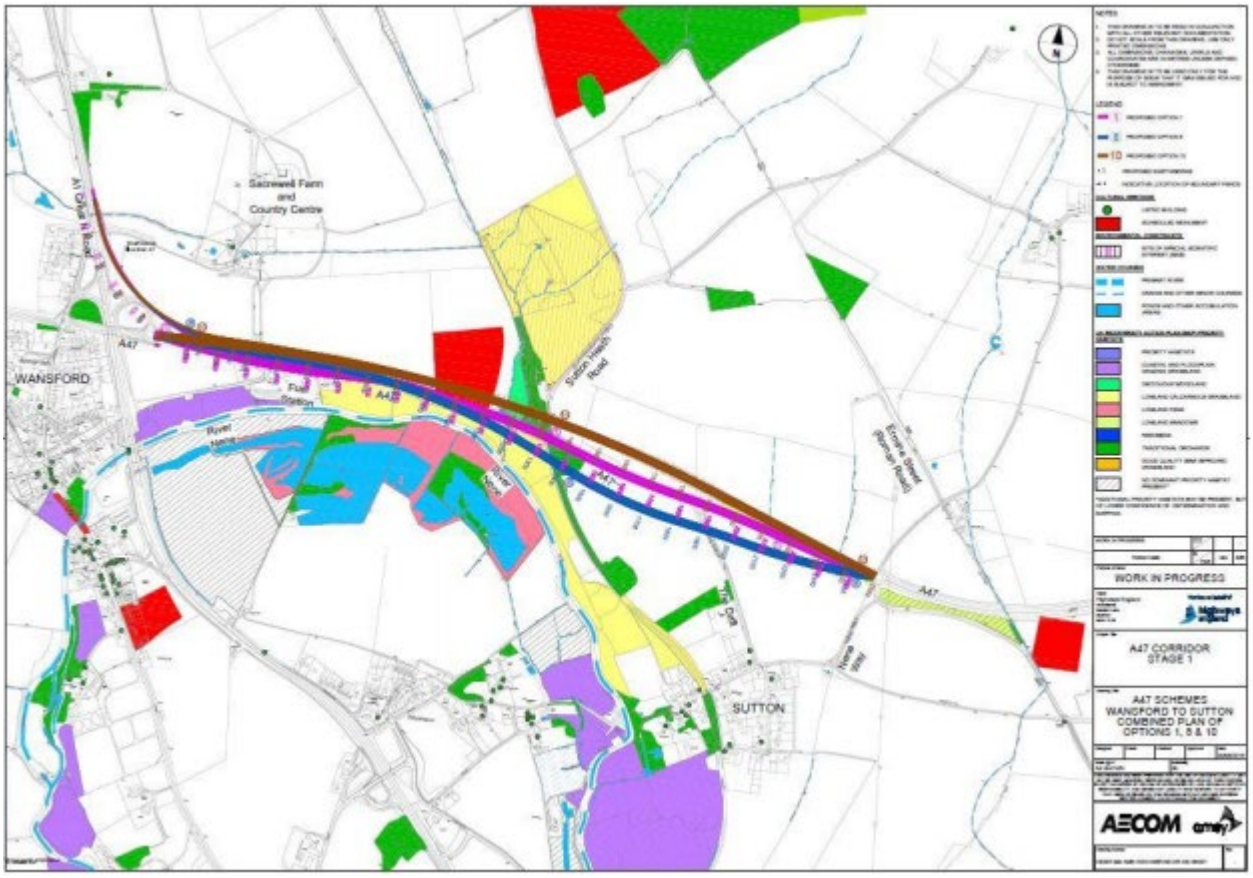
a suggestion was made to modify Option 5 further north to avoid using the existing carriageway and to re-name this **Option 10**.

2.3.10. The Scheme Assessment Report (SAR) (**TR010039/APP/7.9**) produced by Highways England and Amey (February 2018) summarises the findings of the technical, operational, safety, traffic, economic and environmental assessments. This formed the basis for recommendations for which options should be taken forward for non-statutory public consultation.

2.3.11. Three of the ten options were selected by Highways England and taken forward for further assessment as shown in Figure 2-1 below. These were:

- **Option 1**: On-line dualling plus free flow slip road from A1 southbound
- **Option 8**: Part off-line to the north, part off-line to the south plus free flow slip road from A1 southbound
- **Option 10**: Off-line to the north plus free flow slip road from A1 southbound

Figure 2-1 Options selected for further assessment



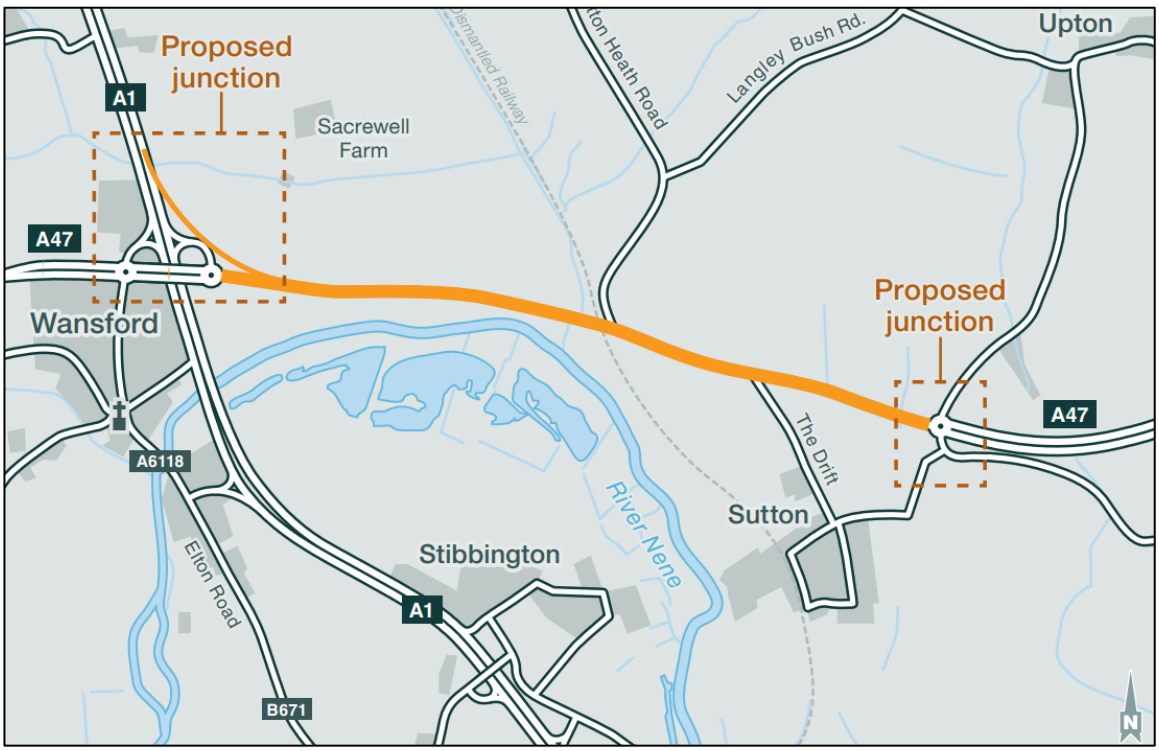

2.3.12. Options 1, 8 and 10 were subject to further environmental, economic, and technical assessment. These options were taken forward to non-statutory public

consultation in March/April 2017. For simplicity in gathering public comment and for presentation at the consultation, it was decided that the 3 options should be renumbered 1 to 3, as follows:

- Option 1 renamed Option 1
- Option 8 renamed Option 2
- Option 10 renamed Option 3

2.3.13. **Option 1** proposed on-line dualling of the 2.5 km single carriageway section of the A47 between Wansford and Sutton including a free flow link from the A1 southbound carriageway to the new eastbound carriageway of the A47. The new carriageway would tie into the existing carriageway at the eastern roundabout at the A1/A47 interchange and at the Nene Way roundabout at the eastern end of the Scheme. The slip road from the A1 would also connect to the existing roundabout to accommodate A47 westbound traffic. To the west of Sutton Heath Road, the route would encroach on the scheduled monument by approximately 3m over a length of 180m. The appropriate provision would be made to ensure connectivity to side roads, properties, fields and farms. The layout is shown in Figure 2-2.

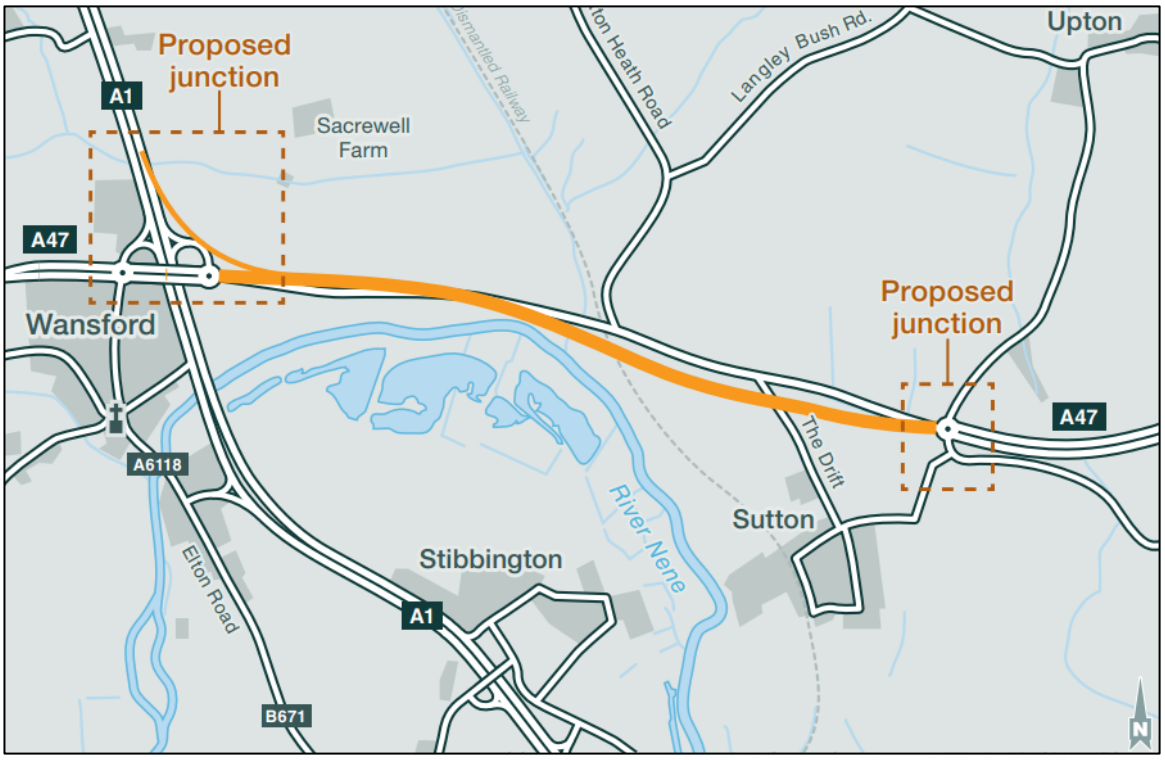
Figure 2-2 Option 1




2.3.14. **Option 2** shown in Figure 2-3 proposed building a new dual carriageway which would be offline to the north of the fuel station for approximately the first 25% of the

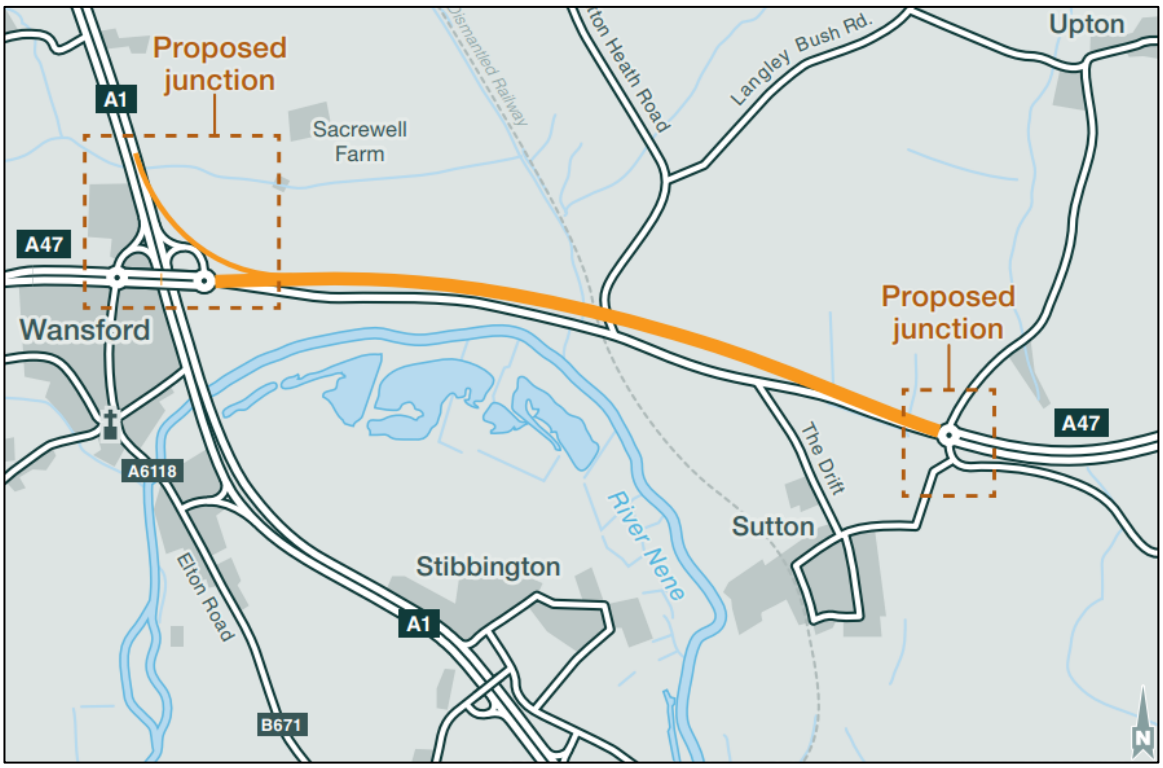
route and then cross over the existing carriageway and go offline to the south of the existing A47 through Sutton Meadows County/Local Wildlife Sites (CWS) to a point approximately 25m from the River Nene. The route would then pass 45m south of the existing A47/Sutton Heath Road junction and south of the property called Deep Springs. It would then cross at grade the side road called The Drift approximately 60m south of the existing A47 and across agricultural land before tying in to the existing A47 at the Nene Way roundabout. The appropriate provision would be made to ensure connectivity to side roads, properties, fields and farms.

Figure 2-3 Option 2




2.3.15. **Option 3,** in Figure 2-4 below, proposed a dual carriageway constructed offline to the north of the existing A47. The proposed alignment would pass 46m to the north of the existing fuel station and runs across agricultural land towards Sutton Heath Road. The route would go through the scheduled monument. The northern boundary of the route would be up to 50m inside the boundary of the scheduled monument over a distance of 200m, crossing the southern tip of the Site of Special Scientific Interest (SSSI). After passing Sutton Heath Road the route would continue at grade 60m to the north of the existing A47, across agricultural fields until tying in with the existing at grade A47 roundabout at Nene Way. The appropriate provision would be made to ensure connectivity to side roads, properties, fields and farms.

Figure 2-4 Option 3




## 2.4. Non-Statutory Consultation

2.4.1. The three options were presented at a non-statutory public consultation between March and April 2017. The purpose of the consultation was to seek views on the outline proposals from various interested parties and stakeholders as well as gauging public opinion. Highways England actively sought to discuss the proposals with parties directly affects by the proposals, such as landowners and those with business interests or development proposals within the vicinity of the Scheme. Consultation also commenced with Peterborough City Council and the local councils.

2.4.2. The total number of respondents to the consultation was 170, 147 of whom supported the need to improve the section and agreed the proposals would be beneficial in reducing congestion and improving journey times. The consultation was reported in the 'A47 Corridor Improvement Scheme; Public Consultation Report A47 Wansford to Sutton (August 2017) (**TR010039/APP/7.8**).

2.4.3. A summary of the level of support for each of the options is provided in Table 2-2.

| Table 2-2: Summary of the main themes raised during the options consultation and Applicant's response | |
|---|---|
| **Theme** | **Issue or concern** |
| Need case | Congestion and the increasing volume of traffic were highlighted as the most common reasons for support for improvement. Safety at junctions and along this stretch of the A47 was also a main concern. There were comments that the road is too narrow and poorly maintained, but some argued the benefits of the Scheme would not outweigh the cost. |
| Support for Option 1 | The main reason for support for Option 1 by respondents was that it follows the existing road layout, minimising the land-take and environmental impact and not leaving a 'dead road' behind. |
| Concern about Option 1 | Others argued that Option 1 would cause disruption during construction, force agricultural traffic to mix with long-distance traffic and create 'rat-runs' through local villages. Concerns were also expressed about flooding and damage to local habitats, as well as the impact on existing junctions and the turning over the old railway. |
| Support for Option 2 | Support for Option 2 came from those who believed it would have the least impact during construction and allow Sutton Heath Road to connect directly to the Sutton roundabout using the old A47 road. Respondents also welcomed the removal of a lay-by which is a location for criminal activity. |
| Concern about Option 2 | Those who opposed Option 2 were concerned about its proximity to Sutton and the impact on local residents and businesses. They also said this route could be at risk from flooding and would remove valuable farmland and wildlife habitats. |
| Support for Option 3 | Option 3 was the preferred option for many respondents who felt it was the best option for addressing congestion and welcomed the conversion of the old A47 route into a route for local traffic including cyclists. Respondents said this northerly option would take noise and air pollution away from Sutton and be at less of a risk from flooding. |
| Concern about Option 3 | Those who opposed Option 3 were concerned about the land-take required and the impacts on Sacrewell Farm and local heritage assets, such as Bronze Age crop marks and the old railway station. |
| Walking, cycling and horse riding (WCH) | A total of 149 respondents expressed support for improving provision for pedestrians, cyclists and other users, whilst nine said improvements were not needed. Those who believed improved provisions were needed expressed concerns about safety on the current road and noted that Option 2 and Option 3 would both enable the old A47 to be used by non-motorised users. There were calls for a designated cycleway to be built if Option 1 was pursued. Respondents noted the importance of safe routes and crossing points for walkers and equestrians and asked for the River Nene footpath to be protected. Some respondents also encouraged Highways England to consider access for local buses. |

2.4.4. Having reviewed the feedback following the consultation and the results of the further environmental, economic and technical assessment, it was identified that Option 2 would solve the main traffic and safety problems along the route. Previous design and development also concluded that Option 2 would have significant advantages in terms of environmental impact compared to Option 3 and would have less impact during construction compared to Option 1. Option 2 was therefore identified as the preferred route.

2.4.5. However, some concerns raised during the non-statutory consultation have however influenced an amendment to the original Option 2 proposal. The new dual carriageway would be moved as close as possible to the southern edge of the existing A47 at the eastern end of the Scheme. This would:

- increase the distance from the new road to both the River Nene and the village of Sutton
- reduce the amount of land take required
- allow for the easiest connection of existing side roads to the new A47
- allow for most of the existing A47 to remain in place for local traffic and walkers, cyclists and horse riders.

2.4.6. The SAR includes a summary of the previous assessments, reports on the non-statutory public consultation and includes the further surveys, investigations and assessments undertaken.

## 2.5. Preferred Route Announcement

2.5.1. The Preferred Route, 'Option 2 – building a new dual carriageway, partly to the north and also to the south of the existing A47 plus a free flow link from the A1 southbound' was announced on the project website in August 2017. This option would solve the traffic and safety problems as identified the A47/A12 Corridor Feasibility Study (see 2.1.4 above); it could be built with the least disruption to drivers during construction; would have the least impact on the environment; and the existing road could remain for local traffic, pedestrians, cyclists and equestrians.

## 2.6. Statutory Consultation

2.6.1. Statutory consultation on the Preferred Route was held between 18 September and 12 November 2018. Full details of this consultation are provided in the Consultation Report and its Appendices (**TR010039/APP/5.1** and **5.2**).

2.6.2. Highways England consulted with the local community in accordance with the Statement of Community Consultation (SoCC), provided in Annex F of the Consultation Report (**TR010039/APP/5.2**), as prescribed by Section 47(7) of the PA 2008.

2.6.3. Highways England invited all consultees, including those identified under Section 42, Section 47 and Section 48 of the PA 2008, to submit feedback within the consultation period noted above.

2.6.4. A total of 688 responses were received during the consultation period.

2.6.5. When asked if they supported or opposed the proposals to construct a new stretch of dual carriageway between Wansford and Sutton, (Question 1a) of the questionnaire, 72% of respondents said they agreed with the dualling proposals.

## 2.7. Design Development

2.7.1. Following consideration of the responses to the statutory consultation a full design review has taken place to take into consideration the feedback received resulting in some key changes to the scheme design. These include:

- changes to both roundabouts at the junction of the A1 and A47 at Wansford
- realignment of the A1 southbound to A47 eastbound slip road removal of the bus stop and the direct access to the A1 from properties adjacent to Windgate Way for safety reasons
- alterations to side roads in the vicinity of the BP service station
- new crossings for cyclists at the western roundabout at the A47 junction with the A1 and improved connections for WCH to the proposed routes to the east of the A1 via Peterborough Road, the A1 underpass, and the recently improved route to the Wansford picnic area.

