Suffolk County Council

IPSWICH NORTHERN ROUTE

Strategic Outline Business case

70044285-WSP-INR-TE-RPT-SOBC-01
JANUARY 2020

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PUBLIC

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EXECUTIVE SUMMARY

INTRODUCTION

This document is the Strategic Outline Business Case (SOBC) for the Ipswich Northern Route (INR) project – a proposed new road linking the A14 and the A12 to the north of Ipswich. Three route options are being considered, ranging in cost from £342,210,000 to £385,055,000.[1]

The SOBC is the first phase of the Department for Transport's (DfT) decision making process. The SOBC defines the scope of work, makes the case for change and assesses options to tackle the problem. The outcome of this work provides a framework to inform the decision of whether or not to proceed with the project; the next stage would be phase 2 the Outline Business Case (OBC). The form and content of the SOBC follows published DfT guidance, including Transport Analysis Guidance (TAG) and the HM Treasury guidance in the Green Book.

The SOBC is made of five separate cases, which together make a compelling case for the project:

- Strategic case
- Economic case
- Financial case
- Commercial case
- Management case

The SOBC would support a possible application by scheme promoters Suffolk County Council (SCC) and partners: Babergh and Mid Suffolk District Councils, East Suffolk Council, Ipswich Borough Council and West Suffolk Council, to the DfT for funding from the Large Local Majors (LLM) fund.

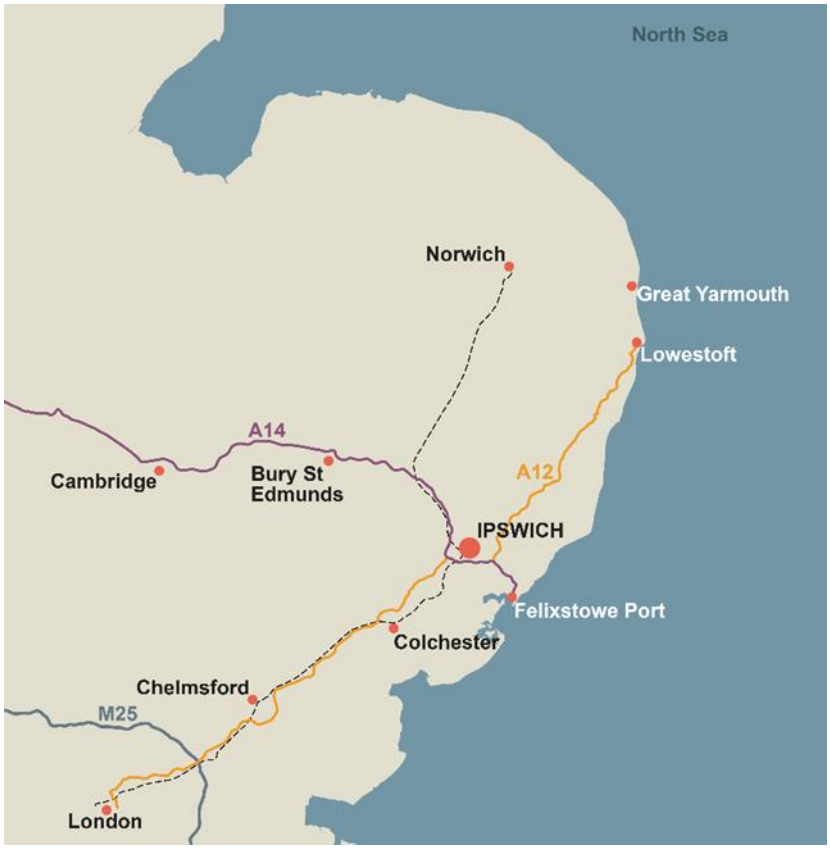
[1] The costs presented in this SOBC are in a different price base to those presented during the public consultation on the project. The costs in the public consultation were in 2027 prices whereas the costs presented here are in 2019 prices.

HISTORY OF THE PROJECT

- **2016 -** Stage 1 Strategic Study report produced to assess the strategic viability of transport capacity improvements to support growth in the wider Ipswich area.
- **2019 -** Options Assessment Report (OAR) considered a wide range of options
- **2019 -** Public consultation
- **2019 -** Strategic Outline Business Case (SOBC) assesses three shortlisted options

PROJECT LOCATION

The INR would be located north of Ipswich in the County of Suffolk, as shown below.