2.7.2. Following the feedback to the statutory consultation in 2018, it was noted that many stakeholders preferred the route to be aligned north of the existing A47. A route entirely north of the existing A47 between Wansford and Sutton was determined not to be feasible due to the environmental constraints. The 2018 design has been assessed against an alternative northern alignment developed in 2020. Engineering, environment, traffic and costs have been considered in order to determine the best solution. Both the 2018 design and the 2020 northern alignment have been designed to meet the appropriate standards. Therefore, there is no preference for either option. The 2018 design and the 2020 northern alignment also perform similarly in terms of the environmental topics assessed though the outcome of the assessments suggested that the 2020 northern

alignment performs marginally better. Traffic and cost were not differentiating factors between the two designs. Considering the feedback to the 2018 statutory consultation and the outcome of the comparative assessment, the 2020 northern alignment was taken forward for further detailed design.

2.7.3. As the statutory consultation had taken place in 2018, a Project Update Brochure was produced (Autumn 2020) and circulated within the 2018 consultation zone and to stakeholders. A focused statutory consultation was also undertaken between 11th September and 9th October 2020 to consult newly affected parties of the Scheme.

2.7.4. The feedback received from the consultations, together with that from the 2020 engagement, and ongoing engagement has informed the Scheme as presented within the application documents which now has a slightly altered alignment in the vicinity of the scheduled monument. Following discussions with Historic England the proposed alignment now passes through the south east corner of the scheduled monument. This has allowed a reduction in the area required for flood compensation. As a result of this slight change in alignment following responses to the 2020 engagement and to capture any further land interests a further round of targeted statutory consultation was undertaken from 10 May 2021 and 9 June 2021.

2.7.5. Following statutory and non-statutory consultation, the Applicant continued engagement with stakeholders to keep them updated about the Scheme and to discuss technical elements of plans. This took the form of scheduled meetings, conference calls and email correspondence. Full details of engagement and consultation are set out in the Consultation Report (**TR010039/APP/5.1**). Details of ongoing engagements to develop the Statements of Common Ground and resolve issues with key stakeholders are provided in Annex M of the Consultation Report (**TR010039/APP/5.2**).

2.7.6. The Scheme development is further detailed within ES Sections 2 and 3 (**TR010039/APP/6.1**) and the Scheme Design Report (**TR010039/APP/7.4**), including the design's key features presented at consultation and the Scheme which is included within the application.

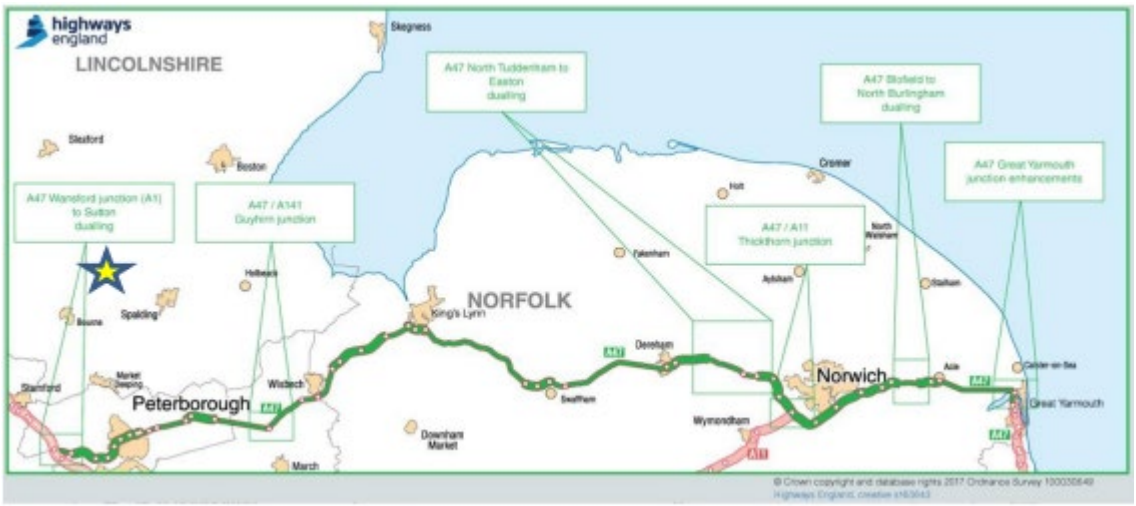
# 3. The Need for the Scheme

## 3.1. Overview

3.1.1. The A47 is an important highway link for both local commuter traffic to and from the west of Peterborough and for longer distance trips across the country travelling east and west.

3.1.2. In the wider context, the A47 trunk road forms part of the SRN and provides for a variety of local, medium and long-distance trips linking with the A1 to the north and M1 to London, east to the coastline and west to Leicester. The A47 corridor connects the cities of Norwich (population over 141,000[6]) and Peterborough (population over 201,000), the towns of Wisbech, Kings Lynn, Dereham, Great Yarmouth and Lowestoft and a succession of villages in what is largely a rural area. The A47 also links with the A11 Cambridge Norwich Tech Corridor – an initiative, supported by four District Councils, which seeks to attract up to 15,000 new jobs, £900 million private sector investment in construction and 20,000 new homes along the corridor[7]. The route of the A47 also passes through the Broads National Park east of Acle. The location of the A47 corridor, including the 6 identified schemes from the RIS is shown in Figure 3-1 below. The approximate location of the Wansford to Sutton Scheme is indicated with a yellow star.

Figure 3-1 Location Plan[8]




3.1.3. Norwich and Peterborough have developed service-based economies and the towns along the route of the A47 have retained market town and other functions including agricultural-related industry. In recognition of the potential for

[6] ONS 2018 Population estimates for Norwich and Peterborough
[7] Cambridge Norwich Tech Corridor: Vision and Spatial Strategy Report 2020, Perkins & Will
[8] Extracted from RIS East Area 6, A47 Blofield to North Burlingham, Scheme Assessment Report 2018 (**TR010039/APP/7.9**)

businesses and economic growth on the eastern coast, the Chancellor announced in the 2011 budget the establishment of the Great Yarmouth and Lowestoft Enterprise Zone particularly for energy related businesses to maximise support for the offshore energy sector. In December 2013, the Government announced a Greater Norwich City Deal[9] to enable knowledge-based industries to develop.

3.1.4. There has been a rapid growth in the economy along the A47 corridor over the past decade which is expected to continue to grow. The cities of Peterborough and Norwich attract additional traffic along the route, particularly during the morning and evening peak periods.

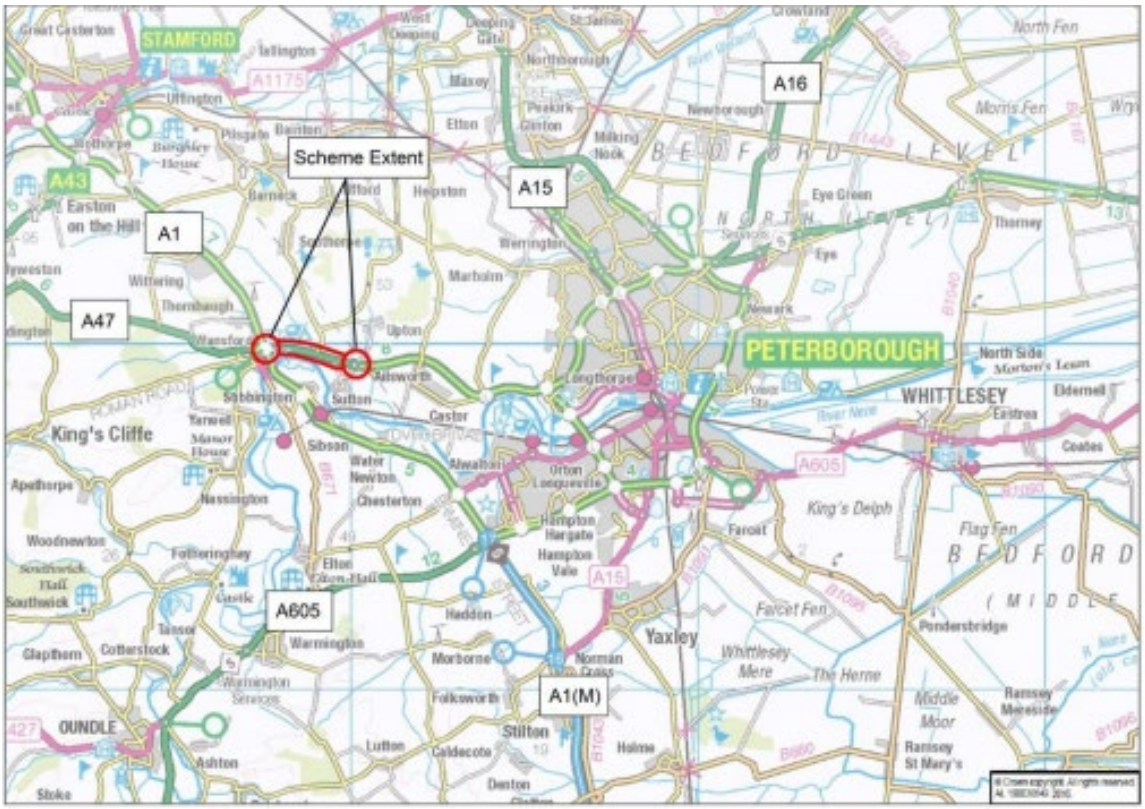
3.1.5. Traffic is forecast to grow across the country, and the A47 & A12 Corridor Feasibility Study (Stage 1, Page 3) states this area is expected to continue to grow with over 50,000 new jobs and 100,000 new homes planned for the area over the next 15 years. There are growth hotspots at several locations along the A47 corridor, including Peterborough, Kings Lynn, Norwich and Great Yarmouth and Lowestoft. There are several major proposed housing developments close to the A47, including at Rackheath and Wisbech, Norwich and on the fringes of Great Yarmouth and Lowestoft.

3.1.6. The A47 Alliance, comprising of Local MPs, local government, businesses and other stakeholders, have been campaigning for comprehensive improvement of the A47. Their aim is to capitalise on the potential economic benefits of improved accessibility to the Midlands and the North as well as address safety issues.

3.1.7. The Wansford to Sutton section of the A47 runs from the A1 in the west (near Wansford) to the dual carriageway section near the village of Sutton in the east as shown in Figure 3-2. It is 2.6 km in length. Peterborough lies approximately 9km east of the link. Beyond Peterborough the A47 continues to Norwich and the east coast at Great Yarmouth. The corridor intersects with key strategic routes including the A1, A10 and A11. These strategic roads provide links to other urban centres including Cambridge, Ely and London.

[9] Greater Norwich City Deal City Deal » Greater Norwich Growth Board

Figure 3-2 Locality of Scheme




3.1.8. Travelling from west to east, from its junction with the A1 east of Wansford, the A47 is single carriageway, becoming dual carriageway at the Nene Way roundabout junction to the east. Sutton village is located south of the existing A47. The area is characterised by isolated farmsteads and small, nucleated villages with local businesses and retail outlets which are linked by a network of local access roads.

3.1.9. The 2.6km stretch of single carriageway between Wansford and Sutton lies between two dual carriageway sections of the A47 and acts as a bottleneck, resulting in congestion and leading to longer and unreliable journey times. In addition, this section of the A47 has a poor safety record.

3.1.10. Eastbound traffic levels exceed the capacity by up to 15% in the AM peak period on a typical weekday, which is likely to result in significant congestion and delay on the link. This effect is independent of junction delay on the A47 and does not take account of local factors such as horizontal and vertical curvature and poor forward visibility that may further reduce capacity.

3.1.11. Westbound traffic levels are higher in the PM peak where they reach 95% of the road's capacity on a typical weekday. This is likely to result in lower vehicle speeds given the A47's speed-flow relationship even if the capacity is not

exceeded. The same issues with curvature, junction delay and visibility also apply as with eastbound traffic.

3.1.12. The A47 is ranked 2nd nationally for fatalities on A roads and the accident severity ratio is above average. During the period October 2011 to September 2016 a total of 2 fatal accidents, 5 serious accidents and 34 slight accidents were recorded along the section of the A47 which is subject to the Scheme. The 41 accidents resulted in 64 casualties: 51 slight, 10 serious and 3 fatal. Further detail is included in section 3.4 of the Scheme Assessment Report, 2018 (**TR010039/APP/7.9**).

3.1.13. Due to the lack of nearby alternative routes, route resilience on this link is also an issue.

3.1.14. The proposed solution to the traffic and safety issues set out above and put forward as a committed scheme in both the Road Investment Strategy 1 (RIS1) and RIS2 is *"dualling of the A47 between the A1 and the dual carriageway section west of Peterborough."*

3.1.15. Dualling of this section of the A47 will:

- improve road safety for all road users, ensuring the road design meets modern standards for a major A-road
- shorten journey times, make journey times more reliable, and provide capacity for a rise in future traffic
- contribute to sustainable economic growth
- help the road to better cope with incidents such as collisions, breakdowns, road maintenance and extreme weather
- ensure the proposals consider the local communities
- provide a safer route between communities for walking, cycling and horse riding.

## 3.2. Description of the Existing Road and Area

3.2.1. The Scheme lies adjacent to the River Nene and the Nene Valley. Arable farmland is the predominant land cover in the area, divided into relatively small agricultural enclosures interconnected by narrow rural lanes, and defined by hedgerows and ditches throughout the landscape. The fields are interspersed with fragmented patches of woodland and clusters of farms and residential settlements.

3.2.2. The land potentially required temporarily and/or permanently for the construction, operation and maintenance of the Scheme (hereafter referred to as the DCO site boundary), is shown on the Land Plans (**TR010039/APP/2.2**).

3.2.3. The scheme section begins where the A47 meets the A1 at Wansford west of Peterborough and continues 2.6 km east to the Sutton roundabout.

3.2.4. To the west, the A1 and A47 are connected via a half cloverleaf signalised dumbbell arrangement, with the A47 crossing over the A1 dual carriageway. This dumbbell junction arrangement includes two roundabouts, referred to as the western and eastern roundabouts. The western roundabout provides access to the village of Wansford via the A6118.

3.2.5. Continuing eastwards from the A47/A1 junction the A47 is a single carriageway road. The A47 runs adjacent to the navigable River Nene for the first kilometre, being some 50m from it at its closest point. Thereafter the River deviates southwards away from the road.

3.2.6. This section of the A47 is subject to a national speed limit of 60mph.

3.2.7. There are a number of side roads joining the A47 along the scheme length, via at grade priority, simple and right turn lane T junctions. From west to east, the following side roads and junction types are noted:

- Access to Sacrewell Farm and Country Centre – T junction
- Access to Truck stop/Picnic area and Wansford pumping station – ghost island junction
- Petrol filling station – ghost island junction
- Sutton Heath Road – ghost island junction
- The Drift – double T-junction

3.2.8. To the east, the A47 connects to Nene Way via Sutton roundabout. The roundabout provides connections to the villages of Sutton and Ailsworth to the south and Upton to the north. To the east of the roundabout the A47 is dual two-lane carriageway.

3.2.9. There is currently no lighting on this section of the existing A47 until its transition to dual carriageway at the eastern end.

## 3.3. Walking, Cycling and Horse-riding

3.3.1. The existing walking, cycling and horse riding (WCH) facilities in the study area comprise Public Rights of Way (PRoW), (namely footpaths and bridleways), permissive routes and footways provided as part of the highway network. There are also short cycleway sections.

3.3.2. A detailed description of existing pedestrian, cycling and horse-riding facilities is included in Section 5.1 of the Transport Assessment (**TR010039/APP/7.3**) and in the WCH assessment in ES Chapter 12 Population and Human Health (**TR010039/APP/6.1**).

## 3.4. Existing Land Uses & Character

3.4.1. The Scheme is located within the Peterborough City Council area and within the administrative boundary of Cambridgeshire County Council.

### *Topography*

3.4.2. The topographical range within the undulating plateau landscape and shallow valley landscape of the study area is limited. The Site (defined by the DCO boundary) comprises an area of land which lies close to the east to west route of the existing single carriageway A47. To the north lies a slightly elevated plateau landscape. To the south lies the shallow valley of the River Nene. The route of the existing A47 broadly aligns with the boundary between these two areas. Along the eastern end of the scheme an approximately 1.7km existing woodland belt runs principally to the north of the existing A47 further defining the boundary between the two areas.

### *Land use*

3.4.3. The Scheme lies adjacent to the River Nene and the Nene Valley. The area is characterised by arable farmland with typically small agricultural enclosures interconnected by narrow rural lanes and defined by hedgerows and ditches throughout the landscape. The fields are interspersed with fragmented patches of woodland and clusters of farms and residential settlements. Natural resources include biodiversity habitats, agricultural soils, mineral and groundwater (aquifers) resources.

3.4.4. There are five statutory designated sites of national and local importance within 2km of the Scheme and one additional statutory designated site of international importance which is further than 2km from the Scheme boundary but hydrologically connected. There are also ten non-statutory designated County/Local Wildlife Sites (CWS) within 2km of the Scheme.

3.4.5. There are a few residential properties adjacent to the A47. One is located on Sutton Heath Road (Heath House) and the other is north of the existing Nene Way roundabout (Lower Lodge Farm). Wansford to the west, Sutton to the south and Upton to the north are the nearest residential areas to the Scheme. Wansford has a population of approximately 500, with approximately 140 homes, with local facilities and support services. Peterborough to the east has a population of just over 200,000 (mid-2019 estimate). The Peterborough Local Plan 2019 allocates over 16,000 dwellings in the period 2018 – 2036 and over 160ha of employment land for development which will increase the population significantly. All committed and proposed developments have been included in the transport modelling, reported in the Transport Assessment (**TR010039/APP/7.3**) which is summarised in Section 4 of this Case.

3.4.6. Sutton lies south of the A47 and is currently accessed via The Drift and Nene Way from the A47. The village has approximately 50 residential properties. Upton is north of the A47 accessed via Upton Road leading from the Nene roundabout. It is a small residential hamlet.

### *Ecological Designations*

3.4.7. A number of statutory designated sites have been identified within the 2km of the Scheme, or with a direct hydrological connection. They include:

- Nene Washes Special Area of Conservation (SAC) / Special Protection Area (SPA) / Ramsar and Site of Special Scientific Interest (SSSI) (10km east)
- Sutton Bog and Heath SSSI (<0.1km north)
- Wansford Pasture SSSI (0.3km South)
- West Abbot's and Lound Woods SSSI (0.5km west)
- Old Sulehay Forest SSSI (0.8km south-west)
- Southorpe Roughs SSSI (1.3km north-east)
- Southorpe Paddock SSSI (1.6km north-east)
- Castor Hanglands National Nature Reserve (NNR) and SSSI (1.6km north-east)
- Bedford Purlieus NNR and SSSI (1.8km west)
- Castor Flood Meadows SSSI (2.0km south-east).

3.4.8. There were no statutory designated sites notified for bats within 30km of the Scheme.

3.4.9. The Nene Washes SPA, SAC, Ramsar sites have been assessed as a biodiversity resource of **international importance**.

3.4.10. The Nene Washes SSSI, Sutton Bog and Heath SSSI, Wansford Pasture SSSI, West Abbot's and Lound Woods SSSI, Old Sulehay Forest SSSI, Southorpe Roughs SSSI, Southorpe Paddock SSSI, Castor Hanglands SSSI, Bedford Purlieus SSSI and Castor Flood Meadows SSSI has been assessed as a biodiversity resource of **national importance**.

3.4.11. Castor Hanglands NNR, Bedford Purlieus NNR has been assessed as a biodiversity resource of **local importance.**

3.4.12. In addition, 52 non-statutory designated sites were identified within 2.0km of the Scheme including:

- 31 County Wildlife Sites of **county importance**
- six Ancient Woodlands of **national importance**
- one Local Geological Site
- seven Wildlife Trust Reserves and Local Wildlife Sites of **local importance**
- seven Potential Wildlife Sites of **local importance**.

*Heritage Designations*

3.4.13. A total of 482 heritage assets have been identified within the study area. These assets are made up of:

- 201 listed buildings
- 13 scheduled monuments
- 246 non-designated assets
- 8 Conservation Areas

- 14 non-designated historic landscape types in 138 individual parcels[10]

3.4.14. Notably, the Scheme is situated partially immediately to the south and partially encompassing a small area of a Bronze age barrow cemetery with later Roman enclosures. This is a scheduled monument which is of national significance.

3.4.15. There are no World Heritage Sites, Registered Parks and Gardens or Registered Battlefields within the study area.

### *Landscape Designations*

3.4.16. There are no general protective landscape designations associated with the Scheme study area.

### *Landscape Character*

3.4.17. The alignment of the Scheme broadly coincides with the boundary of two National Character Areas (NCA): Rockingham Forest (NCA 92) to the north and the Northamptonshire Vales (NCA 89) to the south. These two national character areas broadly correspond with the locally identified landscapes of the Nassaburgh Limestone Plateau to the north and the Nene Valley to the south. These have been considered in detail.

3.4.18. Two locally identified landscape character areas (Rockingham Forest and the Northern Wolds) were deemed to be peripheral to the study area with no potential for any significant effect upon their landscape character as a result of the Scheme. These were not considered further.

### *Water and flood risk*

3.4.19. There are various water features located within the vicinity of the Scheme including 29 small lakes and ponds in the neighbouring fields and ten drainage channels. These include:

- The River Nene – a designated main river located to the south of the Scheme, including several large lakes and drainage ditches to the south of the main channel all of which are within the study area
- Wittering Brook, located west of Sutton Heath Road, which passes though the study area
- Mill Stream, 0.3km north of the A47 within the study area

[10] An individual parcel is made up of a small area of land that is the same character throughout. In the study area, these are mostly post-medieval and modern landscape types distributed in a mosaic across the landscape,

- Splash Dyke, at the easternmost point of the Scheme, within the study area
- Two drainage ditches, north of the A47, west of Upton Road, within the study area
- Two ponds within the construction area of the Scheme, west of Upton Road and six ponds to the west of the Scheme within the study area.

3.4.20. The River Nene is an Environment Agency designated river. Wittering Brook, Mill Stream and Splash Dyke are designated as ordinary watercourses and as such, matters pertaining to flood risk on these watercourses is the responsibility of the Lead Local Flood Authority (Peterborough City Council).

3.4.21. The majority of the study area is located within Flood Zone 1, which is associated with a low risk of river flooding. However, the land immediately surrounding the River Nene, Wittering Brook and Mill Stream is primarily designated as Flood Zones 2 and 3. Flood Zone 2 is associated with a medium risk of flooding while Flood Zone 3 is associated with a high risk of flooding.

3.4.22. Flood Zone 3 is split into two separate zones:

- Flood Zone 3a is land having a 1 in 100 or greater annual probability of river flooding
- Flood Zone 3b is land with a 1 in 20 or greater annual probability of flooding and is classified as active floodplain. This area requires water to flow or be stored in times of flood.

3.4.23. Land surrounding the River Nene has been identified within Flood Zone 3b. Flood Zone 3 associated with both Wittering Brook and Mill Stream are identified to be within Flood Zone 3a

3.4.24. The existing carriageway is drained through a highway drainage network utilising a variety of drainage systems.

### *Noise*

3.4.25. The priority for undertaking noise measurements was given to residential properties considered to have the potential to be adversely affected by the Scheme. The closest accessible position where access had been granted at each property was used.

3.4.26. Existing noise volumes, including traffic, taking account of weather conditions were recorded at six locations (see Figure 11.1 Noise Location Plan **TR010039/APP/6.2**). There was an Annual Average Daily Flow of 23,600 vehicles in the base year 2015, forecast to increase to 26,900 in the opening year (2025).

From these figures it is likely that the existing A47 is the main source of existing noise in the area.

*Air quality*

3.4.27. The area is largely rural in nature and the main source of air quality pollutants is from road traffic along the A47 and the minor road network. A desk top exercise modelled a baseline year of 2015. To determine the current baseline conditions around the study area, a six-month nitrogen dioxide survey was conducted for the purpose of the air quality assessment. The diffusion tube survey ran from September 2019 to March 2020 and supplemented the existing monitoring undertaken by Peterborough City Council and Huntingdonshire District Council.

3.4.28. The monitoring survey concluded that there were no exceedances of the annual mean nitrogen dioxide ($NO_2$) objective within the vicinity of the Scheme. The highest concentration measured within the study area was 25.6 µg/m$^3$ (micrograms of gaseous pollutant per cubic meter of ambient air) at Wansford 4, located on Old North Road directly adjacent to the Scheme. This is below the $NO_2$ annual mean objective of 40 µg/m$^3$. Existing air quality in the vicinity of the Scheme is deemed to be good, as the closest Air Quality Monitoring Area (AQMA) is 6km to the east.

## 3.5. Description of the Scheme

3.5.1. The Scheme comprises:

- approximately 2.6km of new dual carriageway constructed largely offline of the existing A47, including the construction of two new underpasses
- a new free-flow link road connecting the existing A1 southbound carriageway to the new A47 eastbound carriageway
- a new link road from the Wansford eastern roundabout to provide access to Sacrewell Farm, the petrol filling station and the Anglian Water pumping station
- closure of the existing access to Sacrewell Farm with a new underpass connecting to the farm from the link road provided
- a new slip road from the new A47 westbound carriageway also providing access to the petrol filling station
- a link road from the new A47 Sutton Heath roundabout, linking into Sutton Heath Road and Langley Bush Road

- new junction arrangements for access to Sutton Heath Road and Langley Bush Road
- closure of the existing accesses to the A47 from Sutton Heath Road, Sutton Drift and Upton Road
- new passing places and limited widening along Upton Drift (also referenced as Main Road)
- new walking and cycling routes, including a new underpass at the disuse railway
- new safer access to the properties on the A1, north of Windgate Way
- installation of boundary fencing, safety barriers and signage
- new drainage systems including:
    - two new outfalls to the River Nene
    - a new outfall to Wittering Brook
    - extension of the A1 culvert at the Mill Stream
    - realignment and extension of the A47 Wansford Sluice
    - drainage ditch interceptors
    - new attenuation basins, with pollution control devices, to control discharges to local watercourses
- River Nene compensatory flood storage area
- works to alter or divert utilities infrastructure such as electricity lines, water pipelines and telecommunications lines
- temporary compounds, material storage areas and vehicle parking required during construction
- environmental mitigation measures.

3.5.2. A full description of the Scheme is provided in ES Chapter 2, The Proposed Scheme (**TR010039/APP/6.1**).

## 3.6. Key Objectives of the Scheme

3.6.1. The objectives of the Scheme are as follows. Table 3-1 provides commentary on how the Scheme meets the objectives:

- **Supporting economic growth**

The Scheme will provide additional capacity and improved journey times underpinning sustainable economic growth in the local and wider areas, supporting opportunities for employment and housing.

- **Making a safer network**
  The Scheme will improve safety and operational issues by increasing capacity and providing new junctions.

- **A more free-flowing network**
  The Scheme will result in minimal delays and a smooth flow of traffic. Journey times will providing benefits to travellers and those accessing local facilities.

- **An accessible and integrated network**
  The Scheme links into the SRN to the Midlands and North, supporting the wider economy. It provides safer routes, between villages and local facilities, for cyclists, pedestrians, and vulnerable users with new cycling and walking infrastructure.

Table 3-1 Consideration of the Scheme against the Scheme Objectives

| Objectives | How the Scheme Meets the Objectives |
|---|---|
| Supporting economic growth | The Scheme will provide additional capacity and improved journey times to encourage economic growth in the local area as well as across the A47 corridor between Peterborough and Norwich. This will help contribute to sustainable economic growth by supporting employment and residential development opportunities.<br>The Economic Case Overview (Section 5) provides more details of the economic benefits of the Scheme. |
| Making a safer network | The Scheme will improve safety and operational issues by upgrading to dual carriageway and providing free flow link roads.<br>The Transport Case for the Scheme (Section 4) of this report and the Transport Assessment (**TR010039/APP/7.3**) provide more detail on the safety benefits. |
| A more free-flowing network | The Scheme provides a new free-flow link road from the A1 southbound carriageway to the new A47 eastbound carriageway; a new link road for local accesses from the Wansford eastern roundabout; a new underpass connecting to Sacrewell Farm from the link road; a new slip road from the new A47 westbound carriageway into the filling station; a straight link road from the relocated A47 Sutton Heath roundabout to Sutton Heath Road and Langley Bush Road. |

| Objectives | How the Scheme Meets the Objectives |
|---|---|
| | Following construction of the Scheme, the operational modelling shows traffic operating with minimal delays, in approximate free-flow condition, supporting a smooth flow of traffic.<br>The Transport Case for the Scheme (Section 4) of this report and the Transport Assessment (**TR010039/APP/7.3**) provide more detail on traffic movements. |
| An accessible and integrated network | The A47 provides strategic road access to the Midlands and North. It plays a vital role in supporting the economy which relies on strong transport links in this area.<br>The Scheme design has considered local community access to the road network, providing safer routes between villages for cyclists, pedestrians, and vulnerable users where a need is identified.<br>Some sections of the existing A47 carriageway would be realigned and upgraded to include a shared footway/cycleway albeit with the new facilities segregated from the carriageways. The section of the existing A47 that would be closed to general traffic would be converted to a shared footway/cycleway and those sections to be de-trunked would be improved to include shared footway/cycleway facilities. A new underbridge at the Sacrewell Farm access and the proposed underpass at the discussed railway line would facilitate safe north to south movements across the new A47 alignment for users.<br>The provision of the various sections of new combined footway/cycleway would provide safer and more pleasant journeys for cyclists and pedestrians undertaking east to west trips between Wansford and Ailsworth<br>These aspects are set out in Section 12.10 of ES Chapter 12, Population and Human Health (**TR010039/APP/6.1**). |

## 3.7. National Networks National Policy Statement (NPS NN)

3.7.1. The NPS NN (designated on 14 January 2015) sets out the need, and Government's policies for delivering NSIP developments on the national road network. The compliance of the Scheme with the environmental requirements of the NPS NN is considered in detail in the NPS NN Accordance Tables (**TR010039/APP/7.2**). This section sets out how the Scheme is consistent with the aims of the NPS NN at a strategic level.

3.7.2. Paragraph 2.2 of the NPS NN recognises that there is a 'critical need' to improve the national road and rail networks to address road congestion and crowding on railways; to provide safe, expeditious and resilient networks that better support social and economic activity; and to provide a transport network that is capable of stimulating and supporting economic growth.

3.7.3. Paragraph 2.6 of the NPS NN confirms that the development of the national networks helps to support national and local economic growth, and that 'improved and new transport links can facilitate economic growth by bringing businesses closer to their workers, their markets and each other'.

3.7.4. The Government has concluded that at a strategic level there is a 'compelling need' for development on the national networks, as confirmed in paragraph 2.10 of the NPS NN. The same paragraph confirms that 'The Examining Authority and the SoS should therefore start their assessment of applications for infrastructure covered by this NPS on that basis'.

3.7.5. Identifying the need for development on the national road network, paragraph 2.13 of the NPS NN, confirms that the SRN provides critical links between cities and joins up communities, playing a vital role in people's journeys and drives prosperity by supporting new and existing development, encouraging trade and attracting investment. Paragraph 2.13 also confirms that a well-functioning SRN is 'critical in enabling safe and reliable journeys and the movement of goods in support of national and regional economies.'

3.7.6. Paragraph 2.22 of the NPS NN confirms the importance of improving the road network as without doing so 'it will be difficult to support further economic development, employment and housing and this will impede economic growth and reduce people's quality of life. The Government has therefore concluded that at a strategic level there is a compelling need for development of all national road networks.

3.7.7. The Government's policy of improving the existing national road network is set out in paragraph 2.23 of the NPS NN as including:

- *"junction improvements, new slip roads and upgraded technology to address congestion and improve performance and resilience at junctions which are a major source of congestion;*
- *implementing "smart motorways" to increase capacity and improve performance;*
- *improvements to trunk roads, in particular dualling of single carriageway strategic trunk roads and additional lanes on existing dual carriageways to increase capacity and to improve performance and resilience."*

3.7.8. The NPS NN sets out that, subject to the detailed policies and protections contained in the NPS and the legal constraints set out in the PA 2008, there is a 'presumption in favour' of granting development consent for national network NSIPs that fall within the need for infrastructure established in the NPS NN.

3.7.9. Paragraph 4.3 of the NPS NN states: *"in considering any proposed development, and in particular, when weighing its adverse impacts against its benefits, the Examining Authority and Secretary of State should take into account:*

- *its potential benefits, including the facilitation of economic development including job creation, housing and environmental improvement, and any long-term or wider benefits;*
- *its potential adverse effects, including any longer-term and cumulative adverse impacts, as well as measures to avoid, reduce or compensate for any adverse impacts."*

3.7.10. Table 3-2 illustrates how the Scheme will respond to this identified need by fulfilling the strategic objectives of the NPS NN.

Table 3-2 – Response to the NPS NN Strategic Objectives

| NPS NN Vision and Strategic Objectives (NPS NN Page 9) | Conformity of the Scheme |
|---|---|
| The Government will deliver national networks that meet the country's long-term needs; supporting a prosperous and competitive economy and improving overall quality of life, as part of a wider transport system. | The A47 trunk road forms part of the SRN and provides for a variety of local, medium and long-distance trips between the A1 and the eastern coastline. Within this context the Scheme will form part of the main arterial highway route connecting the A1 with Peterborough, Kings Lynn, Norwich and Great Yarmouth to the east. As well as directly benefiting users of the A47 between Wansford and Sutton, the Scheme will also benefit users of the wider A47 route. The A47 dualling will deliver a 'substantial improvement' to the network that will help the A47 better fulfil its strategic role in the national transport network into the foreseeable future.<br>Section 9 of the Transport Assessment (**TR010039/APP/7.3**) summarises the overall benefits of the Scheme which include: an improvement in traffic flows; more reliable journey times; and an improvement in the safety of this stretch of road. These improvements will contribute towards the attractiveness of areas along the A47 corridor for business which will help in promoting a competitive regional economy.<br>Peterborough is the closest city to the Scheme. It has a population of over 200,000 and is the 4th fastest growing city in the UK. Economic growth in the region has outpaced the east of England and the UK over the last decade, driven by innovation, business creation and growth in Cambridgeshire as well as by population growth, particularly young people. There are a significant number of both committed and proposed residential developments and land allocated for economic development purposes which will benefit |

| NPS NN Vision and Strategic Objectives (NPS NN Page 9) | Conformity of the Scheme |
|---|---|
| | from the inbuild road capacity of the Scheme necessary for inspiring confidence in investors.<br>Ease of access to work and local facilities contributes to quality of life, as does access to a choice of means of transport including walking and cycling. The Scheme incorporates safe, convenient, accessible and attractive walking and cycling routes. |
| Networks with the capacity, connectivity and resilience to support national and local economic activity and facilitate growth and create jobs | There is a strong drive in the Cambridgeshire and Peterborough Combined Authority Region for sustained economic growth over the coming years to capitalise on population growth in the area, build upon the region's strong innovation and business base, deliver homes and jobs and to ensure the ongoing devolution of power to the authority.<br>The dualling of the A47 and relief of the impacts of congestion on productivity, as part of a package of infrastructure measures, is critical to this delivery. The Local Transport Plan also emphasises the interrelationship between the region's transport objectives and the delivery of wider goals relating to the economy, society and environment.<br>Improving the capacity of the A47 at this location will enable network resilience over the longer term which is essential to attract inward investment, particularly where companies rely on fluid and fast transport links for both employee and trade journeys. |
| Networks which support and improve journey time quality, reliability and safety | The A47 Corridor is around 115 miles long; approximately 53% of which is single carriageway. The Wansford to Sutton section is one of the single carriageway stretches, affecting journey time and journey time reliability on the road.<br>This section of single carriageway has a poor safety record, with the A47 as a whole having an above average accident severity ratio.<br>The objectives of the Scheme include making a safer and more free-flowing network that is accessible and integrated into the wider SRN. This will be enabled through improving the stretch to dual carriageways standards with associated link roads.<br>The quality of journeys will be improved as a result of shorter queue duration and therefore less driver frustration. Section 9 of the Transport Assessment (**TR010039/APP/7.3**) summarises the positive impact of the Scheme on traffic conditions, walking/cycling, accidents and network resilience/journey time reliability respectively. |
| Networks which support the delivery of environmental | One of the Scheme objectives is to protect the environment as far as possible. The need to adapt to climate change has been taken into consideration as part of the Scheme assessment and design. Sections 14.8 and 14.9 of ES Chapter 14 Climate |

| NPS NN Vision and Strategic Objectives (NPS NN Page 9) | Conformity of the Scheme |
|---|---|
| goals and move to a low carbon economy | (**TR010039/APP/6.1**) assess the impact of the Scheme and set out mitigation to minimise carbon through design and construction. It is expected that the recent UK government announcement on ending the sale of new petrol and diesel vehicles by 2030 will further reduce the Scheme's end user carbon emissions. However, when compared with total UK carbon budget figures, the increase in emissions resulting from the Scheme are relatively minor, e.g. 0.001%. |
| Networks which join up our communities and link effectively to each other | One of the Scheme's objectives is the creation of an accessible and integrated network. The Scheme will reduce journey times and facilitate free flowing links into the SRN to the Midlands and North. It will support the wider economy as well as providing safer routes, between villages and local facilities, for cyclists, pedestrians, and vulnerable users. In this respect it will help to join up communities<br>The closest local facilities in the vicinity of the Scheme are in Wansford or on the outskirts of Peterborough. Section 7.7 of the Transport Assessment (**TR010039/APP/7.3**) sets out the impact of the Scheme on journey times. Time savings will apply to those accessing the local facilities in Wansford or the schools, healthcare facilities and shops further afield in Peterborough.<br>The Scheme will provide a new cycle crossing on the A47 west of Wansford western roundabout; a new shared access road and underpass to Sacrewell Farm; a network of shared footpath and cycleways adjacent to the side roads; a cohesive east-west route between Wansford and Sutton for pedestrians and cyclists; a continuation of the all-user route from Peterborough Road to the Wansford Picnic area; a new underpass at Sutton heath Road providing a traffic free crossing of the A47.<br>Providing a network with greater capacity and journey time reliability will also help join up communities by improving the experience of local users of the A47.<br>Table 12.18 in ES Chapter 12: Population and Human Health, (**TR010039/APP/6.1**) states that the improvement of journey times due to the Scheme would result in reduced severance and improved access to healthcare, community recreation and educational facilities in Wansford and further afield. Use of the de-trunked existing A47 would also improve access to local facilities for residents due to reduced traffic congestion as a result of the Scheme. |

# 4. Transport Case for the Scheme

## 4.1. Overview of Transport Policy

4.1.1. This section outlines the national, regional and local transport related policies that are relevant to the Scheme. Full details of the Scheme's accordance with all relevant national and local policies, local transport plans and associated supplementary plans, particularly the National Policy Statement for National Networks (NPS NN), is provided in Chapter 6 of this document and in the NPS NN Accordance Tables (**TR010039/APP/7.2**).

## 4.2. National Policy

### *The National Networks National Policy Statement*

4.2.1. The NPS NN sets out the need for, and the Government's policies to deliver, the development of NSIPs on the national road network in England. It also states the primary basis for making decisions of development consent for NSIPs in England. The Government recognises in the Appraisal of Sustainability accompanying the NPS NN that some developments may have adverse local impacts on noise, emissions, landscape and visual amenity, biodiversity, cultural heritage and water resources. The significance of these effects and the effectiveness of mitigation is uncertain at the strategic and non-locational specific level of the NPS NN. Therefore, while applicants should deliver developments in accordance with government policy and in an environmentally sensitive way, including considering opportunities to deliver environmental benefits, some adverse local effects of development may remain.

4.2.2. Outside the NSIP regime, government policy is to bring forward targeted works to address existing environmental problems on the strategic road network (SRN) and improve the performance of the network.

4.2.3. Where appropriate, mitigation of any unavoidable impacts on the environment will be undertaken as set out in the ES (**TR010039/APP/6.1**) and where possible enhancements will be made.

### *The National Planning Policy Framework*

4.2.4. While the overall strategic aims of the National Planning Policy Framework (NPPF) and the NPS are consistent, the NPPF is an important and relevant consideration in decisions on nationally significant infrastructure projects, but only to the extent relevant to that project. The NPS NN provides transport policy which will guide individual development brought under it. It also provides guidance on good scheme design, as well as the treatment of environmental impacts. Both

documents seek to achieve sustainable development and recognise that different approaches and measures will be necessary to achieve this.

4.2.5. The NPPF states that the purpose of the planning system is to contribute to the achievement of sustainable development. In this regard there are three interdependent overarching objectives; economic, social and environmental which need to be pursued in mutually supportive ways with the aim of securing net gains across each. Accordingly, the NPPF states a *"presumption in favour of sustainable development"* (NPPF Paragraph 10).

### *Road Investment Strategy 2*

4.2.6. In April 2020, the Department of Transport (DfT) published the Road Investment Strategy 2 (RIS2). The RIS2 sets out a list of schemes that are to be developed by Highways England in the period 2020-2025.

4.2.7. Highways England, as the strategic highways company and appointed by the Secretary of State must, in exercising its functions and complying with its legal duties and other obligations, act in a manner which it considers best calculated to, among others:

- minimise the environmental impacts of operating, maintaining and improving its network and seek to protect and enhance the quality of the surrounding environment
- conform to the principles of sustainable development.

4.2.8. RIS 2 (page 100[11]) introduces the schemes in the East of England committed in Road Programme 2. The RIS 2 (page 101) includes the *"A47 Wansford to Sutton – dualling of the A47 between the A1 and the dual carriageway section west of Peterborough"*.

### *The Strategic Road Network and the Delivery of Sustainable Development (DfT Circular 02/2013)*

4.2.9. This Circular explains how the Highways Agency (Highways England) will engage with the planning system, communities and the development industry to deliver sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the SRN.

[11] Road Investment Strategy 2
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/872252/road-investment-strategy-2-2020-2025.pdf

4.2.10. The document states that Highways England will work with local authorities to influence Local Plan decisions that may affect the SRN.

## 4.3. Highways England Policy

*The Highways England License Document (2015)*

4.3.1. The Highways England Licence (2015) sets out key requirements which must be complied with by the Licence holder as well as statutory guidance. In exercising its functions and complying with its legal duties and obligations, the Licence holder must act in such a manner which it considers best calculated to:

- ensure the effective operation of the network
- ensure the maintenance, resilience, renewal, and replacement of the network
- ensure the improvement, enhancement and long-term development of the network
- ensure efficiency and value for money
- protect and improve the safety of the network
- co-operate with other persons or organisations for the purposes of coordinating day-to-day operations and long-term planning
- minimise the environmental impacts of operating, maintaining and improving its network and seek to protect and enhance the quality of the surrounding environment
- conform to the principles of sustainable development
- in complying with section 4.2(g) and its general duty under section 5(2) of the Infrastructure Act 2015 the Licence holder must have regard for the environment
- ensure that protecting and enhancing the environment is embedded into its business decision-making processes and is considered at all levels of operations
- ensure the best practicable environmental outcomes across its activities, while working in the context of sustainable development and delivering value for money

- consider the cumulative environmental impact of its activities across its network and identify holistic approaches to mitigate such impacts and improve environmental performance
- where appropriate, work with others to develop solutions that can provide increased environmental benefits over those that the Licence holder can achieve alone, where this delivers value for money
- calculate and consider the carbon impact of road projects and factor carbon into design decisions and seek to minimise carbon emissions and other greenhouse gases from its operations
- adapt its network to operate in a changing climate, including assessing, managing and mitigating the potential risks posed by climate change to the operation, maintenance and improvement of the network
- develop approaches to the construction, maintenance and operation of the Licence holder's network that are consistent with the government's plans for a low carbon future
- take opportunities to influence road users to reduce the greenhouse gas emissions from their journey choices.