The INR would provide additional connectivity between the A12 (London to Lowestoft and Great Yarmouth Road) with the nationally significant A14 trunk road which links the Port of Felixstowe with the Midlands. The proximity of Ipswich to the east coast of England and its strategic position between London, Cambridge and Norwich enhances the expected area of influence for this project.

PROJECT DESCRIPTION

The INR would provide a new strategic transport link connecting the A14 and A12 to the north of Ipswich. The project has significant potential to relieve congestion on the existing east-west links and the A14, and to facilitate movements in and around Ipswich, enabling connectivity to key routes, easing bottlenecks around Ipswich and the wider area. It would improve accessibility and is expected to enable new development, helping Ipswich to maintain its role as a key driver of economic growth.

OPTIONS ASSESSED

The Options Appraisal Report (OAR) considered a total of 32 options, including bus, rail, road, smart technology and other solutions, which could deliver better, more reliable journeys and facilitate and support the delivery of housing and employment growth across Suffolk. The project objectives were developed and refined by SCC in partnership with the local Borough and District Councils and assessed using the DfT Early Assessment and Sifting Tool (EAST). Following this assessment, three Highway Route options have been identified, and taken forward in this SOBC:

- **Outer Route** – this is the most northern option and connects the A14 near Coddenham via the A140 to the A12 at Woods Lane.
- **Middle Route** – this option is south of the outer route and connects the A14 near Claydon to the A12 at Woodbridge.
- **Inner Route** – this option is the closest to Ipswich and connects the A14 near Claydon to the A12 near Martlesham.

EXISTING PROBLEMS

The project aims to address problems in the following categories:

- Congestion and lack of network resilience
- "Rat-running" traffic on unsuitable rural roads
- Increasing traffic growth and car dependent commuting patterns
- Highway network resilience problems associated with closures of Orwell Bridge
- Noise and air pollution in the Ipswich area
- Housing demand outstripping supply in the wider Ipswich area
- Inadequate supply of affordable housing
- Widening productivity gap in Suffolk compared to the rest of the UK

In the longer term, the combination of impacts outlined above present barriers to economic growth and would have a significant impact on the region's productivity and economic growth. The road infrastructure is essential to Suffolk affecting journey quality and experience for all road users - businesses, residents, employees and tourists.

THE NEED FOR THE PROJECT

The project is needed to address existing problems of congestion in and around Ipswich, to support planned growth in housing and to unlock the long-term potential for economic growth. This aligns

with the Government's strategy to continue investment in Britain's transport infrastructure to support housing and employment development and unlock future growth opportunities.

THE SITUATION WITHOUT THE INR

Without the INR, the problems of congestion, rat-running, and poor resilience of the transport network would continue and worsen. Connectivity between the A12, A14, Ipswich town centre and the rest of Suffolk would remain limited, making it difficult to accommodate housing growth, and constraining economic activity. The anticipated growth in Suffolk's population and the need to provide housing and employment would add to the problems of an already constrained housing market, if the transport network is unable to accommodate this demand.

EXPECTED BENEFITS OF THE INR

The benefits expected from the INR include:

- Reduced congestion on the local and strategic road network
- Improved journey time reliability and network resilience for all users
- Increased opportunities for sustainable travel modes
- Improved air quality and health of the population
- Potential future development of low carbon alternatives
- Enable delivery of 10,000 to 15,000 additional new homes
- Local development and economic growth within Ipswich and wider Suffolk area

POLICY CONTEXT

The project has a good strategic fit with current plans and policies at a national, regional and local level:

NATIONAL

The Government's vision, highlighted in the 2017 Transport Investment Strategy, is reflected by the INR project which would reduce congestion on the local and strategic road network, and help create a better connected, more reliable transport network for those who depend on it. The design would avoid as far as possible communities and the environmentally sensitive habitats located along the proposed routes, an important requirement of the 2019 National Planning Policy Framework (NPFF). The project would provide additional transport capacity and improve resilience, reflecting the emphasis in the National Infrastructure Delivery Plan (2016-2021) on infrastructure as a platform for economic growth.

REGIONAL

The transport strategies relevant to the East of England, East Anglia and Suffolk set out ambitious growth targets for this region. Suffolk's Local Transport Plan (LTP) (2011-2031) sets out how transport would support sustainable economic growth, an objective referred to across the other regional policy documents. The LTP describes how this would be achieved through the maintenance of transport networks, tackling congestion, improving access to jobs and encouraging a shift to more sustainable travel patterns. The INR would contribute to all these aims and would help support the expected regional growth. This is reiterated in the Transport East Strategic Transport Plan (2019),

which highlights the need for enhanced transport links between the region's fastest growing places and business clusters to create an 'Energised Coastal Community'.

LOCAL

The local plans of the Borough and District Councils supporting this stage of the project share a similar vision for Suffolk - to create an accessible, economically active town that is well-connected and enables the efficient transport of people, whilst promoting healthy and active lifestyles. The strategic infrastructure priorities in the Suffolk Coastal Final Draft Local Plan (January 2019) indicate that new and improved infrastructure is key to ensuring the planned growth is sustainable. The A12 and A14 are congestion hotspots in need of investment, and there are areas with potential to attract further development if the INR is implemented. The current Ipswich Local Plan highlights the aspirations for Ipswich town as a place to live, visit, work, study and invest in. The INR would help achieve this vision. The INR is not required for the delivery of growth in the current and emerging local plans.

OBJECTIVES

Four strategic objectives have been developed for the project:

- Improve business' and people's experience of using the A14 and provide additional route resilience;
- Support the existing local economy through improved connectivity, making Suffolk the best place to do business;
- Provide additional travel options, helping to optimise existing road capacity in Ipswich, leading to environmental improvements; and
- Directly support new homes and jobs growth to ensure the future success of Suffolk.

These align closely with the objectives of the LLM programme and the government's Transport Investment Strategy. The SOBC also includes project specific objectives, which set out in more detail how the strategic objectives would be achieved.

CONSTRAINTS

The following types of constraint have been identified, and would be managed by SCC and Borough and District Councils as part of the detailed design process as the project develops:

- **Cultural Heritage** – key sites include listed properties and scheduled monuments
- **Agricultural and Greenfield Land** – proposed routes would pass through farming land
- **Transport Infrastructure** – crossing rail corridors and key connecting roads would be considered
- **Commercial and residential properties** – village centres, farms and commercial properties would need to be avoided as much as possible
- **Environmental** – air quality, noise, landscape, woodland, rivers, flood zones and biodiversity constraints have been identified and design would be sympathetic to these constraints

- **Financial** - The cost of the project would exceed local funding capacity and therefore to deliver the project, funding support would be required from the Government. A number of options have been identified that could provide the 15% local contribution
- **Public acceptability** – there is a considerable level of opposition to the project in addition to strong areas of support, at this early stage.

THE ECONOMIC CASE FOR THE PROJECT

TRANSPORT IMPACTS

The economic case adopts a holistic approach to identifying and assessing the various impacts of the project to determine the overall value for money for the route options. It considers the costs of developing, building, operating and maintaining the project, and the full range of its impacts, consistent with the level of detail available at this early stage, including those which can and cannot be monetised.

Benefits

Journey time savings are the most significant contributor to the forecast transport-related benefits of the INR. The INR is also expected to reduce greenhouse gas emissions by reducing congestion. Impacts of induced demand would be considered at the next phase of the project. Economic benefits would also arise from savings in fuel and vehicle operating costs and indirect tax revenues. Wider economic benefits from increased business output are calculated and used to produce an adjusted value of the benefits. These economic benefits represent the economic value of the project to society.

Costs

The benefits have been compared with the whole life economic costs of the project (over the DfT standard of 60 years), including design, land and construction costs and future maintenance costs. The economic costs include allowances for risk and optimism bias. They represent the economic cost to society of delivering and maintaining the scheme.

Benefit-cost ratio (BCR)

The three route options have been assessed in accordance with DfT's Transport Appraisal Guidance (TAG). In the appraisal, both costs and benefits over a 60-year appraisal period are adjusted to 2010 prices and values and discounted to 2010, enabling the DfT to compare prospective schemes on a level playing field when making funding decisions.