*The Highways England Delivery Plan 2020-2025*

4.3.2. The Highways England Delivery Plan sets out Highways England's long-term plans for the modernisation and renewal of the road network over the five-year period from 2020 to 2025. It provides a brief outline of what Highways England have delivered during the previous five years and sets out a clear programme of activity for the first year, as well as a proposed pipeline of future schemes.

4.3.3. In year one, work will be finalized across four schemes to provide dualling and junction upgrades on the A47 between Peterborough and Norwich.

4.3.4. The Wansford to Sutton Scheme is listed within the Regional Investment Programme which is used to deliver enhancement schemes. The Schemes along the A47 are focussed on tackling regional problems around safety, congestion and capacity.

4.3.5. Annex B of the Plan sets out the six key performance outcomes agreed with the DfT for this second road period including:

- improving safety for all
- providing fast and reliable journeys

- a well-maintained and resilient network
- delivering better environmental outcomes
- meeting the needs of all users
- achieving efficient delivery.

4.3.6. The Funding Statement (**TR010038/APP/4.2**) presents details of the designated funds for delivery of the Scheme under this Plan.

## 4.4. Sub-Regional Transport Policy

*Cambridgeshire and Peterborough Independent Economic Review – September 2018*

4.4.1. The Economic Review is a product of the Cambridgeshire and Peterborough Independent Economic Commission which, amongst other things, will inform choices on policy priorities and strategic investment and provide understanding of the future drivers for change in the economy.

4.4.2. In relation to the major transport infrastructure programmes, the Review states *"the growth seen in Cambridgeshire and South Cambridgeshire seems very unlikely to be sustained in the future without further and significant investment in infrastructure. Businesses are already noting this as a major concern."*

4.4.3. Key recommendation #7 states: *"a package of transport and other infrastructure projects to alleviate the growing pains of Greater Cambridge should be considered the single most important infrastructure priority facing the Combined Authority in the short to medium term"*. One of the projects listed as being likely to further this aim is the full dualling of the A47.

*Cambridgeshire and Peterborough Strategic Spatial Framework (non-statutory) – Towards a Sustainable Growth Strategy to 2050*

4.4.4. The Strategic Spatial Framework defines the region's priorities for sustainable growth and includes wider actions to support the sustainable delivery of over 100,000 new homes and over 90,000 additional jobs in Combined Authority plans and Local Plans.

4.4.5. It is noted that a number of key routes within the region suffer severe congestion at peak times. The A47 to Norwich is one of the strategic transport corridors listed as being critical to the area's economic success and growth. Planning for, and investment in, strategic transport infrastructure should therefore be prioritized to ensure growth and regeneration is properly serviced and the effects of congestion on productivity are addressed. Further, Peterborough is a strategic location where

urban extensions at Hampton, Great Haddon and Norwood are anticipated to add over 11,000 new homes by 2036. Travel demand is expected to increase by 30% up to 2031 in Peterborough. The A47 dualling is listed as a strategic transport project.

*The Cambridgeshire & Peterborough Local Transport Plan February 2020*

4.4.6. The Cambridgeshire & Peterborough Local Transport Plan sets out the policies and strategies needed to secure growth and ensure that planned large-scale development can take place in the county in a sustainable way.

4.4.7. The interrelationship between the Plan's transport objectives and the delivery of wider goals relating to the economy, society and environment is emphasised in terms of inter alia:

- supporting new housing to accommodate a growing population and workforce
- sustainably connecting communities to facilitate rapid access to employment
- sustainable connections for business and tourism to main transport hubs
- building a resilient and adaptive transport network and improving journey time reliability
- achieving zero transport related fatalities or serious injuries
- improving air quality through new transport initiatives
- ensuring transport proposals protect and enhance the natural, historic and built environments
- reducing emissions to minimise the impact of transport and travel on climate change.

4.4.8. The Plan acknowledges that there will be significant growth in the number of commuting trips to the west of Peterborough leading to a rise in congestion by 2041. In this regard, paragraph 3.9 states *"there is a need to provide additional. Targeted highway capacity to support Peterborough's growth".* The Scheme is specifically mentioned in paragraph 3.24 as key to improving access to Peterborough as a business destination by reducing journey times. The Scheme would also *"reduce congestion along a key strategic route from Peterborough to the A1 corridor, and the wider north of England, as well as improving road safety along a route with a history of fatal and serious collisions."*

## 4.5. Local Policy

### *Peterborough Local Plan July 2019*

4.5.1. Peterborough Local Plan contains planning policies for the growth and regeneration of Peterborough and the surrounding villages up to 2036. The Plan notes that in employment terms the important characteristics of Peterborough are the concentration of companies engaged in environment-related activities and, also, the significant pressure for development to serve the logistics industry, taking advantage of the area's prime location beside the (north-south) A1 and (east-west) A47. With unemployment slightly higher than average nationally, there is a need to identify land to meet future employment needs.

4.5.2. The total housing requirement for Peterborough is over 17,000 dwellings from 2018 to 2036, 60% of which will be contained in urban extensions to Peterborough and which will contribute to the requirement for increased road capacity.

4.5.3. Land is safeguarded for future key infrastructure adjacent to the roundabouts at the A47/A1 junction under Policy LP15 of the Plan.

### *Policy Summary*

4.5.4. The aims of the Scheme accord with the Government's policies and illustrate the need for the Scheme on a national level. The Government has highlighted the express need for further growth and improvements to the national networks within the NPS NN. The RIS 2, which explores these needs in further detail, supports the A47 Scheme as a required improvement to the SRN.

4.5.5. The Scheme complies with national planning policy within the NPS NN and NPPF. It will reduce congestion-related delay, improve journey time reliability, increase the overall capacity of the A47 and improve road safety and traffic flow. These improvements mean that the Scheme will contribute towards making the eastern region more attractive for business and will help in promoting a competitive regional economy.

4.5.6. The Scheme supports the economic growth objectives of the various sub-regional policy documents and the Peterborough Local Plan. It will assist in delivering the required and supported improvements to the A47 which are key to safe, fluid connectivity and facilitating new housing and business developments.

4.5.7. The Scheme also accords with the policies of the Peterborough Local Plan in contributing to key regional infrastructure needed to support economic and housing growth.

## 4.6. Baseline Data and Development of Model

4.6.1. This section provides a summary of the A47 Wansford to Sutton modelling assessment as well as the supporting baseline data collection. Full details are within the Transport Assessment (**TR010039/APP/7.3**). The baseline dataset includes the collection of volumetric traffic count data, network data and vehicle journey time data. This data is used in the model development process to calibrate and validate the baseline providing a stable basis to undertake the future year assessment of the Scheme.

### *Baseline Data*

4.6.2. The baseline data collection used for the assessment of the Scheme and the development of the highway assignment and microsimulation models includes the collection of volumetric traffic count data, network data and vehicle journey time data.

4.6.3. This data has been used in the model development process to calibrate and validate the baseline, providing a stable basis to undertake the future year assessment of the Scheme.

4.6.4. In addition to the traffic data collection, reported accident data information has been sourced to inform the road safety assessment. Public transport, walking and cycle information has also been sourced to inform the assessment of the WCH impacts.

### *Modelling*

4.6.5. The framework of the modelling assessment has been developed to enable the comparative analysis of the existing single carriageway section and the proposed dual carriage way improvements against the Scheme objectives.

4.6.6. The modelling assessment comprises of a strategic model. The model utilised for the assessment of the scheme is called the Wansford Traffic Model (WTM). The base model was developed in line with the DfT's Transport Appraisal Guidance (TAG). A local VISSIM model[12], including the Wansford village, has been utilised to assess the Scheme's operational performance in the forecast year scenarios.

4.6.7. Together these models have been used to evaluate current and future conditions along the A47 single carriageway section and the immediate surrounding road network. The strategic model has been used to provide the initial assessment of any strategic implications of the Scheme, as well as the basis for forecasting future

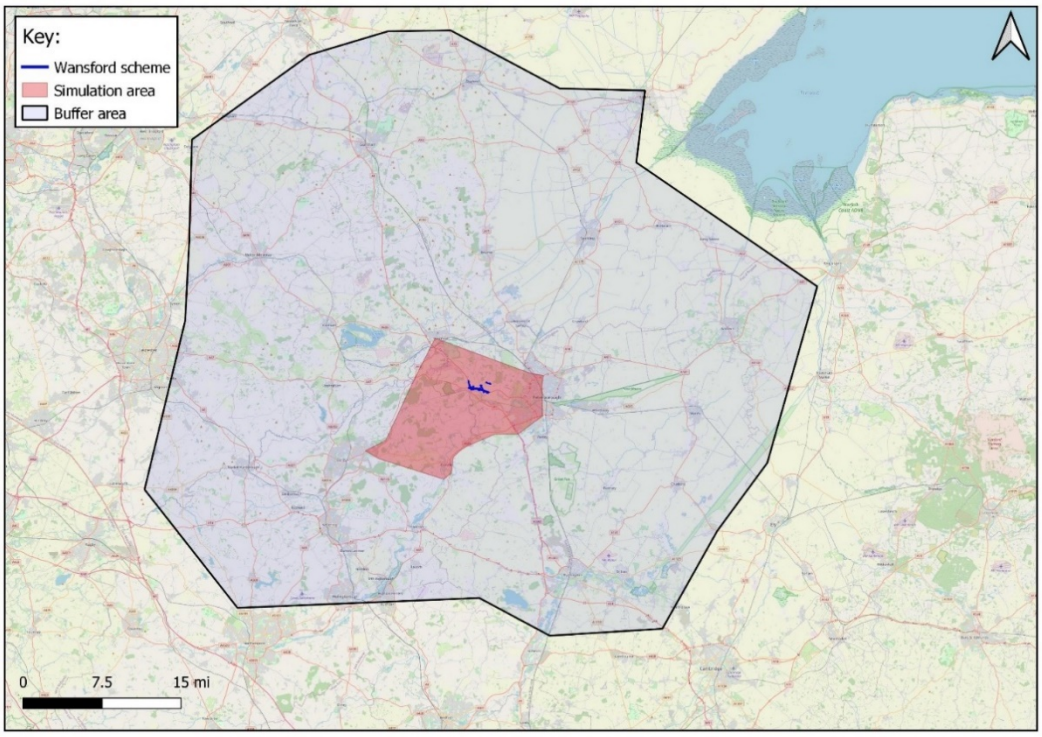
[12] VISSIM is a micro-simulation modelling software developed by the PTV Group, Germany: https://www.ptvgroup.com/en/solutions/products/ptv-vissim/

year traffic demand matrices. The purpose of the local VISSIM model is to examine the operational performance of the Scheme at the A1/A47 western roundabout as well as the local roads in Wansford village.

4.6.8. Figure 4-1 shows the extent of the WTM used for the assessment of the Scheme. The WTM covers the strategic traffic movements across the A47 corridor between Wansford and Peterborough. Within the Scheme's vicinity, the model contains a detailed zoning and network resolution and has been calibrated to a high level of accuracy.

4.6.9. The WTM has been calibrated to represent a 2015 base year utilising the data collected as part of the Scheme assessment as well as network data from the Peterborough Transport Model (PTM) and mobile phone demand data from South East Regional Transport Model (SERTM).

Figure 4-1 Extent of the WTM Study Area




4.6.10. Key features of the WTM include:

- The model contains AM and PM peak hours (07:30 to 08:30 and 16:30 to 17:30) and an IP hour (13:00 to 14:00) time segments
- The highway trip purposes comprised of 5 user groups: car employer business, car commute, car other, light goods vehicles (LGVs) and heavy goods vehicles (HGVs).

4.6.11. Overall, it is considered that the WTM demonstrates a good representation of traffic behaviour in the Scheme study area and provides a robust basis for the future year forecast assessment of the Scheme.

4.6.12. The traffic forecasts are dependent on household and employment growth, which were derived from both local and national growth forecasts. The local authority forecasts on development growth are derived from the uncertainty log which details the local authority development schemes in regions which are both nearby and significant to the model. This includes assumptions on local uncertainty, which is dependent on whether developments or other planned transport schemes close to the Scheme area are proposed. A core scenario is stated which represents the most unbiased and realistic set of assumptions which is a robust and evidence-based basis for decision-making. The forecasting approach involves creating initial reference case travel demand forecasts which reflect changes in car ownership, population, employment and other demographic and economic factors. However, traffic growth resulting from other sources, such as changes in generalised costs due to traffic conditions, are not included in the reference case forecasts. These impacts are evaluated through a variable demand model (VDM).

4.6.13. Based on this approach VDM is applied to derive the demand impacts of both the Do-Minimum (DM) as well as the Do-Something (DS)). The Do-Minimum represents a without Scheme scenario, it includes all the changes unrelated to the Scheme which are considered more than likely to be in place prior to the respective future year. The Do-Something scenario includes the Scheme.

4.6.14. The base and forecast years are as follows:

- 2015 Base Year
- 2025 Opening Year
- 2040 Design Year (15 years after opening).

4.6.15. In both the future year scenarios, 2025 and 2040, DM and a DS network scenario have been modelled, hence the comparison of DM and DS provides the assessment of the Scheme's impacts in a given forecast year.

4.6.16. Full details of the modelling are provided in Section 6 of the Transport Assessment (**TR010039/APP/7.3**).

## 4.7. Transport Impacts

*Current Network Performance*

4.7.1. In the current situation, assessed as part of the base year model, the single carriageway section of the A47 between Wansford and Sutton acts as a bottleneck, resulting in congestion and leading to longer and unreliable journey times.

4.7.2. Observed traffic data indicates that 2015 base year traffic flows are approaching the reasonable capacity limitations of this existing highway section. Traffic modelling analysis indicates the Scheme section is operating just below its full capacity, but over the 85% threshold, during the AM peak in the eastbound direction (96-99%). On average vehicles experience around 0.7 mins of delay due to the traffic congestion along the A47 single carriageway mainline link between Sutton Heath Road and The Drift. Sutton Heath Road is over capacity in the AM peak base year model with a volume over capacity ratios (V/C) greater than 100%. Vehicles also experience delays on the A1 off slip approach to the A47/A1 Eastern roundabout of around 0.3 mins (91% V/C) in the AM peak.

4.7.3. In general, in the PM the A47 is operating under the threshold of 85% V/C ratio with reduced levels of delay compared to the AM peak. Table 7-4 in the Transport Assessment (**TR010039/APP/7.3**) demonstrates the 2015 Base year traffic delay and V/C results.

*Future Network Performance*

4.7.4. Analysis of the DM (V/C %) ratios results across the A47 mainline indicate that the section is operating over the advisable (85%) capacity in 2025 in the AM peak in the eastbound direction and the PM peak in the westbound direction.

4.7.5. In 2040, without the Scheme, along the A47 mainline, traffic would increase by around 33% in the AM peak and 21% in the PM peak in the westbound direction. Eastbound, traffic would decrease by -5% in the AM peak but increase by 36% in the PM peak (Table 7-5 in the Transport Assessment (**TR010040/APP/7.3**)). The eastbound decrease in the AM peak is the result of traffic growth being constrained by the A47 eastbound approach to the A47/A1 eastern roundabout.

4.7.6. The increase in traffic flows along the A47 correlates with an increase in delays and V/C ratios. Delays along the A47 are forecasted to increase by approximately 0.1 to 0.7 mins by 2040 without the Scheme. Furthermore, the deterioration in average V/C ratio across the A47 mainline from the A1 to Sutton roundabout, from 74% to 82% AM peak and from 85% to 90% PM peak west bound and from 84% to 95% AM peak and from 75% to 82% PM peak east bound indicates that the link

is operating close to or over the advisable capacity in both directions in both periods (Table 7-6 in the Transport Assessment (**TR010039/APP/7.3**)).

4.7.7. Delays on the A47 western approach to the A47/A11 eastern roundabout (in the eastbound direction) are forecasted to increase to 2.9 minutes in 2040 (V\C 106%) (Table 7-6 in the Transport Assessment (**TR010039/APP/7.3**)).

*Impact of the Scheme on link flows and delays*

4.7.8. The Scheme has been assessed, including alterations to the operation of the side and link roads and has been shown to have the following impacts on link flows.

4.7.9. Between the Scheme A1 eastbound off-slip and the existing location of Sutton Roundabout, traffic flows would increase in the AM peak by up to 41% in 2025 and 46% in 2040 compared to the DM. In particular large percentage increases in growth can be seen along the A47 eastbound direction in the AM peak due to the increase in capacity provided by the A47 dual carriageway and the A1 eastbound off-slip. Between the A1/A47 eastern roundabout and the Scheme A1 eastbound off-slip, eastbound traffic is forecasted to decrease (2025: -25% AM, -33% PM. 2040: -18% AM, -31% PM). This is due to traffic diverting on to the A1 eastbound off-slip in the DS scenario.

4.7.10. Traffic growth is also present on Sutton Heath Road. In the Scheme scenario the network upgrades provide additional capacity on the A47 side roads as they are connected to the relocated Sutton Roundabout.

4.7.11. With the Scheme, delays across the A47 mainline section reduce to around 0.1 minutes while V/C ratios decrease to within the acceptable range of less than 85%. This is with the exception of the A47 eastbound in the AM peak between Sacrewell farm and the relocated Sutton Roundabout, where in 2040, with or without the Scheme, 2040, with or without the Scheme, the DM and DS scenarios are slightly over the 85% threshold (DM: 89% VC, Delay 0.3. DS: 89% VC, Delay 0.1). Overall, the introduction of the Scheme has removed the majority of the overcapacity delays across the A47 corridor.

4.7.12. Delays on the Sutton Heath road joining the A47, via the relocated Sutton Roundabout, in the AM peak have also been reduced by the Scheme (2025: DM 1.6, DS 0.6. 2040: 2.6, DS 1.4).

4.7.13. The A1/A47 eastern roundabout link delays have reduced on all approach arms due to the Scheme's capacity enhancements (2040 DS delays: 0.1 minutes, 2040 DM delays 1.4 to 2.7 minutes).

4.7.14. There is a pre-existing issue at the A1/A47 roundabouts (mainly the western roundabout), this will be raised with the Highways England Operations team for

consideration as a future improvement project during the identification and prioritisation process for future roads periods.

*The Impact of the Scheme on journey times and congestion*

4.7.15. Table 7-9 of the Transport Assessment (**TR010039/APP/7.3**) shows the comparative journey times between the Do-Something and Do-Minimum scenarios in both 2025 and 2040. The journey time results along the A47 between the A1/A47 western roundabout and Ailsworth show a travel time saving of approximately 1.5 minutes in 2025 and 2 minutes 2040 in the eastbound direction in the AM peak, when compared to the Do-Minimum in those years. This represents approximately 17-20% reduction in the total journey time across the route.

4.7.16. In the westbound direction along the A47 there is a saving of approximately 1 minute in the 2040 AM peak (-22%) but in the 2040 PM peak there is a minimal saving of around 0.2minutes (-3%). This minimal time saving in the PM peak is mainly due to delays at the exit from the A1/A47 eastern roundabout in the DS scenario which is caused by traffic blocking back across the bridge from the A1/A47 western roundabout.

4.7.17. The rest of the peaks also experience an average saving of approximately 0.5-1.0 minutes in both directions apart from 2040 in the PM peak in the westbound direction which shows a saving of 0.2 minutes.

4.7.18. Along the A1 south and A47 route (between A47 Junction 18 and A1 Junction 17) journey times decrease by up to 18% and 23% in 2025 and 2040 respectively. The largest journey time savings are generated in 2040 in the AM peak with reductions of up to 4.7 mins in the eastbound direction and 2.8 in the westbound direction.

4.7.19. Between the A47 Junction 18 and A1 Wothorpe Junction (the A1 (north) - A47 route), journey times decrease by around 1.5 minutes in the eastbound direction in the AM peak. The rest of the time periods also experience an average saving of approximately 0.5-1.0 minutes in both directions apart from 2040 in the PM peak in the westbound direction which shows a saving of 0.2 minutes.

4.7.20. Overall, across all assessed routes the Do-Something journey times are reduced to levels below the Do Minimum scenario. These journey time savings are a result of upgrading the A47 to dual carriageway and to the improvements to the A1/A47 junction in the Do Something scenario.

### *Impact of the Scheme on the Local Road Network*

4.7.21. The results of the model indicate that the Scheme causes a relatively minor impact on traffic flows across the local road network. Sutton Heath Road (7 & 8) experiences the largest traffic flow increase, across the local road network, of around 50-180 passenger car units (PCUs). Along Peterborough Road in Wansford (5) the Scheme creates an increase in traffic of approximately 170 PCUs in the 2040 AM peak and a minimal increase in flow in the PM peak. The increase in AM peak traffic on Peterborough Road is partly due to the reduction in traffic along Old North Road from the 2015 base. Traffic flows along The Drift (9), south of the relocated Sutton roundabout, are forecasted to increase by around 110-150 PCUs depending on direction and time period, this is due to traffic being diverted to access the relocated Sutton Roundabout.

4.7.22. Network wide average speeds have been extracted from the model for the wider area. The SATURN[13] 2025 and 2040 average network speeds represent an average of all trips travelling across every link on the entire model simulation network for the specified time periods. In both 2025 and 2040, there is a relative improvement in Do-Something speeds, within the simulation area, of up to 4% (2040 DS – DM AM: 3.5% IP: 3.3% PM: 3.9%) (IP hour is 13:00 to 14:00). Overall, this indicates that the Scheme will have a positive impact in terms of improving the operation of the wider network. The wider network statistics are calculated over the entire Wansford simulation area. Therefore, deriving a network wide increase in average speeds of around 1-4%, from the implementation of the Scheme, is considered to represent a sizeable improvement in the overall operation of the network.

### *Impact of the Scheme on Upton*

4.7.23. The residential village of Upton is located beyond the DCO boundary, however it has been considered as part of the assessments as journey length changes are predicted to residents of this village. The vehicular access and egress to the A47 for residents of Upton and for large farm equipment and lorries to farm infrastructure would be a single track lane between Upton and Langley Bush Road. This road is already used by large farm equipment and general traffic.

4.7.24. Access to residential properties on Church Walk in Upton would be altered as a result of the Scheme. Due to the stopping up of Upton Road onto the A47, those accessing the A47 from these residential properties would be required to travel west onto Langley Bush Road, then south on the proposed link road from Sutton Health Road. There are 12 residential properties located on Church Walk which would experience a journey length increase of between 0.9km (the property

[13] Simulation and Assignment of Traffic in Urban Road Network (SATURN): https://saturnsoftware2.co.uk/

located to the west of Church Walk) and 1.1km (the property located to the east of Church Walk). Chapter 12 Population and Human Health of the ES (**TR010039/APP/6.1**) assesses the effect as Slight adverse and therefore not significant in EIA terms.

4.7.25. There are also potential moderate adverse effects on Lower Lodge Farm, on Upton Road due to an increase in a journey length increase of 2.9km, and slight adverse effects at one local business due to a journey length increase of 0.8km.

4.7.26. Table 7-12 of the Transport Assessment (**TR010039/APP/7.3**) shows the total two-way traffic flow into Upton village on Upton Road (by the junction with the A47) and Main Road (by the junction with Langley Bush Road). The table shows the change in the number of trips on these roads in the different forecast scenarios. The closure of Upton Road diverts traffic on to Upton Drift (also known as Main Road). However, the overall level of traffic approximately remains the same. The relatively small increase in peak hour traffic on Upton Drift has no adverse impacts on the operation of the Upton Drift / Langley Bush Road junction.

4.7.27. Although there will only be a relatively small increase in traffic, the design has been amended to include passing places of a size suitable for large vehicles and some limited widening to ensure a minimum carriageway width of 3.5m. It is considered that the proposals included within the Scheme are proportionate to the effects that will be experienced.

*The Impact of the Scheme on Walking, Cycling and Horse riding*

4.7.28. The Scheme provides support to walking, cycling, horse riding and vulnerable users by incorporating safe, convenient, accessible and attractive routes for pedestrians and cyclists to improve connectivity in areas local to the Scheme. The proposed improvements are shown in Figure 7-14 and summarised in Table 7-14 of the Transport Assessment (**TR010039/APP/7.3**). In particular, the Scheme will provide:

- a new underbridge at the Sacrewell Farm access and a new underpass at the former railway line connecting to Sutton Heath Road, which would facilitate safe north to south movements across the new A47 alignment for users
- approximately 3.4km of new infrastructure for pedestrians, cyclists and equestrians with safer crossing points between the north and south of the A47 alignment. These include:
    - 535m of an all-user route between the existing all user route at Wansford to the new access road for Sacrewell Farm including

a 160m section which is a replacement all-user route for permissive footpath Wansford Hereward Permissive 3 (ID 787)

- 2.4km of shared footway/cycleway between Sacrewell Farm access road and Peterborough Road (Ailsworth) adjacent to but segregated from the new A47 alignment
- 240m of shared footway/cycleway along The Drift, closed to vehicular traffic
- 240m of shared footway/cycleway utilising the former railway line allowing connections to the realigned Sutton Heath Road to the north
- 81m of new PRoW footpath to replace a 30m section of PRoW footpath lost to the Scheme.

4.7.29. There will be three points at which pedestrians and cyclists can cross the A47 alignment:

- at the A47/A1 western roundabout on the A47 western arm and A6118 Old North Road southern arm, allowing cyclists to connect between the existing A47 and the on-road route cycle route to the west and the signed route through Wansford. Access to the existing underpass will also be provided but cyclists are required to dismount
- an underbridge at the Sacrewell Farm access road
- an underpass that utilises the former railway line allowing access between Sutton Heath Road and the shared footway/cycleway running east to west to the south of the new A47 alignment.

*Impact of the Scheme on Public Transport*

4.7.30. There are no proposed alterations to rail public transport services as part of the Scheme, therefore any impacts are judged to be insignificant.

4.7.31. No alterations to bus public transport services are included in the Scheme. It is considered the Scheme's impact on bus transport users will be beneficial due to the congestion relief provided for all highway traffic.

*The Impact of the Scheme on Accidents*

4.7.32. The Scheme is designed to generate a reduction in accidents by upgrading the A47 to dual carriageway. The Scheme will also generate road safety benefits from the new scheme A1 eastbound off-bound slip, which reduces the interactions

between the A47 and the A1 at the eastern roundabout. Furthermore, the Scheme removes the A47 mainline intersections with Sacrewell Farm Road. Therefore, the removal of these intersections improves road safety by reducing the number of conflicting movements across the on the A1\A47 eastern roundabout and across the A47 corridor.

4.7.33. Cost and Benefit to Accidents – Light Touch (COBA-LT) analysis indicates that, over a 60-year timeframe the improvements will save a total of 265 casualties and 42 KSIs (killed or seriously injured) (Table 7-15 of the Transport Assessment (**TR010039/APP/7.3**)).

*The Impact of the Scheme on Network Resilience and Journey Time Reliability*

4.7.34. The implementation of the Scheme will improve reliability and network resilience as dual carriageways are more reliable than single carriageways. Road capacity is increased, delays are shortened, and accidents (and their impacts) are reduced, all of which contribute to improved reliability. This will then lead to increased network resilience. In addition to this the Scheme provides additional route options, which avoid the A47, for traffic travelling to\from Sacrewell Farm.

## 4.8. Walking, Cycling and Horse-riding (WCH) Assessment

4.8.1. Minimising the impacts of the Scheme on WCH is an integral part of Scheme design and this has been achieved by maintaining connectivity and incorporating both new and improved facilities to enhance existing networks. The proposed WCH strategy aligns with the wider objectives of the Scheme and with local transport policy objectives in respect of the development of an accessible and integrated network which provides safer routes between local communities and promotes the use of active travel modes.

4.8.2. In developing the WCH strategy, consultation was undertaken with relevant officers at Cambridgeshire and Peterborough Combined Authority to ensure that accessibility issues local to the Scheme were clearly understood. The existing WCH facilities to be removed by the Scheme are to be replaced with enhanced facilities that better reflect the accessibility needs of the area.

4.8.3. A WCH assessment has been undertaken in line with Document GG 142[14] of the Design Manual for Roads and Bridges (DMRB) which sets out the WCH assessment and review process for highway schemes on motorways and all-purpose trunk roads. Details are within ES Chapter 12 Population and Human Health (**TR010039/APP/6.1**).

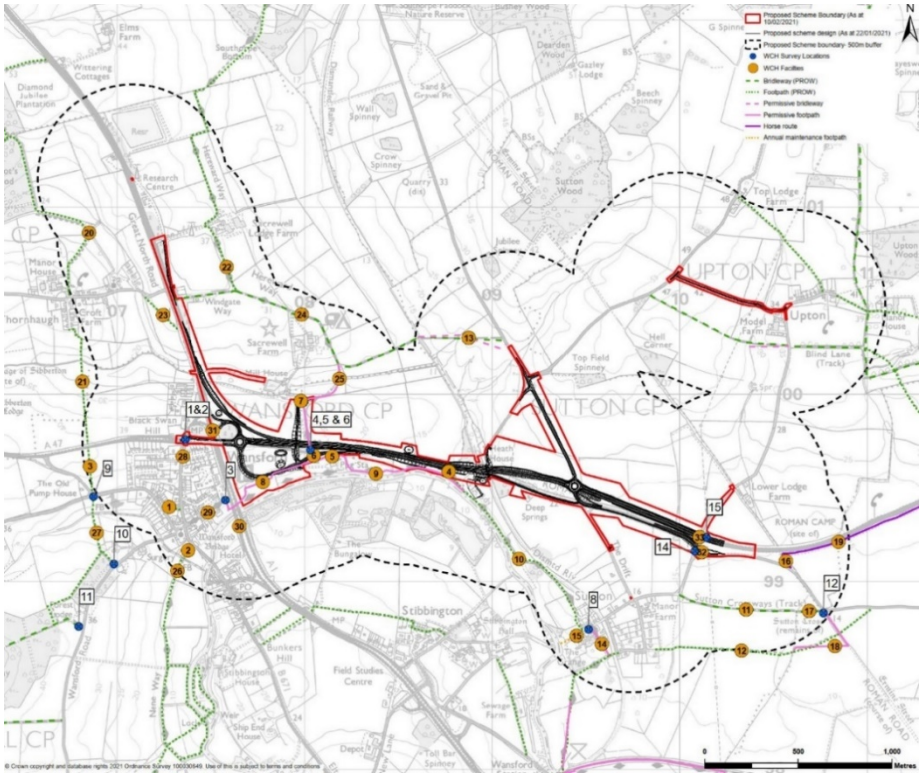
[14]GG 142 https://www.standardsforhighways.co.uk/dmrb/search/5f33456d-32f9-4822-abf6-e12510f5c8dc

### *Baseline Conditions*

*4.8.4.* The Scheme fits within the definition of a large scheme as given in Table 2.2.1N of GG 142, *"New motorway or all-purpose trunk road construction or major modification of an existing trunk road or motorway junction".*

4.8.5. The walking, cycling and horse-riding routes in the vicinity of the Scheme include PRoW (footpaths and bridleways), permissive routes and footways provided as part of the highway network. These have been identified using Peterborough Council's interactive PRoW mapping tool. Table 12.5 of ES Chapter 12 Population and Human Health (**TR010039/APP/6.1**) lists the WCH facilities in the study area. The locations of these facilities are shown in Figure 4.1.

Figure 4.1: Location of PRoW, permissive routes and other facilities




### *Walking, cycling and horse-riding (WCH) surveys*

4.8.6. To provide an indication of current usage of the PRoW and permissive routes and for key locations where WCH activity could occur on the local highways, WCH surveys were undertaken at 12 locations in the vicinity of the Scheme shown (and listed) in Figure 5-7 of the Transport Assessment (**TR010039/APP/7.3**).

4.8.7. The surveys were carried out between 7am and 7pm for seven consecutive days between Saturday 26 May and Friday 1 June 2018 using closed circuit television

(CCTV) video cameras. In the main, the weather during the surveys was dry and bright.

4.8.8. There was a wide variance in the number of pedestrians, cyclists and horse riders at each of the survey sites. Over 3,000 user movements were observed over the 7-day survey period.

4.8.9. No movements were observed at any time throughout the survey for users classed as 'Pedestrian & Buggy' or 'Wheelchair'.

4.8.10. The three busiest sites (Sacrewell Farm access and access along Nene Way permissive footpath opposite; split of PRoW on west side of Yarwell Road, in Old Sulehay Forest and Sutton Heath Road bridleway) vary in the type of pedestrian, cycle and horse-riding movement. Movements at Sacrewell Farm access are split with cycle movements accounting for 25% of the total use and pedestrian movements accounting for 75% of the users at this site.

4.8.11. Movements at the split of PRoW on west side of Yarwell Road, in Old Sulehay Forest are predominantly pedestrian from Wansford Road into Sulehay Forest. Pedestrian movements on the PRoW account for 94% of all movements at this site.

4.8.12. Movements at Sutton Heath Road bridleway are predominantly cycle movements on the existing road network. The PRoW is rarely used. Cycling movements on the road network account for 95% of all WCH movements at this site.

4.8.13. In total, fewer than 30 horse rider movements were observed at all sites during the survey period. However the survey results indicate that Sutton Crossways at Nene Way is a common destination for horse riders (25 movements recorded in the 7-day period).

4.8.14. The residual effects of the Scheme on WCH are set out in Table 12.15 of ES Chapter 12 Population and human health. In summary:

- permanent removal of the cycle facilities at A47/A1 roundabouts loss of northern sections of the permissive routes which form circular routes that currently run immediately south of the existing A47 alignment from PRoW Burlingham FP3
- diversion of Wansford Hereward Way Permissive 3 and Wansford Hereward Way Permissive 2 along the new access road for Sacrewell Farm (for users approaching from Wansford)

- diversion of Wansford Hereward Way Permissive 3 and Wansford Hereward Way Permissive 2 along the new access road for Sacrewell Farm (for users approaching from the east)
- new link between A47/A1 eastern roundabout and petrol filling station
- removal of A47/Upton Road / Peterborough Road roundabout (cycle movements between Ailsworth and Upton)
- removal of A47/Upton Road / Peterborough Road roundabout (cycle movements between Southorpe and Ailsworth via Upton)
- permanent stopping up of Wansford 4 and replacement with new section of footpath.

4.8.15. The proposed improvements are listed in paragraphs 4.7.18 – 4.7.19 above.

4.8.16. Highways England is committed to continuing to work with Cambridgeshire and Peterborough City Council and have been in regular contact with officers to discuss the Scheme's progress and will continue further dialogue on the proposed WCH facilities in the area.

## 4.9. Transport Assessment Summary

4.9.1. The Scheme accords with Transport policy at the national level in that the Road Investment Strategy 2 (RIS2) supports the A47 Scheme as a required improvement to the SRN. Further, in accordance with the NPS NN and NPPF it will reduce congestion-related delay, improve journey time reliability, increase the overall capacity of the A47 and improve road safety and traffic flow, assisting the region's attractiveness for business and helping promote a competitive regional economy.

4.9.2. At a regional and local level, the Scheme will assist in delivering the required and supported key infrastructure which is essential to safe, fluid connectivity and facilitating new housing and business developments.

4.9.3. The results of the modelling assessment show that the Scheme improves the overall operation of the network as well as improving A47 peak hour journey times (approximately 17% - 22% depended on direction and scenario in the AM peak). Overall, the Scheme will reduce the single carriageway overcapacity delays to minimal levels. The Scheme provides enough additional capacity to allow traffic flows to increase in the order of 14-16% on the Scheme section.

4.9.4. The Scheme will incorporate safe, convenient, accessible and attractive routes for pedestrians, cyclists and equestrians along and across the A47 and, upgrade and

realign the A47 with a section of the existing A47 alignment de-trunked to local road status and a section closed to vehicular traffic. The results of the modelling assessment show that the traffic flows on the downgraded existing A47 road will be reduced as a result of the Scheme.

4.9.5. New sections of shared footway / cycleway will be provided to allow a continuous east - west route for users between Wansford and Peterborough Road (Ailsworth) as well as linking into existing PRoW and permissive footpaths at the River Nene and permissive routes at Sacrewell Farm. The section of route to be provided between Wansford, via the new all user route that has recently been provided, and Sacrewell Farm will also be suitable for equestrians.

4.9.6. The Scheme will also provide grade separated infrastructure comprising an underbridge at Sacrewell Farm suitable for all users and an underpass at the disused railway line suitable for pedestrians and cyclists allowing users to cross the new A47 alignment at two points for north to south movements. New signing will also be provided to redirect cyclists through Wansford to the east of the A1 via the new all user route that has recently been provided linking to the Scheme.

4.9.7. The Scheme will improve safety operational issues provides safety improvements for pedestrians, cyclists and other vulnerable users. It also improves safety along the A47 for road users by providing an upgraded dual carriageway alignment and a separate A1 east bound off-slip road. In total, COBA-LT analysis indicates that, over a 60-year timeframe the Scheme improvements will save a total of 265 casualties and 42 KSI.

4.9.8. The Scheme will improve reliability and network resilience as dual carriageways are more reliable than single carriageways. Road capacity is increased, delays are shortened, and accidents (and their impacts) are reduced. This will encourage economic growth in the local area as well as across the A47 corridor between the A1/A47 junction, Peterborough and beyond. In addition, the Scheme would provide additional route options avoiding the A47 for traffic travelling between Sutton and Ailsworth as well as an under-pass for Sacrewell Farm north-south traffic. This improves the resilience of the network and provides additional access for short distance local movements.

# 5. Economic Case Overview

## 5.1. Introduction

5.1.1. This section outlines the economic assessment of the Scheme. It presents the expected benefits and disbenefits associated with the Scheme and sets out overall value for money. It estimates its economic worth, by comparing the benefits to users against the costs of procurement. It does this by comparing the economic costs and benefits of the Scheme against the equivalent costs and benefits without the Scheme.

## 5.2. Overview of Economic Assessment and Methodology Used

5.2.1. The purpose of an economic appraisal is to estimate the benefits of a transport scheme using information on travel demand, traffic flows, journey times and other data extracted from the traffic model. A Benefit to Cost Ratio (BCR) is calculated from the economic assessment by comparing the scheme cost to the benefits of the scheme over the 60-year appraisal period.

5.2.2. Benefits appraised for the Wansford scheme have been categorised as established monetised impacts, evolving monetised impacts, indicative monetised impacts and non-monetised impacts, as per the Department for Transports (DfT) VfM Framework.

5.2.3. The benefits of the Scheme have been calculated from a number of sources:

- user benefits during normal operation (savings relating to travel times and vehicle operating cost (VOC)) have been assessed using Transport User Benefit Appraisal (TUBA)
- user disbenefits during construction have also been assessed using TUBA
- accident savings have been forecast using Cost and Benefit to Accidents – Light Touch (COBA-LT)
- monetised estimates have been made of the greenhouse gas, air quality and noise impacts and supplementary assessments have been undertaken to quantify benefits due to Journey Time Reliability (JTR) and Wider Economic Impacts (WEIs)
- indirect tax revenue has been calculated using TUBA, based on changes in the amount of fuel purchased and the associated impact to revenue from fuel duty as a result of the Scheme

- journey time reliability (JTR) benefits were assessed in line with the guidance in Transport Appraisal Guidance (TAG)
- wider economic impacts (WEIs) – WEIs were assessed in line with the guidance in TAG.

5.2.4. Qualitative and quantitative assessments on the social and distributional impacts resulting from the Scheme have also been carried out in full.

5.2.5. The costs of the Scheme used in the assessment include construction costs provided by the Highways England Commercial team in March 2021 and maintenance costs, taken from the July 2019 Cost and Benefit Analysis (COBA) manual and include in Group 1: drainage, street lighting, footway/cycle tracks, safety fence/barrier, boundary fences, bridges/culverts/subways, remedial earthworks, verge maintenance, sweeping, gulley emptying, signals/signs/crossings, road markings, salt/snow plough/fencing and motorway compounds. For Group 2 costs it is assumed that as a result of vehicles reassigning from older rural roads to the newer standard A47, it ceases to impose wear and tear on these old roads and instead imposes it on the new road. For the purposes of the economic assessment, net change in Group 2 maintenance costs between the DM and DS (Do Minimum and Do Something, see section 4) situations is assumed to be insignificant and therefore have not been considered.

5.2.6. The main economic assumptions are based on the TAG Databook, issued in July 2020.

5.2.7. In line with DfT recommendations and uncertainty of forecasting, the future, scenario analysis has been undertaken supplemented with sensitivity tests. In addition to the economic appraisal of the core scenario, additional sensitivity tests include:

- low traffic growth scenario
- high traffic growth scenario
- a high carbon value scenario
- a TUBA version scenario using TAG Databook

5.2.8. The latter test reflects the long and medium term economic and fiscal outlook from the Office of Budget Responsibility (OBR), taking into consideration the impact of COVID-19 on economic growth.

5.2.9. The impacts of the sensitivity economics files on the economic assessment (notably user benefits and journey time reliability) have been undertaken for the core scenario only.

5.2.10. All benefits and costs were calculated in monetary terms and were expressed as present values (PV) in discounted 2010 prices. This enables direct economic comparison with other schemes which may have very different timescales.

5.2.11. The key components that make up the assessment are:

*Benefits*

- Transport Network Impacts
  - Travel time savings
  - Vehicle operating costs
  - Changes in indirect taxation
  - Accident savings
  - Construction and maintenance
- Environmental Impacts
  - Greenhouse Gases
  - Air Quality
  - Noise

*Costs*

- Scheme Costs
  - Construction Cost
  - Land Cost
  - Preparation Cost
  - Supervision Cost
  - Operating and Maintenance Costs

## 5.3. Economic Benefits

5.3.1. The Scheme will increase capacity, relieve congestion and improve journey times along this section of the A47 Strategic Road Network. These improvements will reduce lost productive time and subsequently increase business user and transport service provider benefits. There will also be associated changes in

vehicle operating costs, such as fuel, vehicle maintenance and mileage related depreciation. Further details can be found in Section 4 Transport Assessment summary of this Case.

5.3.2. Overall, the Scheme is forecast to produce user benefits of £120.19 million (PV) over the 60-year appraisal period. These benefits comprise of travel time savings of £91.75 million with overall vehicle operating cost benefits of £0.7 million. As the Scheme generates reductions in congestion, greater time benefits are experienced although this may result in greater fuel consumption due to improvements in traffic flow rates.

5.3.3. The results of the economic appraisal for the Scheme are summarised in Table 5.1. The table includes the results of the appraisal of the core scenario.