The present values of benefits, costs, BCR and adjusted BCR for each of the three options are shown below:

£000's	Outer Route	Middle Route	Inner Route
Initial Present Value of Benefits (PVB)	352,480	514,274	611,425
Present Value of Costs (PVC)	272,446	300,091	306,980

Initial Net Present Value (NPV)	80,013	214,183	304,445
Initial BCR	1.3:1	1.7:1	2.0:1
Adjusted Present Value of Benefits (PVB)	362,091	528,177	628,697
Adjusted Net Present Value (NPV)	89,625	228,086	321,717
Adjusted BCR	1.3:1	1.8:1	2.1:1
Value for money category	Low	Medium	High

The Inner Route would deliver the greatest benefits relative to costs, with a BCR at 2.1:1. This represents high value for money, assessed in line with the guidance. Depending on the option, the value for money category could be “Low” (Outer Route), “Medium” (Middle Route) or “High” (Inner Route). The high value for money of the Inner Route is facilitated by the route’s proximity to both Ipswich town centre and the existing A14 bypass to the south of Ipswich. The INR supports the local road users making shorter trips on the local east/west network.

Sensitivity analysis undertaken shows that the project occupies a strong likelihood of achieving ‘Medium’ value for money, under a range of circumstances, with the potential for this to achieve ‘High’ for the Inner Route. If the project progresses to the OBC stage, further assessments to determine value for money would be carried out.

ENVIRONMENTAL IMPACTS

Using TAG’s recommended 7-point scoring system, each of the three shortlisted route options has been scored against the following impacts:

- Noise
- Air Quality
- Greenhouse gases
- Landscape
- Historic environment
- Biodiversity
- Water Environment

The table below presents a summary of the findings of the early desktop environmental impacts appraisal of the three corridors for each of the above.

Option	Noise	Air Quality	Greenhouse Gases	Landscape	Historic Environment	Biodiversity	Water Environment

Outer Route	Slight Adverse	Slight Adverse	Neutral	Moderate Adverse	Large Adverse	Large adverse	Slight Adverse
Middle Route	Slight Adverse	Slight Adverse	Neutral	Moderate Adverse	Moderate Adverse	Large adverse	Moderate Adverse
Inner Route	Slight Adverse	Slight Adverse	Neutral	Moderate Adverse	Moderate Adverse	Large adverse	Moderate Adverse

The scoring guide used to conduct the environmental option appraisal is presented below:

- Beneficial (Slight, Moderate and Large): The proposed option is expected to have a positive impact.
- Neutral effects: The proposed option is not expected to have noticeable change on the environment.
- Slight Adverse (negative) effect: This may require additional standard mitigation measures.
- Moderate Adverse (negative) effect: This may require a change in design or the implementation of additional specific mitigation measures.
- Large Adverse (negative) effect: The proposed option is very likely to require a change in design in addition to the implementation of standard mitigation measures.

THE FINANCIAL CASE FOR THE PROJECT

The costs of each option have been estimated and include:

- Construction Contracts
- Design Investigations, Surveys, Procurement, Supervision and Client Costs
- Statutory Undertakers Works
- Land and Compensation

The costs in the financial case include allowances for risk (10%) and inflation, but not optimism bias, and are expressed at out-turn (completion) prices. They represent the amount of money that would need to be spent in order to deliver the project.

Subject to funding and planning consents, the earliest the project could be delivered is by the financial year 2027/2028, with the opening date in late 2027. Some land and compensation costs would be incurred after that date.

The costs associated with each option are set out below. Cost estimates would be revised following selection of a preferred option and detailed design.

Project Elements	Outer Route (£,000)	Middle Route (£,000)	Inner Route (£,000)
Construction Contracts	176,316	195,983	203,842
Design Investigations, Surveys, Procurement, Supervision and Client Costs	52,898	58,793	61,152

Statutory Undertakers Works	13,224	14,699	10,191
Land and Compensation	15,700	14,800	15,300
Risk (10%)	25,815	28,428	29,052
Adjustment to out-turn (inflation)	58,257	64,061	65,518
Project Cost (out-turn prices)	342,210	376,764	385,055

The INR would be a major new route which would result in operation and maintenance requirements. All maintenance and operation costs would be fulfilled as part of the maintenance regime operated by SCC. The average cost per annum would be circa £710,000 in current prices.

Currently the main source of funding (85%) identified to deliver this project is the DfT's Local Large Majors (LLM) fund. The rest of the funding would comprise of funding from SCC, although SCC and the supporting district councils are willing to discuss alternative funding methods with the Department to increase the contributions of match funding locally or via third parties. As the project develops potential funding routes would be considered further.