Table 5.1: Summary of Economic Assessment Results – Core Scenario, £ millions

| | | | Costs / Benefits |
|---|---|---|---|
| | | | Core |
| **Benefits** | Consumer Commuting User Benefits | Travel Time | £31.16 |
| | | Vehicle Operating Cost | -£0.90 |
| | | Construction Delays | -£0.68 |
| | | **Net Consumer User Benefits** | **£29.59** |
| | Consumer Other User Benefits | Travel Time | £25.99 |
| | | Vehicle Operating Cost | -£1.12 |
| | | Construction Delays | -£0.47 |
| | | **Net Consumer User Benefits** | **£24.40** |
| | Consumer Business User Benefits | Travel Time | £34.60 |
| | | Vehicle Operating Cost | £2.72 |
| | | Construction Delays | -£0.90 |
| | | **Net Business User Benefits** | **£36.43** |
| | Accidents Benefits | | £10.67 |
| | Indirect Tax Revenues | | £1.70 |
| | Noise | | -£0.29 |
| | Air Quality | | -£0.37 |
| | Greenhouse Gases (Carbon) | | -£2.61 |
| | **Total Level 1 Present Value Benefit (PVB)** | | **£99.52** |
| **Costs** | Operating and Maintenance Costs | | £0.46 |
| | Investment Costs (including capital costs of Maintenance) | | £30.96 |

| | | Costs / Benefits |
|---|---|---|
| | | Core |
| | **Total Present Value Cost (PVB)** | **£31.42** |
| **Level 1 Net Present Value (NPV)** | | **£68.10** |
| **Level 1 Benefit to Cost Ratio (BCR)** | | **3.2** |
| | | |
| **Benefits Level 2** | Journey Time Reliability (JTR) | £0.75 |
| | Wider Economic Benefits (WEB) | £19.93 |
| | **Total Level 2 Present Value Benefit (PVB)** | **£20.68** |
| **Adjusted Present Value Benefit (PVB) (Level 1 + Level 2)** | | **£120.19** |
| **Costs** | **Total Present Value Cost** | **£31.42** |
| **Adjusted Net Present Value (NPV) (Level 1 + Level 2)** | | **£88.77** |
| **Adjusted Benefit to Cost Ratio (BCR) (Level 1 + Level 2)** | | **3.8** |

5.3.4. The Scheme results in an overall reduction of fatal, serious and slight accidents and casualties. The monetary savings in terms of accidents is approximately £10.67 million over the 60-year appraisal period.

5.3.5. Construction delays generate minimal disbenefits. The impact estimated in monetary terms amounts to -£2.05 million, suggesting that the temporary traffic management solutions are expected to keep disruption to a minimum.

5.3.6. Greenhouse gas disbenefits over the 60-year appraisal period have been calculated to total -£2.61 million.

5.3.7. Air quality disbenefits have also been calculated over the 60-year appraisal period and amount to -£0.37 million with noise disbenefits at -£0.29 million. The monetary calculation is based on absolute quantities of emissions across all receptors that doesn't take into account whether or not there are significant effects but places a monetary value based on the absolute changes from current levels. It gives a numerical figure to include in the cost-benefit analysis, but one which is often more pessimistic (or sometimes more optimistic) than the picture emerging from the environmental assessment in the ES.

5.3.8. Journey Time Reliability (JTR) impacts were calculated for the Scheme. Dual carriageway sections are usually more reliable than single carriageway sections and as a result, the Scheme generates JTR benefits of £0.75 million. It should be noted that these benefits are only incorporated in the Level 2 BCR.

5.3.9. The monetised value for the total wider economic impacts is about £19.93 million, with the majority of these benefits being derived from the agglomeration assessment. This suggests that business users are the main beneficiaries from the enhanced connectivity and congestion reductions brought about by the Scheme and that there will be an overall, long-term positive impact. As for JTR these benefits are only incorporated in the Level 2 BCR.

## 5.4. Social Impacts Summary

5.4.1. The Social Impacts of the Scheme cover the human experience of the transport system and its impact on social factors that are not considered as part of economic or environmental impacts. They have been assessed either quantitatively or qualitatively in accordance with Transport Analysis Guidance (TAG) unit A4.1 – Social Impact Appraisal (May 2020) and include the following:

- accidents - new transport schemes may result in an increase or decrease in the risk of individuals being killed or injured in an accident, for both users and non-users of transport. The Scheme is anticipated to alter the volume of traffic on the A47 and surrounding SRN and hence the number and type of accidents

- security - transport interventions can impact upon the personal security of transport users or other people. The principal security impacts on road users relate to situations where they are required to leave their vehicle or where they are forced to stop or travel at low speeds

- journey quality - a measure of the real and perceived physical and social environment experience while travelling. A poor journey quality may dissuade users from using particular modes of transport. Interventions that improve journey quality may lead to a choice of an alternative mode

- physical activity - transport provision can affect levels of physical activity. The British Medical Association notes that there is a relationship between transport, the environment and health

- option and non-use values are assessed when a scheme includes measures that will substantially change the availability of transport services within the study area

- accessibility reflects the range of opportunities and choices people have in connecting with jobs, services and family and friends. The level of access will depend on where people choose to live, where services are located and the availability of 'home delivery' of goods or services

- severance - community severance is defined as the separation of residents from facilities and services they use within their community caused by substantial changes in transport infrastructure or by changes in traffic flows

- personal affordability – the monetary costs of travel can be a major barrier to mobility for certain groups of people, with particularly acute effects on their ability to access key destinations.

5.4.2. Table 5.2 provides a concise summary of the findings and results of the Social Impacts Appraisal undertaken for each indicator.

Table 5.2: Social Impacts Summary

| Indicator | Assessment | Conclusion |
|---|---|---|
| Accidents | The introduction of the Scheme would lead to a reduction in all categories of casualties, resulting in an accident cost saving of approximately £10.7 million. | Moderate beneficial |
| Physical activity | The Scheme is an inter-urban road scheme and so is not anticipated to drive a significant shift from the private vehicle to active modes. However, the provision of segregated WCH routes will result in benefits to existing WCH trips in the area and to the small number of new trips created by the increased amenity. | Slight beneficial |
| Security | Site perimeters, entrances and exits and landscaping are assessed as having a high importance and beneficial impacts. All other indicators are of lesser importance and have a neutral impact. The Scheme will not result in detrimental security performance for any of the indicators identified. All necessary steps are being taken to ensure that this is the case during the design life of the Scheme. | Slight beneficial |
| Severance | There is a net adverse impact on members of the community's ability to access places of worship, education facilities and leisure facilities due to the increase traffic levels brought about by the Scheme. There are however positive impacts on members of the community's ability to access medical facilities. | Slight adverse |
| Journey quality | With the majority of journey quality impacts being related to public transport, these have been assessed as neutral. However, dualling of the A47 coupled with improved interchanges will provide better and safer access along, and | Slight beneficial |

| Indicator | Assessment | Conclusion |
|---|---|---|
| | when joining, the A47 mainline. This will therefore reduce wait times and improve vehicle speeds at junctions, thus improving traveller frustration and fear of potential of accidents. The provision of dedicated WCH routes will also reduce the likelihood of collisions on the road, thereby reducing users fear of potential accidents. | |
| Option and non-use values | Public transport is not affected by the Scheme, therefore there is no significant impact on option and non-use values. | Neutral |
| Accessibility | The Scheme is not anticipated to impact on the level of accessibility for any particular social group to access the services they require. Changes in the cost or provision of public transport will not result from the Scheme. | Neutral |
| Personal affordability | All sectors in the study area are expected to generate disbenefits in terms of personal affordability, where VOC for cars has increased as a result of the scheme. More affluent groups receive the greatest level of disbenefits in relation to their population. The most deprived groups receive a smaller amount of disbenefits in comparison across the entire study area, suggesting that the lower income groups here are not disproportionately impacted. It should however be noted that it is purely VOC driving these impacts as opposed to the combinations of changes to road charges and fares. | Slight adverse |

## 5.5. Distributional Impacts Summary

5.5.1. The Distributional Impacts of the Scheme consider how the impacts of a Scheme vary across different social groups and have been assessed, in accordance with TAG unit A4.2 Distributional Impact Appraisal (May 2020), either quantitatively or qualitatively, for the following user benefits:

- noise and air quality – noise and air quality impacts are likely to occur where a Scheme results in changes to traffic flows or speeds or where the physical gap between people and traffic is altered. The Scheme includes changes to the network road alignment, traffic flows and speeds

- accidents - any change to the road network can affect the number of accidents that occur. Groups that are particularly vulnerable to increases in risk of accidents include children, the elderly, young males and motorcyclists. There is also a strong link between deprivation and road accidents

- security – there are potential impacts (in personal security terms) from making changes to the transport system and these can raise specific concerns for women, young people, older people, people with disabilities and black and minority ethnic communities

- severance – consideration is given to how groups such as children, people without access to a car, older people, people with disabilities and parents with pushchairs are impacted by severance. These groups often experience longer journey times or are often required to use pedestrian routes that are inappropriate and difficult to use

- accessibility - public transport accessibility for different groups to access employment, services and social networks. The Scheme itself is not expected to have any significant impacts on public transport accessibility so this was scoped out of the assessment

- personal affordability - changes in transport costs could have disproportionate impacts on vulnerable groups due to their reliance on available, accessible and affordable transport options.

5.5.1. Table 5.3. provides a concise summary of the findings and results of the Distributional Impacts Appraisal undertaken for each indicator.

Table 5.3: Distributional Impacts Summary

| Indicator | Assessment | Conclusion |
|---|---|---|
| User Benefits | All sectors will experience benefits. The spread of benefits is more concentrated to the more affluent areas, with the more deprived areas experiencing a smaller share of the benefits. | Slight beneficial |
| Noise | Index of Multiple Deprivation (IMD) deciles 7 and 8, which contain 78% of the population considered, experience the greater number of net losers, with 278 receptors suffering worsened noise levels as a result of the Scheme. IMD deciles 5 and 6 also experience net losers however not of the same magnitude with only 28 receptors suffering worsened noise levels. Noise changes at schools, care homes and day centres are also expected to deteriorate. | Moderate Adverse |

| Indicator | Assessment | Conclusion |
|---|---|---|
| Air Quality | IMD deciles 7 and 8, (64% of the population considered), experience the greater number of net losers, with 11 receptors suffering worsened nitrogen dioxide ($NO_2$) levels as a result of the Scheme. IMD deciles 5 and 6 experience net winners with 3 receptors seeing improved $NO_2$ levels. The least deprived groups (IMD deciles 1 and 2 - 23% of the population considered), experience a neutral impact in $NO_2$ levels with equal numbers of receptors seeing improved and worsened air quality. When considering changes in particulate matter ($PM_{10}$) there is also estimated to be a total number of losers. Air quality changes at the school within the study are expected to improve however this does not materially change the conclusion due to the impacts at income deprivation level[15]. | Moderate Adverse |
| Accidents | Cyclists, motorcyclists, and young male drivers will experience a marginal net reduction in accidents. However, these net-reductions only make up a very small proportion of the total that has been assessed. All other vulnerable groups and users (pedestrians, children, and the elderly) see no significant change in the expected number of accidents. | Neutral |
| Security | All vulnerable groups and users will experience benefits as a result of improved site perimeters, entrances, exits and landscaping. The spread of benefits is good, meaning that no particular group or users is adversely affected. | Slight beneficial |
| Severance | There is a significant number of amenities in the areas surrounding the Scheme. The Scheme is expected to disbenefit all vulnerable groups due to increased traffic levels and so increase difficulty in accessing the majority of amenities considered. Young people are expected to be the most greatly impacted in relation to worsened severance. | Slight averse |
| Accessibility | The appraisal of accessibility primarily focuses on the public transport accessibility. Therefore, no assessment has been undertaken. | Scoped out during screening stage |
| Affordability | All sectors in the study area are expected to generate disbenefits in terms of personal affordability, where VOC for cars has increased as a result of the Scheme. More affluent groups receive the greatest level of disbenefits in relation to their population. The most deprived groups | Slight adverse |

[15] The deprivation scores are from "The English Indices of Deprivation 2019" based on 2011 Census data.

| Indicator | Assessment | Conclusion |
|---|---|---|
| | receive a smaller amount of disbenefits in comparison across the entire study area, suggesting that the lower income groups here are not disproportionately impacted. It should however be noted that it is purely VOC driving these impacts as opposed to the combinations of changes to road charges and fares. | |

## 5.6. Economic Assessment Summary

5.6.1. Table 5.1 shows that the Level 2 benefits for the Scheme generate a Present Value Benefit (PVB) of £120.19 million.

5.6.2. The total Scheme costs are £31.42 million (PV) with an assumption that none of the costs will be funded from developer contributions. The construction cost figure was correct at the time of compiling this report and may be refined as the detailed design progresses. Any significant changes in cost may require the BCR calculations to be reviewed.

5.6.3. With consideration of the effects of delays during construction, accident benefits, indirect taxation benefits, monetised environmental impacts and maintenance costs, the initial Benefit to Cost Ratio (BCR) is 3.2 which represents 'High' Value for Money (VfM).

5.6.4. The Scheme is also forecast to generate wider economic impacts and journey time reliability benefits. The value for the total wider economic impacts is about £19.93 million, whilst for journey time reliability it is £0.75 million.

5.6.5. Inclusion of journey time reliability benefits and wider economic impacts gives an adjusted BCR of 3.8. This also represents 'High' VfM.

# 6. Conformity with Planning Policy and Transport Plans

## 6.1. Policy Context

6.1.1. This section provides an overview of the Scheme's compliance with national, sub-regional and local planning policy and infrastructure delivery strategies and plans.

6.1.2. As set out by the PA 2008, the primary policy consideration for a NSIP highway scheme is the NPS NN. Section 104 of the PA 2008 requires the SoS to determine an application for an NSIP in accordance with a relevant NPS except in a limited number of specified circumstances.

6.1.3. In addition to the NPS NN, there are other key policy documents that may also be important and relevant matters to which the SoS will have regard. These are set out throughout this section as they demonstrate the Government's continued commitment to invest in the SRN. They are:

- National Planning Policy Framework February (NPPF) 2019
- Road Investment Strategy 2 2020-2025 (RIS2)
- The Strategic Road Network and the Delivery of Sustainable Development (DfT Circular 02/2013)
- National Infrastructure Delivery Plan 2016-2016
- National Infrastructure Strategy Plan November 2020

6.1.4. The Highways England Delivery Plan 2020-25 is also reviewed.

## 6.2. National Policy and Plans

### National Networks National Policy Statement (January 2015)

6.2.1. National Policy Statements are produced by the relevant government body and provide policy on specific aspects of national infrastructure clarifying how it:

- contributes to sustainable development
- takes account of the mitigation of, and adaptation to, climate change
- demonstrates that objectives have been integrated with other government policies
- details how actual and projected capacity and demand have been taken into account

- considers relevant issues in relation to safety or technology
- looks at circumstances where it would be particularly important to address the adverse impacts of development.

*6.2.2.* In January 2015, the government designated the NPS NN which sets out the Government's vision and policy specifically regarding the strategic road and rail network. Paragraph 2.2 states: *"There is a critical need to improve the national networks to address road congestion and crowding on railways to provide safe, expeditious and resilient networks that better support social and economic activity; and to provide a transport network that is capable of stimulating and supporting economic growth".*

6.2.3. The NPS NN sets out the need for NSIPs on the national road and rail networks in England, and the Government's policy to deliver these projects. The National Policy Statements supplement the NPPF. NPS NN sits alongside RIS1 and RIS2.

6.2.4. As the Scheme meets the criteria for a NSIP, and will be subject to the DCO process, the application will be judged primarily against the NPS NN according to the decision-making framework set out in the PA 2008.

6.2.5. The NPS NN is not scheme specific. It sets out the need for development of the national networks, the Government's policy and strategic vision and objectives and details the principles by which applications for road and rail schemes should be assessed.

*6.2.6.* Paragraph 1.2 of the NPS NN states: *"The Secretary of State will use this NPS as the primary basis for making decisions on development consent applications for national networks nationally significant infrastructure projects in England. Under Section 104 of the Planning Act the Secretary of State must decide an application for a national networks nationally significant infrastructure project in accordance with this NPS unless he/she is satisfied that to do so would:*

- *Lead to the UK being in breach of its international obligations;*
- *Be unlawful;*
- *Lead to the Secretary of State being in breach of any duty imposed by or under any legislation;*
- *Result in adverse impacts of the development outweighing its benefits; or*
- *Be contrary to legislation about how the decisions are to be taken".*

6.2.7. Paragraph 2.21 sets out a range of alternatives to major improvements to the network including Maintenance and Asset Management, Demand Management and Modal Shift. However, Paragraph 2.10 states the Government concludes that at a strategic level there is a compelling need for development of the national networks. Further, Paragraph 2.22 states that without improving the road network, including its performance, it will be difficult to support further economic development, and this will impede economic growth and reduce people's quality of life. It is stated that the Examining Authority and the Secretary of State should start their assessment of applications for infrastructure covered by the NPS NN on that basis.

6.2.8. The Scheme comprises an essential part of a wider package of proposals for the A47 corridor to transform connectivity to and from the East of England, as described in the Roads Investment Strategy, the Transport Investment Strategy, the National Infrastructure Delivery Plan, and the Highways England Delivery Plan. The Scheme therefore helps to address the compelling and strategic need for development, identified in the NPS NN.

6.2.9. Compliance of the Scheme's objectives with the vision and strategic objectives, contained within Chapter 2 (page 9) of the NPS NN is set out in Section 3 above (Table 3-1).

6.2.10. Paragraph 3.1 of the NPS NN states that the need for development of the national networks, and the Government's policy for addressing that need, must be seen in the context of the Government's wider policies on economic performance, environment, safety, technology, sustainable transport and accessibility, as well as journey reliability and the experience of road users.

6.2.11. The Scheme directly addresses the Government's wider strategic policy objectives, whilst specifically addressing the identified congestion problems along the A47 caused by new developments and increased traffic, older road layouts and standards, accident rates and associated delays and limited opportunities for overtaking. A description of these issues and the need for the Scheme is provided in Chapter 2 of the ES (**TR010039/APP/6.1**). The Scheme fulfils this long-established need, and delivers benefits in terms of resolving local transport, economic, environmental and heritage concerns and the Government's recognised national commitment to improving the SRN.

6.2.12. The NPS NN requires Schemes to consider the balance of potential benefits and adverse impacts (paragraph 4.3). Benefits to be considered include the facilitation of economic development, job creation, housing and environmental improvement, and any longer-term or wider benefits. Assessment of adverse impacts should include longer-term and cumulative adverse impacts, as well as planned mitigation of these impacts.

6.2.13. It also requires environmental, safety, economic and social impacts to be considered at a national, regional and local level. The information provided should be proportionate to the development (paragraph 4.4). In this regard, the Scheme has been subject to a Transport Assessment (**TR010039/APP/7.3**), Economic Assessment (summary included in Section 5 herein) and the ES (**TR010039/APP/6.1**).

6.2.14. Paragraph 4.27 of the NPS NN states that all projects should be subject to an options appraisal. The options appraisal should consider viable modal alternatives and may also consider other options.

6.2.15. The Scheme has been subject to a rigorous options appraisal process. A summary of the considered options and the appraisal process has been provided in Section 2 of this report with further detail in the Scheme Assessment Report (**TR010039/APP/7.9**).

6.2.16. Section 5 of NPS NN gives guidance for decision making relating to impacts on the environment, habitat, landscape, accessibility and existing infrastructure. In relation to environmental impacts, the guidance is clear that development consent should not be granted for schemes which will have a detrimental impact on irreplaceable habitats, including ancient woodland and veteran trees *"unless the national need for and benefits of the development, in that location, clearly outweigh the loss"*. (Paragraph 5.32).

6.2.17. The assessment of effects and associated mitigation on environment, habitat, landscape, accessibility and existing infrastructure is provided in the ES (**TR010040/APP/6.1 – 6.4**).

6.2.18. Table 6.1 below summarises the significant environmental effects during construction and operation as presented Chapters 5-15 of the ES (**TR010039/APP/6.1**).