THE COMMERCIAL CASE FOR THE PROJECT

The project is commercially viable with a robust contracting and procurement strategy. The commercial viability of the project is important for ensuring that the project is delivered within budget and the opportunities exist to maximise the development and economic objectives associated with the project. The future economic prosperity of Suffolk would be used as an indicator to determine the success of the INR project.

At this early stage, the commercial case for this SOBC is limited and no formal document for procurement has been produced. It is expected that project would use an OJEU 'restricted procedure' procurement tendering process, which has been utilised by SCC on other large-scale transport infrastructure projects. The UK Government Construction 2025 strategy recommends that projects such as this one should be procured using a two-stage approach with Early Contractor Involvement. For the construction contract to be tendered, the detailed design needs to be completed.

The main objective is to ensure that the project is delivered within budget and maximises the opportunities to achieve the economic objectives associated with the INR project. The method of procurement for this project has not yet been developed.

The construction contract would include clauses to facilitate the transfer of appropriate risks from the Council to the contractor, such as risks associated with construction costs increasing above those predicted in the financial case.

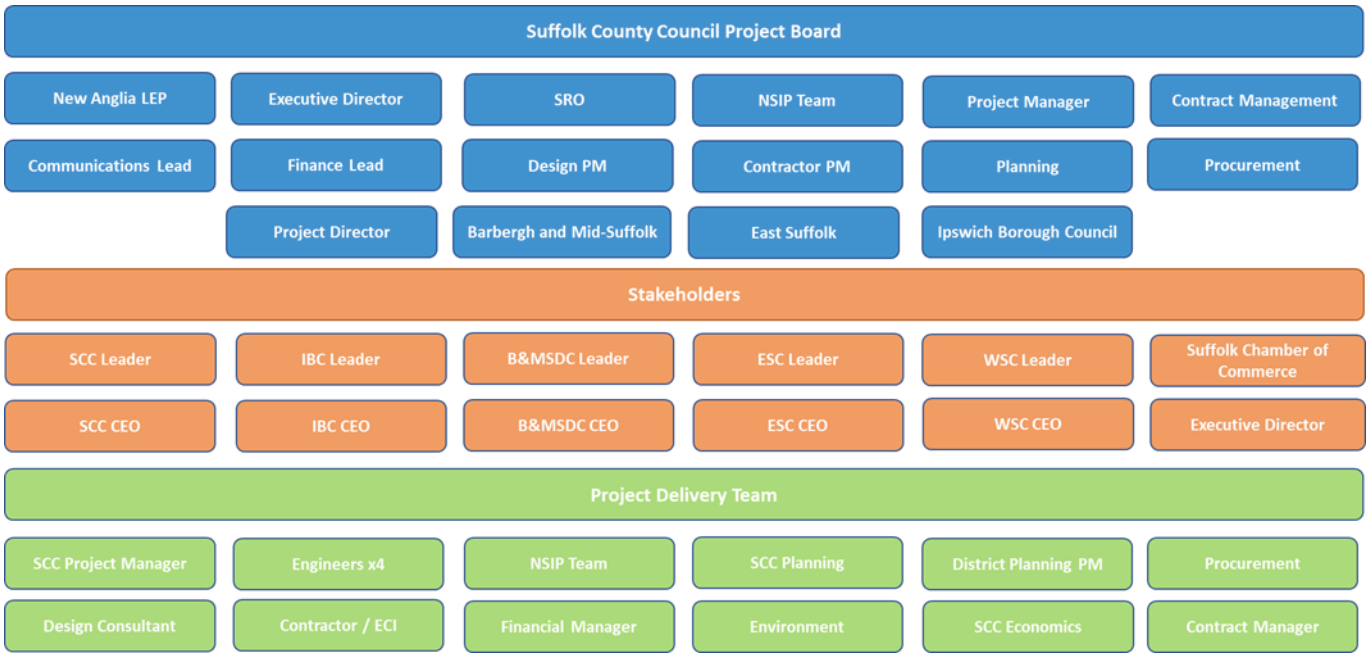
THE MANAGEMENT CASE FOR THE PROJECT

EXPERIENCE

The delivery of the project would build upon experience gained with several major highway and transport schemes delivered by SCC in recent times.