Table 6.1: Summary of significant environmental effects

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| Air Quality (ES Chapter 5) | Construction activities are programmed to last less than two years and any potential impacts will be mitigated and managed through best practice during construction. It is unlikely there will be a significant effect from construction activity or traffic on air quality or on the UK's ability to comply with the Air Quality Directive. The construction traffic | There are no receptors expected to exceed the annual mean $NO_2$ Air Quality Objectives (AQO) in the opening year scenarios, all modelled receptors have predicted annual mean $NO_2$ concentrations below the objective. The nitrogen deposition assessment |

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| | assessment was screened out of the assessment.<br>**No significant effects** on sensitive receptors have been identified as a result of construction dust. | concluded the change in nitrogen deposition with and without the project less than 1% of the lower critical load for all three designated sites assessed. In accordance with LA 105 Air Quality DMRB standard [16], **no significant effects** on human health or ecological receptors have been identified as a result of the Scheme in place. |
| Cultural Heritage<br>(ES Chapter 6) | Construction land-take within the scheduled monument boundary of the scheduled barrow cemetery and quadrilateral ditched enclosure (1006796) will be mitigated by archaeological recording works. However, the potential archaeology within the monument will be removed where it would otherwise be preserved for future generations, who may develop improved analytical techniques to better understand the remains. The loss of this protection and future potential means that the magnitude of impact will be reduced from minor adverse to negligible adverse rather than no change, giving a **slight adverse** significance of impact. | The assessment finds that there will be only one **moderate adverse significant effect** as a result of the demolition of the former Wansford Road Railway Station. This will be mitigated by historic building and topographical recording, retention of the platform and linesman's hut if possible and reuse of the building materials.<br><br>**Slight beneficial** effects will accrue as a result of recording and repurposing the railway line to an non-motorised user route.<br><br>The single designated heritage asset on which the Scheme has a residual impact after mitigation is the scheduled barrow cemetery and quadrilateral ditched enclosure (1006796). In relation to paragraphs 5.131 and 5.134 of the NPS NN, the impact of the Scheme on the |

[16] LA 105 Air Quality DMRB standard https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892e-c1d5c7a28d90

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| | | scheduled monument is considered to constitute **less than substantial harm.** This is because only a relatively small section of the scheduled monument will be impacted on and therefore the significance of the heritage asset, including the key elements of its special historic interest, will not be substantially affected. Historic England agrees that the harm to the schedule monument caused by the Scheme will be less than substantial. |
| Landscape and Visual (ES Chapter 7) | The effect on the Nassaburgh Limestone Plateau and the Nene Valley Landscape Character Areas during construction would be **large adverse** and significant. Within both character areas this would stem from the removal of existing vegetation during the various phases of construction and from the effect on the landscape of the temporary presence of construction activity including more general site clearance; the excavation of cuttings; the formation of new earthworks; general construction activity; the storage of materials and topsoil; the presence of plant, equipment, machinery and construction vehicles; and temporary traffic diversions. Overall, effects result from tree and vegetation clearance, construction earthworks, construction vehicles, haul routes and material storage in compounds, also, some lighting within site compounds.<br>Mitigation will include best practice in site tidiness; materials delivered on an 'as needed' basis; protection of retained vegetation.<br>The extent of the Scheme and associated works within the Nene Valley is smaller than within the Nassaburgh | At year 1 of operation, there would be a **moderate adverse** effect on both the Nassaburgh Limestone Plateau and the Nene Valley Landscape Character Areas **reducing to slight adverse** at year 15 due to the proximity of the new dual carriageway to the River Nene and the removal of roadside vegetation and the scale of the required steeply sloping landform within the shallow slopes of the valley and within proximity to the riverside.<br>In addition, there will be the removal of sections of tree and hedgerow cover and introduction of new earthworks within the southern extent of the Nassaburgh Limestone Plateau landscape.<br>In relation to effects on representative viewpoints, at year 1 of operation, there were four **moderate adverse** significant effects, on |

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| | Limestone Plateau where both of the main construction compounds are located. However, the landscape effect would be particularly evident in the Nene Valley where tree clearance and earthworks, are located close to the river between Wansford and Sutton featuring the presence of large scale plant on the skyline.<br>**Significant large and moderate adverse** visual impacts would occur at 11 viewpoints (see Table 7-8 of ES Chapter 7 (**TR010039/APP/6.1**)) including all aspects of construction including tree and vegetation removal, temporary construction compounds, materials stockpile areas and haul routes.<br>There will also be **large adverse** effects of significance on residential, community and PRoW visual Receptors and 9 **moderate adverse** effects (see Table 7-9 of ES Chapter 7 (**TR010039/APP/6.1**)) | footpaths and the village of Sutton. By year 15 these had reduced to **slight beneficial, neutral or slight adverse**.<br>In year 1 there were 6 **moderate adverse** effects on residential, community and PRoW receptors, these **reduced to slight adverse** or less at year 15.<br>The combined effect of the Scheme on landscape and visual amenity as a whole has been assessed independently and the outcome combined into a single conclusion on the overall likely significance of effect. Having considered the residual (Year 15) landscape and visual assessments, it is concluded that the Scheme would not result in a significant long term residual effect on overall landscape and visual amenity. While a small number of visual receptors would experience a residual adverse (albeit not significant) visual effect, this would be a relatively limited change. |
| Biodiversity (ES Chapter 8) | There will be a **moderate adverse** impact on Natural Environment Research Council (NERC) habitats in respect of the permanent loss of hedgerows, deciduous woodland, coastal and floodplain grazing marsh although these habitats are being compensated.<br>Slight beneficial effects were identified on County Wildlife Sites and NERC habitats (lowland meadows, lowland calcareous grassland and pond) during the construction phase. Beneficial effects will arise from the establishment of new areas of species rich grassland, | There are **no significant residual impacts** at operational stage. |

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| | calcareous grassland and wetland habitat and targeted management plans. | |
| Geology and Soils<br>(ES Chapter 9) | There will be a **very large adverse** effect on Grade 2 agricultural soils due to the loss of 11 ha of land for permanent works. The footprint of the Scheme has been minimised and soils will be reused where possible subject to a materials management plan.<br>There will also be a **moderate adverse** impact due to temporary land take of Grade 2 agricultural land for construction compounds, haul roads etc. Soils will be protected and replaced to their baseline condition.<br>There will also be **moderate adverse** impacts due to land take of 8.1 ha of Grade 3a and 9.5 ha of Grade 3b agricultural land for permanent works. | Residual effects have been identified to be **neutral** for the operation of the Scheme. |
| Material Assets & Waste<br>(ES Chapter 10) | The residual effects during construction will be **slight adverse** and not significant. | Significant environmental effects from the use of material assets and generation of waste during the first year of operational activities are not predicted due to limited material use and waste generation from infrequent maintenance activities.<br>Design, mitigation and enhancement measures will be implemented during construction and controlled through the Environmental Management Plan (EMP) (**TR010039/APP/7.5**). Overall, the recycled content of the materials used are predicted to be 54%, well in excess of the regional target of 31%. An overall recovery rate of 93% (target 70%) of the waste generated will be re-used or recycled in line with the Government's target for the |

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| | | recovery of construction waste. |
| Noise and Vibration (ES Chapter 11) | Construction noise is not predicted to result in any significant adverse residual effects.<br>Subject to mitigation vibration due to construction activity is not expected to constitute a significant effect at any vibration-sensitive receptor.<br>No significant adverse noise effects due to construction traffic are predicted. This will be controlled in the Outline Traffic Management Plan (**TR010038/APP/7.6**).<br>The change in road traffic noise during temporary traffic diversions are therefore not expected to constitute a significant effect.<br>Ongoing monitoring will take place during construction. | No significant residual traffic noise effects, adverse or beneficial, are predicted due of the operation of the Scheme.<br>Operational noise and vibration monitoring is not recommended. |
| Population and Human Health (ES Chapter 12) | The demolition of Old Station House will have a **moderate adverse** impact. A moderate significance has been chosen instead of large as the property is currently derelict and not occupied.<br>Access to Lower Lodge Farm on Upton Road would be altered by the Scheme resulting in a journey length increase of 2.9km. The magnitude of impact is **moderate adverse** due to the introduction of severance with severe accessibility provision.<br>Provisional traffic management measures at agricultural holding 1 are likely to have a **temporary moderate adverse** effect on agricultural operations as Holding 1 has been identified as having a very high sensitivity.<br>There will also be a **temporary moderate adverse** effect on the profitability of Holding 3 due to the removal of 5ha of land for road construction purposes.<br>Approximately 2.1 ha will be required from the 15 ha Holding 5 during | During operation, it is not expected that there would be any changes in health outcomes, however there may be some positive health outcomes in terms of noise and accessibility for some receptors. |

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| | construction. This equates to 14% of the total area. This is likely to have a **moderate adverse** impact upon the turnover and profitability of the farming enterprise.<br>Permanent removal of the cycle facilities at the A47/A1 roundabouts and the removal of A47/Upton Road / Peterborough Road roundabout (cycle movements between Ailsworth and Upton) will have a **moderate adverse** impact.<br>There are **no significant impacts on human health** as a result of the Scheme construction. | |
| Road Drainage and the Water Environment (ES Chapter 13) | **No significant adverse residual effects** on surface water and groundwater receptors are anticipated during construction of the Scheme with the adoption of mitigation measures discussed in section 13.9 of Road Drainage and the Water Environment (Chapter 13) of the ES (**TR010039/APP/6.1**). The mitigation measures which will be secured through measures embedded in the design of the Scheme and the implementation of the Environmental Management Plan (**TR010039/APP/7.5**).<br><br>The Scheme is classed as 'essential infrastructure' partly lying in Flood Zone 3.<br><br>There will be **no significant adverse effects** on flood risk - It is considered that there would be no increase in the risk of flooding (from any source) to or from the Scheme and it therefore meets the requirements of the Exception Test and the flood risk requirements of the NPS NN section 5.94 (see Appendix 13.1 Flood Risk Assessment of ES | **No significant adverse residual effects** on surface water and groundwater receptors are anticipated during construction of the Scheme with the adoption of mitigation measures discussed in section 13.9 of Road Drainage and the Water Environment (Chapter 13) of the ES (**TR010039/APP/6.1**). The mitigation measures which will be secured through measures embedded in the design of the Scheme and the implementation of the Environmental Management Plan (**TR010039/APP/7.5**).<br><br>**No significant adverse effects** on flood risk - Given the proposed mitigation, it is anticipated that the Scheme would be at the same level of risk of flooding during construction as it would under the operational scenario and will not cause an increase in flood risk elsewhere. |

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| | Chapter 13 Road drainage and water environment (**TR010039/APP/6.1**)). | |
| Climate (ES Chapter 14) | There are **no significant adverse effects** of construction in relation to carbon emissions which are estimated to be approximately 19,823 tonnes of carbon dioxide equivalent (tCO2e). Notwithstanding, the future design and construction of the Scheme will reduce and minimise carbon emissions using an integrated and holistic approach to assessing carbon emissions. The Scheme includes earthworks, pavement and drainage elements.<br>Opportunities for reducing carbon during the construction phase will be considered at each key design stage and specific measures will be further developed including:<br>• optimising the re-use of existing site won and recycled materials<br>• minimising the use of primary aggregates and other off-site sourced construction materials<br>• developing a comprehensive and holistic materials management plan including re-use of site won earthworks material<br>• undertaking an appropriate intrusive pavement survey engaging with supply chain<br>• optimise pavement construction with appropriate recycling<br>• using innovative applications to reduce the carbon emissions associated with construction compounds and support facilities.<br>Monitoring and reporting on carbon emissions associated with materials, energy and fuel use during the construction process is stipulated as a Highways England reporting | The estimated Do-Minimum emissions total over the 60-year appraisal period is 84,777,027 tCO2e, the corresponding Do-Something emissions total is 84,838,049 tCO2e. Therefore, the total increase in vehicle carbon emissions associated with the Scheme (comparison of Do-Minimum and Do-Something scenarios) over the 60-year appraisal period (2025 to 2085) is estimated to be 61,021 tCO2e.<br>The increase in carbon emissions resulting from the Scheme represents less than 0.001% (0.0078%) of the UK's Fourth, Fifth and Sixth carbon budgets over their respective periods.<br>**No significant adverse effects** of the operational Scheme as a result of climate have been identified, therefore no monitoring is required. However, it is noted that climate change projections are likely to change within the appraisal period of the Scheme (60 years), therefore the vulnerability of the Scheme to such changes should be reviewed when updated projections become available.<br>The recent UK Government announcement on ending the sales of new petrol and diesel vehicles by 2030 will further |

| Topic | Assessment of Significant Environmental Effects | |
|---|---|---|
| | **Construction** | **Operation** |
| | requirement and this has been included in the EMP (**TR010039/APP/7.5**). | reduce the Scheme's end user carbon emissions. |
| Cumulative Effects (ES Chapter 15) | The Scheme is unlikely to result in any significant cumulative effects during construction.<br>In combination with other developments within the sone of Influence (ZOI), **no significant cumulative effects** are anticipated on receptors identified in the ES. | The Scheme is unlikely to result in any significant cumulative effects during operation.<br>In combination with other developments within the ZOI, **no significant cumulative effects** are anticipated on receptors identified in the ES. |

6.2.19. The response to the NPS NN Accordance Tables (**TR010039/APP/7.2**) and respective chapters of the ES (**TR010039/APP/6.1)** provides further analysis of these effects and the wide-ranging benefits of the Scheme.

*6.2.20.* Notwithstanding, following design and mitigation efforts, some residual significant effects will be unavoidable, though these have been minimised as far as possible. Policy and guidance recognises that not all impacts are able to be resolved in large scale Schemes and the above residual impacts will be weighed against the longer term and wider benefits of the Scheme in environmental, safety, social and economic terms. Specifically, paragraph 3.4 of the NPS NN states *"whilst applicants should deliver developments in accordance with Government policy and in an environmentally sensitive way, including considering opportunities to deliver environmental benefits, some adverse local effects of development may remain."*

### National Planning Policy Framework (NPPF) February 2019

6.2.21. The NPPF sets out the government's national planning policies for England and how these should be applied strategically in the development plan system and in the management of development.

6.2.22. The NPPF states that NPS's are the primary decision-making document for NSIP under the PA 2008. Paragraph 5 of the NPPF states: *"The Framework does not contain specific policies for nationally significant infrastructure projects. These are determined in accordance with the decision-making framework in the Planning Act 2008 (as amended) and relevant national policy statements for major infrastructure, as well as any other matters that are relevant (which may include the National Planning Policy Framework)."*

6.2.23. Paragraph 1.17-18 of the NPS NN states that the overall strategic aims of the NPS NN and NPPF are consistent and the NPPF will be an important and relevant consideration 'but only to the extent relevant to [the] project'.

6.2.24. The NPPF reiterates that the achievement of sustainable development lies at the heart of the planning system. This can be achieved through three overarching objectives: economic, social and environmental. These objectives are interdependent and need to be pursued in mutually supportive ways (paragraphs 7-8).

6.2.25. With regard to sustainable transport, Chapter 9 states that in plan making and development proposals, opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, should be considered and the environmental impacts of traffic and transport infrastructure identified, assessed and taken into account. This should include appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains (paragraph 102).

6.2.26. Further, planning policies should: *"Be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned; and identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development;' they should also provide for any large scale transport facilities that need to be located in the area, and the infrastructure and wider development required to support their operation, expansion and contribution to the wider economy. In doing so they should take into account whether such development is likely to be a nationally significant infrastructure project and any relevant national policy statements."* (Paragraph 104).

6.2.27. Paragraph 148 states that the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

6.2.28. Paragraph 150 states that new development should be planned for in ways that:

a) "*avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green*

*infrastructure; and*

*b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards."*

6.2.29. With regard to the need to adapt to climate change, the environmental effects of the Scheme have been carefully assessed. One of its objectives is to, where possible, improve the environmental effects of transport on those living along the route of or in the vicinity of the Scheme. This will be achieved through design, reducing any impacts on the natural and built environment. Comparison between the increase in Scheme emissions and published UK carbon budgets can be undertaken for approximately 45% of the emissions increase resulting from the Scheme. This represents approximately 0.001% of the UK's Fourth, Fifth and Sixth carbon budgets over their respective periods. The remaining increase in carbon emissions is predicted to occur after 2037. Future carbon budgets are expected to include less emissions across all sectors, working towards the goal of net zero carbon emissions by 2050.

6.2.30. The Scheme would improve the quality of the SRN in the east by improving connectivity, reliability, safety and resilience on the A47 between Wansford and Sutton which accords with the social objectives of the NPPF. The Scheme supports the NPPF economic objectives and strategic policy in making adequate provision for transport infrastructure and supporting future economic growth. The Scheme therefore accords with the key aims of the NPPF by providing improved infrastructure to support economic growth.

### Road Investment Strategy (RIS2)

6.2.31. **The Road Investment Strategy 2: 2020 to 2025 (RIS2)** defines a national programme of improvements to the SRN and sets a long-term strategic vision for the network to 2050 and the steps that will help HE achieve it. Within this context it specifies the performance standards Highways England must meet; lists planned enhancement schemes expected to be built; and states the funding that will made available during the Second Road Period ('RP2'), covering the financial years 2020/21 to 2024/25.

6.2.32. The RIS2 also sets out a list of schemes to be developed by Highways England over the period covered by the RIS and a number of specific locations for improvements to the SRN. The Wansford to Sutton Scheme is committed for RP2.

6.2.33. Highways England, as the strategic highways company appointed by the Secretary of State, must in exercising its functions and complying with its legal duties and other obligations act in a manner which it considers best calculated to, among others:

- minimise the environmental impacts of operating, maintaining and improving its network and seek to protect and enhance the quality of the surrounding environment
- conform to the principles of sustainable development.

*6.2.34.* RIS 2 (page 100) introduces the committed schemes in the East of England committed to in Road Programme 2. The RIS 2 (page 101) includes the *"A47 Wansford to Sutton – dualling of the A47 between the A1 and the dual carriageway section west of Peterborough".*

### The Strategic Road Network and the Delivery of Sustainable Development (DfT Circular 02/2013)

6.2.35. This Circular explains how the Highways Agency (Highways England) will engage with the planning system, communities and the development industry to deliver sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the SRN.

6.2.36. The document states that Highways England will work with local authorities to influence Local Plan decisions that may affect the SRN.

### The Highways England Delivery Plan 2020-2025

6.2.37. The Applicant is responsible for planning the long-term future and development of the SRN including its maintenance, operation and improvement. Published in March 2020 the Delivery Plan responds to and aligns with the government's RIS2. It provides high-level outcomes Highways England will work to deliver and the strategic priorities for the business.

6.2.38. The Wansford to Sutton Scheme is listed within the Regional Investment Programme which is used to deliver enhancement schemes. The various Schemes along the A47 are focussed on tackling regional problems around safety, congestion and capacity.

6.2.39. Annex B of the Plan sets out the six key performance outcomes agreed with the DfT for this second road period including:

- improving safety for all
- providing fast and reliable journeys
- a well-maintained and resilient network
- delivering better environmental outcomes

- meeting the needs of all users
- achieving efficient delivery.

6.2.40. These outcomes respond to and align with government's priorities, as set out in RIS2: a network that supports the economy; a greener network; a safer and more reliable network; a more integrated network; and a smarter network.

### National Infrastructure Delivery Plan, 2016- 2021

6.2.41. The National Infrastructure Delivery Plan (NIDP) 2016-2021 (produced by the Infrastructure and Projects Authority) outlines details of £483 billion of investment in over 600 infrastructure projects and programmes across the UK to 2020-21 and beyond.

6.2.42. The NIDP focuses specifically on nearly £300 billion of infrastructure that will be delivered over the next 5 years to 2020-2021.

6.2.43. Chapter 3 of the NIDP sets out how the Government is investing over £15 billion to support the transformation of the SRN, with over 100 major schemes completed or in construction by the end of 2020-21. Ministers have established a clear regulatory framework, setting up investment periods with legally-guaranteed funding levels. The first of these, Road Period 1, runs from 2015 to 2020. The goals and objectives of Road Period 1 are detailed within RIS1.

6.2.44. In June 2020 the Government produced the National Infrastructure and Construction Procurement Pipeline 2020/21 which is a forward-looking pipeline of planned procurements for the 2020/21 financial year in economic and social infrastructure. This analysis document, published alongside the procurement pipeline data, provides insights across the wide range of infrastructure the UK is planning to procure over the coming year. The A47 is not included in the projects for this particular year.

### National Infrastructure Strategy Plan, November 2020

6.2.45. HM Treasury, advised by the National Infrastructure Commission, presented the National Infrastructure Strategy Plan to Parliament in November 2020. It sets out the government's plans to deliver a radical improvement to the UK's infrastructure system delivering projects better, greener and faster, underpinned by high levels of government investment. It aims to:

- boost growth and productivity across the whole of the UK, levelling up and strengthening the Union
- put the UK on the path to meeting its net zero emissions target by 2050

- support private investment
- accelerate and improve delivery.

*6.2.46.* The foundational role of high-quality infrastructure in relation to economic growth is emphasised, particularly in current times in the UK's recovery from the COVID-19 pandemic. The 2020 Spending Review pledges £27 billion in 2021 to develop the economic infrastructure sectors, including transport. Further, it states that *"continuing to progress the UK's ambitious infrastructure plans in all parts of the country is vital to the recovery of the construction sector, and the economy as a whole".*

### Summary

6.2.47. The Scheme complies with national planning policy in that the Government has highlighted the express need for further growth and improvements to the national networks within the NPS NN and the recently published National Infrastructure Strategy Plan.

6.2.48. The criteria in Section 5 of NPS NN relating to impacts on the environment, habitat, landscape, accessibility and existing infrastructure can in most circumstances be met, with mitigation measures incorporated into the Scheme to reduce unavoidable impacts on the surrounding environment. Any residual 'significant' impacts are not without sufficient justification. Notwithstanding, the national need for and benefits of the Scheme, in that location, set out in the NPS NN clearly outweigh any loss.

6.2.49. The DfT's RIS2 lists the dualling from Wansford to Sutton as a 'committed Scheme' in the current roads period. The Highways England Delivery Plan also lists the A47 Wansford to Sutton within the Regional Investment Programme which is used to deliver enhancement schemes aimed at tackling regional problems around safety, congestion and capacity.

6.2.50. The Scheme meets the environmental and sustainable objectives of the NPPF, providing mitigation where unavoidable impacts occur. The Scheme, as submitted, will improve safety along this section of the A47, improve journey times and contribute to network resilience.

6.2.51. Highways England has engaged with the planning system, communities and the development industry to ensure the delivery of sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the

SRN in line with the requirements of Circular 2/2013 The Strategic Road Network and The Delivery of Sustainable Development[17].

## 6.3. Sub-Regional Policy

### Cambridgeshire and Peterborough Independent Economic Review – September 2018

6.3.1. The Economic Review is a product of the Cambridgeshire and Peterborough Independent Economic Commission which, amongst other things, will inform choices on policy priorities and strategic investment and provide understanding of the future drivers for change in the economy.

6.3.2. Peterborough has a population of over 200,000 and is the 4th fastest growing city in the UK. Economic growth in the region has outpaced the east of England and the UK over the last decade, driven by innovation, business creation and growth in Cambridgeshire and by population growth, particularly young people. Economic growth in the region is the basis for the devolution contract between central government and the area.