GOVERNANCE

A well-functioning governance structure would be crucial to the successful delivery of the project. SCC would establish a Project Board, a Project Delivery Team and a Stakeholder Group to work together to successfully deliver the project. The high-level governance structure for the project is illustrated below. As the project develops members of staff would be assigned to the roles identified.



PROGRAMME

A project programme has been developed setting out all the key project tasks and their duration, the interactions between each of the tasks, and key milestones. The earliest that construction could begin is 2024, with estimated completion by the end of 2027, subject to approvals and funding.

CONSULTATION AND ENGAGEMENT

Stakeholders who are likely to be affected by the project, or who have the potential to influence the outcome, would be consulted as the project progresses to help guide option development. The individual/groups of stakeholders consulted includes:

- Department for Transport (DfT)
- Local authorities and councillors in Suffolk, i.e. borough, district, town and parish councils
- Highways England
- Network Rail
- Local MPs
- Local businesses including Utility companies and Freight Transport Association
- New Anglia Local Enterprise Partnerships (LEP)
- Landowners
- Statutory bodies, i.e. Environment Agency, Natural England, Historic England
- Interest groups and societies, i.e. environment, cycling, Ipswich Society
- Education
- Residents and community members including minority groups

- Developers

Respondents in favour of the project, were focussed in and around Ipswich, these areas would benefit directly from the project and experience limited negative impacts. Some key stakeholders, including Suffolk Chamber of Commerce and Ipswich Borough Council were also very supportive of the project and the economic and transport benefits it would bring. There is also a high level of opposition from some individuals and groups. The results of the consultation are summarised in the Management Case.

RISK

At this early stage of the business case development, the project risks have been assessed and a risk register prepared to quantify the risks. Risks have been identified during multi-disciplinary discussions with technical experts and a project risk register has been produced. The risk management strategy is in line with the HM Treasury Green Book's four-stage process, as outlined below:

- Identification of risk
- Quantification of risk- assessing the impacts and likelihood of risk
- Establish response plan and responsibilities
- Implement and review

The adoption of this strategy is to ensure that there is an ongoing review of the risk register to ensure that mitigation is identified, and updates are made if necessary and effective controls are implemented during project development and delivery. The project risks have been scored based on their likelihood and severity and appropriate mitigation proposed as a result.

CONCLUSION

The outcome of the DfT assessment of options indicates that there is a case for continuing to develop the INR project. There is a clear need to address existing problems of congestion and delay, to support planned housing development without making existing problems worse, and to stimulate economic activity and growth. This SOBC has identified options to provide additional capacity that would address this need. The project aligns well with local, regional and national policy objectives. Clear objectives have been set, and extensive option assessment undertaken to identify three potential routes.

A detailed economic assessment shows that the project would offer value for money in economic terms to society, justifying the expenditure.

Subject to funding approval, the project would be affordable and commercially deliverable. A management structure has been identified that could develop and in due course deliver the scheme, with a robust approach to the management of risk. Extensive first stage/early consultation has already taken place. If the project continues there would be ongoing engagement relating to a preferred route and developing a design that is sensitive to community and environmental issues.

Suffolk County Council announced a Climate Emergency in March 2019, after work commenced on the SOBC. Therefore, this will be a key factor when considering whether or not to progress with the project.

1 THE STRATEGIC CASE

1.1 INTRODUCTION

1.1.1. Suffolk County Council (SCC) has commissioned the delivery of a Department for Transport (DfT) compliant Strategic Outline Business Case (SOBC) for the Ipswich Northern Route (INR) project, a new strategic transport link connecting the A14 and A12 to the north of Ipswich.

1.1.2. The INR SOBC is being developed to support a potential application for project funding from the Large Local Majors (LLM) Fund, which would be considered by the Sub-National Transport Body (STB), Transport East, which develops a high-level transport strategy for the delivery of key infrastructure in Essex, Norfolk, Suffolk Southend-on-Sea and Thurrock.

HISTORY OF THE PROJECT

1.1.3. As part of Ipswich Northern Route, Stage 1 Study Interim Report (2016/2017) an initial local authority stakeholder meeting was held in Ipswich on the 18 October 2016 to discuss the project objectives, and review existing constraints affecting both urban development expansion, and implementation of the INR. This resulted in a broadening of the study area and study scope in turn, triggering the assessment of a wider range of multi-modal transport interventions.

1.1.4. In 2016, the Suffolk County Transport Model (SCTM) was built and validated based on data from the 2011 Census, and mobile phone data collected in 2016, for use in developing travel demand matrices. In late 2016, the SCTM was used to conduct a series of tests to establish whether the latest modelling still provided evidence supporting the northern route. The analysis indicated that the level of travel time saving, that could be achieved through provision of the northern route, was likely to be greater than the high-level cost estimate. The model was also used alongside Transport User Benefit Appraisals (TUBA) software to estimate potential project impacts, and together with early project costs to produce indicative Benefit Cost Ratios (BCRs) which ranged from 1.4:1 to 3.5:1, depending on the project alignment appraised.

1.1.5. In 2019, an Options Assessment Report (OAR) was produced which assessed the existing demographic, socioeconomic and transport conditions in and around Ipswich, and forecast changes in these conditions up to 2031. Forecast growth was derived from committed schemes and development allocations set out in the local and regional policy document. The project objectives were developed and refined by SCC in partnership with the local Borough and District Councils and assessed using the DfT Early Assessment and Sifting Tool (EAST). Through analysis of this data, the OAR forms part of the evidence base for the need for the project.

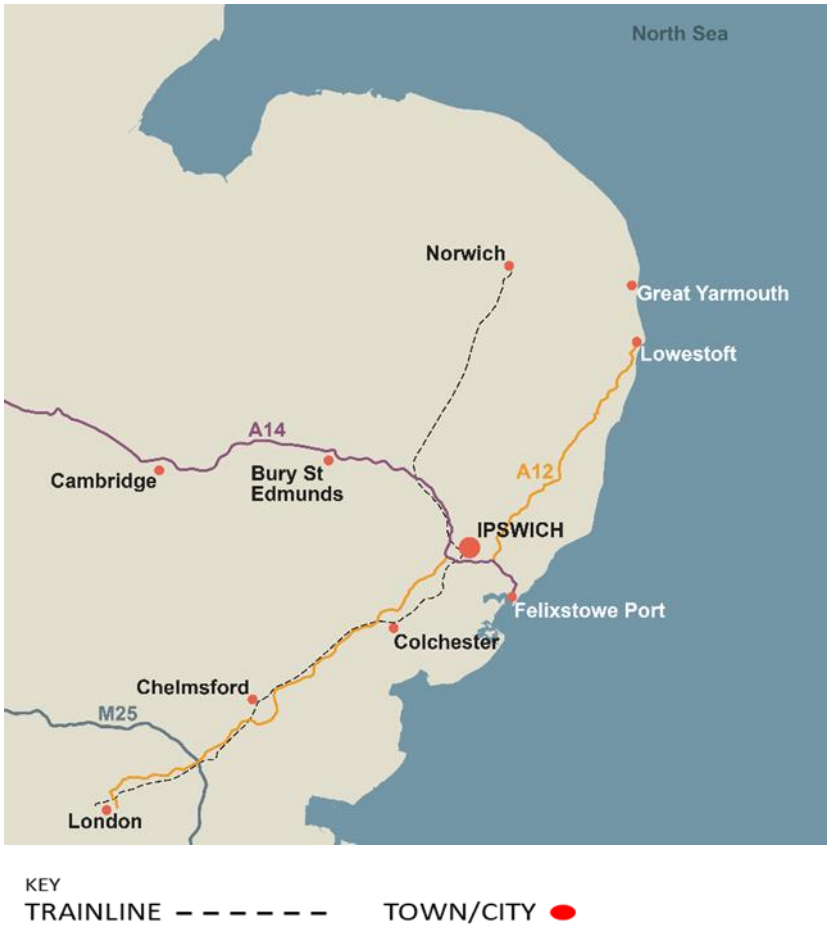
1.1.6. Following option sifting, the OAR identified potential feasible intervention options which could contribute to the delivery of the project objectives, following a preliminary study of their strategic, economic, social, environmental and financial impacts. The OAR process resulted in three northern routes being identified as the top performing options.