*6.3.3.* As part of the settlement for extra powers received by Cambridgeshire and Peterborough, the area is committed to doubling its economic output (as measured by Gross Value Added (GVA)) over the next 25 years. In this regard, Section 2.1 of the Review states, "*to avoid this target being missed, it will be in those areas that hindrances to growth (such as inadequate transport) will most urgently need to be addressed."* Further, *"the growth seen in Cambridgeshire and South Cambridgeshire seems very unlikely to be sustained in the future without further and significant investment in infrastructure. Businesses are already noting this as a major concern."*

6.3.4. Key recommendation #7 states: *"a package of transport and other infrastructure projects to alleviate the growing pains of Greater Cambridge should be considered the single most important infrastructure priority facing the Combined Authority in the short to medium term".* One of the projects listed as being likely to further this aim is the full dualling of the A47.

### Cambridgeshire and Peterborough Strategic Spatial Framework (non-statutory) – Towards a Sustainable Growth Strategy to 2050

6.3.5. The Strategic Spatial Framework defines the region's priorities for sustainable growth and includes wider actions to support the sustainable delivery of over

[17] Circular 2/2013 The Strategic Road Network and The Delivery of Sustainable Development https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/237412/dft-circular-strategic-road.pdf

100,000 new homes and over 90,000 additional jobs in Combined Authority plans and Local Plans.

6.3.6. It is noted that a number of key routes within the region suffer severe congestion at peak times. The A47 to Norwich is one of the strategic transport corridors listed as being critical to the area's economic success and growth. Planning for, and investment in, strategic transport infrastructure should therefore be prioritized to ensure growth and regeneration is properly serviced and the effects of congestion on productivity are addressed. Further, Peterborough is a strategic location where urban extensions at Hampton, Great Haddon and Norwood are anticipated to add over 11,000 new homes by 2036. Travel demand is expected to increase by 30% up to 2031 in Peterborough. The A47 dualling is listed as a strategic transport project.

### The Cambridgeshire & Peterborough Local Transport Plan February 2020

6.3.7. The Cambridgeshire & Peterborough Local Transport Plan sets out the policies and strategies needed to secure growth and ensure that planned large-scale development can take place in the county in a sustainable way. It was produced in partnership with Peterborough City Council, Cambridgeshire County Council, the Greater Cambridge Partnership, and the city and District Councils of Cambridge, East Cambridgeshire, Fenland, Huntingdonshire and South Cambridgeshire.

6.3.8. The interrelationship between the Plan's transport objectives and the delivery of wider goals relating to the economy, society and environment is emphasised in terms of *inter alia*:

- supporting new housing to accommodate a growing population and workforce
- sustainably connecting communities to facilitate rapid access to employment
- sustainable connections for business and tourism to main transport hubs
- building a resilient and adaptive transport network and improving journey time reliability
- achieving zero transport related fatalities or serious injuries
- improving air quality through new transport initiatives

- ensuring transport proposals protect and enhance the natural, historic and built environments
- reducing emissions to minimise the impact of transport and travel on climate change.

6.3.9. The Plan acknowledges that there will be significant growth in the number of commuting trips to the west of Peterborough leading to a rise in congestion by 2041. In this regard, paragraph 3.9 states *"there is a need to provide additional. Targeted highway capacity to support Peterborough's growth".* The Scheme is specifically mentioned in paragraph 3.24 as key to improving access to Peterborough as a business destination by reducing journey times. The Scheme would also *"reduce congestion along a key strategic route from Peterborough to the A1 corridor, and the wider north of England, as well as improving road safety along a route with a history of fatal and serious collisions."*

### The A47 Alliance

6.3.10. The A47 Alliance brings together the business community, local authorities, MPs and stakeholders along the whole of the trunk road route between Peterborough and Lowestoft. The Alliance states that they are working together to make the case for improvements and to secure the investment required to make it happen.

6.3.11. The A47 Alliance is calling on the Government to commit funding to fully dual the A47 by 2030 and specifically to prioritise upgrading sections from single to dual carriageway by 2025.

6.3.12. A number of technical papers supporting the case for improvements are on the A47 Alliance website. In 2019 the Alliance produced its latest brochure: The A47 Investing in East-West Success which details why, in their opinion, getting the A47 fully dualled is vital to the East of England's businesses and economic growth.

### Summary

6.3.13. There is a strong drive in the Cambridgeshire and Peterborough Combined Authority Region for sustained economic growth over the coming years to capitalise on population growth in the area, build upon the region's strong innovation and business base, deliver homes and jobs and to ensure the ongoing devolution of power to the authority. The dualling of the A47 and relief of the impacts of congestion on productivity, as part of a package of infrastructure measures, is critical to this delivery.

6.3.14. The Local Transport Plan also emphasises the interrelationship between the region's transport objectives and the delivery of wider goals relating to the economy, society and environment. The A47 Alliance also supports dualling of

the A47 in its entirety. The Scheme is therefore an essential and integral part of the Region's drive for economic success articulated in the objectives of the various sub-regional policy documents.

## 6.4. Local Policy

### Peterborough Local Plan July 2019

6.4.1. Peterborough Local Plan contains planning policies for the growth and regeneration of Peterborough and the surrounding villages up to 2036. The Plan notes that an important characteristic of Peterborough is the concentration of companies engaged in environment-related activities. There is also significant pressure for development to serve the logistics industry, taking advantage of the area's prime location beside the (north-south) A1 and (east-west) A47. With unemployment slightly higher than average there is a need to identify land to meet future employment needs.

6.4.2. Further, the total housing requirement for Peterborough is over 17,000 dwellings from 2018 to 2036, 60% of which will be contained in urban extensions to Peterborough.

6.4.3. Specifically, land is safeguarded for future key infrastructure adjacent to the roundabouts at the A47/A1 junction under Policy LP15 of the Plan.

6.4.4. Other policies of relevance include LP19: The Historic Environment, which relates to land north of the Scheme, requires proposals affecting heritage assets to be accompanied by a heritage statement. This is ES Chapter 6 Cultural Heritage (**TR010039/APP/6.1**). Further, where a development proposal will impact significantly on a designated heritage asset, this harm will be weighed against the public benefits of the proposal. These issues are addressed in ES Chapter 6 Cultural Heritage (**TR010039/APP/6.1**) and are summarised in Table 6.1.

6.4.5. Policy LP28: Biodiversity and Geological Conservation affects land in the vicinity of the A47/A1 junction and to the north of the Scheme. In these areas development will only be permitted where any necessary mitigation, taking account of other developments, results in no adverse effects on the integrity of international sites or national and local nature conservation sites and habitats, where the benefits of the development clearly outweigh any adverse impacts. Development proposals should deliver a net gain in biodiversity where possible. These issues are addressed in ES Chapter 8 Biodiversity (**TR010039/APP/6.1**) and the findings are summarised in Table 6.1.

6.4.1. Policy NP24: The Nene Valley applies to land in the south of the Scheme. Proposals in this area should take account of the landscape setting and river valley, taking account of the potential for flood risk, impact on recreation and public

access and, biodiversity and any designated sites therein. These issues are addressed respectively in ES Chapter 7 Landscape, Chapter 13 Road Drainage and the Water Environment, Chapter 13 Population and Human Health and Chapter 8 Biodiversity (**TR010039/APP/6.1**) and the findings are summarised in Table 6.1 above.

### Peterborough Flood and Water Management Supplementary Planning Document (SPD) July 2019

6.4.2. The SPD provides further guidance to support Policy LP32 – flood and water management of the Peterborough Local Plan (July 2019) and focuses on managing flood risk and the water environment in and around new developments in Peterborough. It provides advice on the information required in relation to flood risk assessments, surface water drainage issues and water quality in support of development proposals and how to manage risk.

6.4.3. Its content has been taken into account in preparation of ES Chapter 13 (**TR010029/APP/6.1**), Appendix 13.1: Flood Risk Assessment (**TR010039PP/6.2**), Appendix 13.2: drainage strategy (**TR010039/APP/6.2**), Appendix 13.3: groundwater assessment (**TR010039/APP/6.2**) and Figures 13.1 to 13.8 (**TR010039/APP/6.3**).

### Peterborough Green Infrastructure & Biodiversity Supplementary Planning Document (SPD) July 2019

6.4.4. The SPD sets out a vision for how Peterborough's network of green infrastructure and associated biodiversity should be protected and enhanced during the next 20 years. It aims to provide practical guidance and advice on how Green Infrastructure and biodiversity considerations should be integrated into the development process. It expands on Local Plan policies LP22 Green Infrastructure Network and LP28 Biodiversity and Geodiversity Conservation which seek to ensure respectively that existing and new green infrastructure is considered and integrated into scheme designs from the outset and that development proposals seek to ensure no net loss to biodiversity and that a net gain in biodiversity is achieved wherever possible.

6.4.5. ES Chapters 8 Biodiversity and 12 Population and Human Health (**TR010039/APP/6.1**) take account of the requirements of the SPD in promoting green infrastructure as part of the Scheme and ensuring any impacts are mitigated against where possible.

### Peterborough Integrated Development Programme (IDP) – November 2009

*6.4.6.* The IDP's purpose is to provide a single delivery programme for strategic capital-led infrastructure to allow for appropriately phased growth and development in the period to 2031. Paragraph 1.4 states *"the projects that are proposed as priorities for funding are not unstructured 'wish-lists', instead they are well evidenced investment priorities that will contribute in an unambiguous manner to enhancing the area's economic performance, accommodating physical growth and providing a basis for prosperous and sustainable communities."*

6.4.7. Though there are no site-specific proposals, one of the IDP's transport goals includes supporting economic growth by improving the levels of accessibility to and from employment and key services.

### Local Transport Policy

*Peterborough Long Term Transport Strategy 2011-2026 (LTTS)*

6.4.8. The LTTS sets out a high-level transport strategy which is required to deliver the local growth agenda as outlined in the Peterborough Local Development Framework Strategy and achieving the Home of the Environmental Capital aspirations of the Council.

6.4.9. It is intended that infrastructure requirements to accommodate a projected housing growth of 25,000 house up to 2026 will be provided as required. The A47 A1 to Sutton dualling is listed as a long term (2021-2026) network improvement scheme.

*The Cambridgeshire & Peterborough Local Transport Plan February 2020.*

6.4.10. The Cambridgeshire and Peterborough Local Transport Plan replaces the Interim Local Transport Plan, which was published in June 2017 and was based upon the existing Local Transport Plans for Cambridgeshire (Local Transport Plan 3) and Peterborough (Local Transport Plan 4). The Plan describes how transport interventions can be used to address current and future challenges and opportunities for Cambridgeshire and Peterborough. It sets out the policies and strategies needed to secure growth and ensure that planned large-scale development can take place in the county in a sustainable way.

6.4.11. The Plan's goals are to deliver economic growth and opportunity; provide an accessible transport system; and preserve and enhance the built, natural and historic environment and seek to achieve net zero carbon. The objectives underpin the goals of *inter alia:*

- building a new transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability

- embed a safe systems approach into all planning and transport operations to achieve zero fatalities or serious injuries.

6.4.12. Traffic congestion is noted as *"the most frequent form of disruption to our region's transport network, posing a risk to the Combined Authority's future growth and prosperity."* In this regard, the Authority will seek to *"make the transport network resilient and adaptive to human and environmental disruption, improving journey time reliability."*

6.4.13. It is recognised that the private car remains a key mode for many residents across the Region and the Plan supports targeted highway infrastructure and enhancement schemes such as: *"Dualling of the A47 between Wansford and Sutton along with junction improvement".* The Plan states that this *"would improve journey times and reduce congestion along a key strategic route from Peterborough to the A1 corridor, and the wider North of England, as well as improving road safety along a route with a history of fatal and serious collisions".* In addition, it is recognised that this will help support new housing and help unlock future development sites. Further, continued dualling of the A47 corridor will significantly improving highway accessibility towards London and support the freight and distribution sectors.

## 6.5. Summary

6.5.1. The Peterborough Local Plan has safeguarded land at the junction of the A47/A1 for infrastructure works. It recognises the economic and population growth in the area and need to proactively plan for this through land allocations. The Peterborough LTTS lists the Scheme specifically as a network improvement in the period 2021-26 while the 2020 Cambridgeshire and Peterborough Local Transport Plan also list the dualling both in terms of its local safety and road capacity benefits but also its wider role in economic development and improvements to freight connectivity.

6.5.2. The Scheme accords with the development control policies of the Peterborough Local Plan and related SPDs by demonstrating through the chapters of the ES (**TR010039/APP/6.1**) that any impacts on the natural and built environment can be mitigated against where necessary and, where possible, enhancements can be made. Where any outstanding impacts may remain, national and regional policy support states that the Scheme is essential in the public benefit. The ES chapters (**TR010039/APP/6.1**) address the environmental issues in full.

## Planning Balance

6.5.3. Section 104(7) of the PA 2008 (as amended) requires that applications should be determined in accordance with the relevant National Policy Statement unless the adverse impact of the Scheme would outweigh its benefits. This Case for the Scheme provides an overview of the economic, social and environmental benefits of the Scheme. The potential impacts of the Scheme have also been comprehensively considered and addressed through the management and mitigation measures described in the ES (**TR010039/APP/6.1**). The balance of benefits and adverse impacts is also considered through the Applicant's response to the balancing exercises for relevant topic areas set out in the NPS NN Accordance Tables (**TR010039/APP/7.2**).

6.5.1. The ES (**TR010039/APP/6.1**) has considered each impact assessment topic according to whether there are likely to be significant residual environmental effects following mitigation, in line with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended). The conclusions from the ES have been reviewed in order to consider the conformity of the Scheme with the NPS NN, the NPPF, the development plan, plus other infrastructure and transport plans and strategies. Any unavoidable adverse environmental effects which may remain following mitigation are outweighed by the public benefit that will accrue as a result of the Scheme and the Government's commitment to upgrading the SRN. This includes the impact on the scheduled monument, which is considered to constitute less than substantial harm. This is because only a relatively small section of the scheduled monument will be impacted on and therefore the significance of the heritage asset, including the key elements of its special historic interest, will not be substantially affected. Historic England agrees that the harm to the schedule monument caused by the Scheme will be less than substantial.

6.5.2. In terms of adherence to national policy requirements, the Scheme demonstrates compliance with the Government's strategic vision for the development of the national road network. The need for the Scheme is demonstrated by its inclusion within the RIS and within national, regional and local transport and planning policy. Section 3(6) of the Infrastructure Act 2015 places a duty on the SoS to comply with the provisions of the RIS.

6.5.3. By increasing road capacity, reducing congestion and improving safety on the A47 between Wansford and Sutton, and improving green infrastructure, the Scheme will encourage inward investment, support housebuilding and support the economic growth and distribution objectives contained in the Cambridgeshire and Peterborough Independent Economic Review and the Cambridgeshire and Peterborough Strategic Spatial Framework. The 2020 Local Transport Plan also emphasises the interrelationship between the region's transport objectives and

the delivery of wider goals relating to the economy, society and environment and both it and the Peterborough LTTS specifically list the Scheme as a network improvement.

6.5.4. The Scheme accords with the development control policies of the Peterborough Local Plan and related SPDs by demonstrating through the chapters of the ES (**TR010039/APP/6.1**) that any impacts on the natural and built environment can be managed and mitigated against where necessary and, where possible, enhancements can be made. Policy at all levels is supportive of the Scheme and overall, its public benefits outweigh any unavoidable adverse environmental effects which may remain. The ES (**TR010039/APP/6.1**) considers these issues in full.

6.5.5. Following the detailed consideration of options, the Scheme is considered by the Applicant to be the best available route for the dualling of the A47 between Wansford and Sutton. It is fully funded as illustrated in the Funding Statement (**TR010040/APP/4.2**) and if granted, the DCO will include the compulsory acquisition powers required to deliver the Scheme.

6.5.6. The Scheme therefore comprises an opportunity to secure a deliverable and fully funded A47 dualling between Wansford and Sutton in accordance with the RIS, and current and emerging planning and transport policies.

# 7. Conclusions

## 7.1. Overview

7.1.1. This Case for the Scheme sets out the policy context against which the Scheme should be assessed. It demonstrates a clear justification for the Scheme grounded in national, regional and local planning and transport policy.

7.1.2. The NPS NN, NIDP and the RIS set out a strong base for delivery of national networks that meet the country's long-term network needs, while improving the attractiveness of Peterborough as a business destination and supporting a prosperous and competitive economy and improving the quality of life for all.

## 7.2. Need and Scheme Objectives

7.2.1. The single carriageway section of the A47 between Wansford and Sutton experiences congestion and is currently operating at over capacity, leading to longer and unreliable journey times.

7.2.2. Population growth in Peterborough is high and a significant programme of housebuilding is planned. This is boosting economic development in the area where growth is currently outstripping the UK average.

7.2.3. Safety on the existing route is also currently compromised and a high accident rate has been an unfortunate effect. The A47 is ranked 2nd nationally for fatalities on A roads and the accident severity ratio is above average. During the period October 2011 to September 2016 a total of 2 fatal accidents, 5 serious accidents and 34 slight accidents were recorded along the section of the A47 which is subject to the Scheme. The 41 accidents resulted in 64 casualties: 51 slight, 10 serious and 3 fatal.

7.2.4. The committed solution to the congestion and safety issues, defined in the RIS is *"Dualling of the A47 between the A1 and the dual carriageway section west of Peterborough"*. This solution will also unlock economic growth and development in the area. This is considered essential at a regional level and is a condition of the government's power transfer to the combined authority. It is also strongly promoted by the A47 Alliance.

## 7.3. Alternatives, the Scheme and its Benefits

7.3.1. A wide ranging and detailed optioneering process, involving extensive study and consultation, has considered reasonable alternatives, ultimately resulting in the announcement of the preferred route in August 2017 *'Option 2 – building a new dual carriageway, partly to the north and also to the south of the existing A47 plus a free flow link from the A1 southbound'*.

7.3.2. The Scheme has been further developed since the preferred route announcement. Taking on board feedback received from ongoing stakeholder engagement the design of the Scheme has been developed to that now set out within the DCO application. It is considered to be the best option to meet the defined need and objectives, including the delivery of a comprehensive set of benefits as detailed in this document.

7.3.3. Transportation benefits will include reduce congestion-related delay, improve journey time reliability, increase the overall capacity of the A47 and improve road safety and traffic flow, assisting the region's attractiveness for business and helping promote a competitive regional economy consistent with national and local planning objectives for transport, economy and the environment.

7.3.4. The Scheme is supported by an Environmental Impact Assessment to establish the impacts and mitigation measures needed to meet the Scheme objective of avoiding unacceptable impacts on the surrounding natural and historic environment and landscape and optimise opportunities for enhancement.

## 7.4. Compatibility with NPS NN

7.4.1. The Scheme demonstrates compliance with the NPS NN, including the Government's strategic vision for the development of the national road network, wider policies for economic performance, environment, safety, technology, sustainable transport and accessibility, as well as journey reliability and the experience of road users. Where impacts are generated by the construction or operation of the Scheme, it has been demonstrated through careful and comprehensive assessment that the substantial and long-lasting benefits, such as the extensive transportation, economic and community benefits, will outweigh the limited residual impacts identified. Policy at all levels supports the Scheme's development.

7.4.2. The detailed NPS NN Accordance Tables (**TR010039/APP/7.2**) demonstrate the conformity of the Scheme with the NPS NN. Overall, it is considered that the public benefits provided by the Scheme are clear, founded in factual evidence and outweigh any unavoidable impacts. This document has shown that, where the NPS NN requires a balanced judgement between harm and benefits, the evidence demonstrates that the Scheme complies with the NPS and, its benefits significantly outweigh impacts.

## 7.5. Delivery of Government Policy and Programmes

7.5.1. The Scheme forms part of the Government's vision and strategic objectives for improving the UK's transport infrastructure as set out in detail in Chapter 3 of this Statement. The Scheme would meet the identified need to provide safe,

expeditious and resilient networks that better support social and economic activity; and to provide a transport network that can stimulate and support economic growth as set out in the NPS NN.

7.5.2. The A47 Wansford to Sutton is a Committed Scheme in the RIS. The Scheme also fulfils the aims of the NIDP and the Highways England Delivery Plan.

## 7.6. Delivery of Local Planning and Transport Policy

7.6.1. The Scheme delivers the aims of the Peterborough Local Plan and the Local Transport Plan 2020 which supports the Scheme improvements to the A47. The Scheme complies with the development control policies of the Local Plan in addressing its potential impacts on the natural and built environment, mitigating and enhancing where possible. It is demonstrated that the public benefits of the Scheme outweigh any unavoidable residual impacts.

7.6.2. The economic assessment demonstrates that, taking into account the total Scheme costs, the effects of delays during construction, accident benefits, indirect taxation benefits, monetised environmental impacts and maintenance costs, the initial Benefit to Cost Ratio represents 'High' Value for Money. Once the wider economic and journey time reliability benefits are factored in, the value for money figure improves further.

## 7.7. The Planning Act (PA) 2008

7.7.1. The PA 2008 requires that, in determining DCO applications, the SoS must have regard to the relevant NPS, the Local Impact Report, any prescribed matters and any other matters the SoS thinks are important and relevant. Paragraph 4.2 of the NPS NN confirms that there is a presumption in favour of granting development consent for national networks.

7.7.2. The PA 2008 also states that DCO applications should be determined in accordance with the relevant NPS except in certain circumstances including where adverse impacts would outweigh benefits, or where to do so would be unlawful, in breach of duty or condition, or in breach of international obligations.

7.7.3. The Scheme complies with the NPS NN and accords with all other relevant and important matters which need to be taken into consideration, including the adopted development plan for the local area and the NPPF.