1.1.7. The OAR supports this SOBC for the INR study.

Geographical context

1.1.8. Ipswich is the county town located in Suffolk and is a key regional centre in the East of England. It occupies a strategically significant position at the crossroads of the A12 (London to Lowestoft and Great Yarmouth) and the nationally significant A14 trunk road linking the Port of Felixstowe, which is the UK's largest container port handling over 40% of the UK's containerised trade, with the Midlands. Ipswich is also an important rail interchange on the London to Norwich main line. Figure 1-1 shows Ipswich in the context of key urban settlements and transport links in the East of England.

Figure 1-1 - Ipswich geographical context



1.1.9. In the 2011 Census, Ipswich had a population of 133,384, which makes it the largest town in Suffolk and the fourth largest conurbation in the East of England. As it is located between Cambridge and Norwich, the town is well positioned geographically to benefit from other nearby local economic centres of activity. It is similarly well positioned to benefit from and support growth at the Ports of Ipswich, Lowestoft and Felixstowe, as well as providing a supply of labour, and a market for goods and services.

1.1.10. Ipswich also continues to feature as one of the fastest growing towns in the UK in terms of population and annualised Gross Value Added (GVA) per head. Economic activity is especially

strong in regionally important sectors, such as finance, professional services, tourism, and the ports and logistics sectors. The town is home to a large concentration of national and international insurance companies, with a particular specialism in maritime insurance, and it has the UK's largest port for grain export. Ipswich's proximity to the east coast of England, to two Areas of Outstanding Natural Beauty and a strong night-time economy also means that tourism and associated sectors (accommodation and food service sector) are strong.

STUDY SCOPE

1.1.11. The project would introduce a new carriageway between the A14 trunk road and A12 to the north of Ipswich. The Ipswich northern route would provide additional highway capacity, with significant potential to relieve congestion on the existing east-west links and the A14. The route would also facilitate movements in and around the north of Ipswich. The extra capacity is expected to relieve east/west and radial routes around the town which would make it easier for through-traffic to enter and clear the road network around Ipswich and improve sustainable transport opportunities. In turn, the expected capacity benefits would translate to time savings for all road users.

1.2 BUSINESS STRATEGY

1.2.1. This section describes the strategic aims and responsibilities of the project lead, SCC and the local borough and district councils, and sets out the policy context against which the project has been developed.

ORGANISATIONS PROMOTING THE PROJECT

Suffolk County Council

1.2.2. SCC is the administrative authority for the county of Suffolk, England. There are five second tier local Government Borough and District Councils which are supporting this stage of the project; Ipswich, East Suffolk, Mid Suffolk, Babergh and West Suffolk.

1.2.3. SCC has set out its priorities over the next four years:[2]. This vision encompasses three key areas of focus for the County to overcome the future challenges it faces:

- Inclusive growth - Suffolk needs to improve its economic productivity, levels of educational attainment and build more homes, ensuring that everyone benefits, including people who are vulnerable and facing disadvantage.
- Health, care and wellbeing - Caring for Suffolk's vulnerable residents, enabling everyone to live long, healthy and fulfilling lives is one of our top priorities. Thriving families and communities and thriving economies support each other.

[2] Our Priorities 2017-2021, Suffolk County Council, February 2018

- Efficient and effective public services - At a time of diminishing resources, increased demand, and changing customer expectations, we need to change the way that we operate to meet our customers' needs and balance our budget.[3]

1.2.4. Making sure people can connect with their communities, both physically and virtually, is vital for Suffolk's economic growth. Whether that is travelling for work, education or leisure, buying things online or simply Skyping a relative, connectivity is a basic part of 21st century life. Ensuring Suffolk has the right infrastructure support in place is essential.

Ipswich Borough Council

1.2.5. Ipswich is a key driver of economic growth for Suffolk and the local area is thriving commercial sector, ICT sector linked to Adastral Park, a significant port and home to the University of Suffolk.

East Suffolk Council

1.2.6. East Suffolk Council covers the two former districts of Suffolk, Suffolk Coastal District Council and Waveney District Council. It is a new district council created in April 2019, which aims to improve the quality of life for everyone living in, working in and visiting East Suffolk.

Babergh and Mid Suffolk District Council

1.2.7. Mid Suffolk District Council is in partnership with Babergh District Council. They are neighbouring councils covering a large area in the middle of Suffolk that together stretch from Norfolk to Essex.

West Suffolk Council

1.2.8. West Suffolk Council was created in April 2019, it covers the former Forest Health District and the Borough of St Edmundsbury.

POTENTIAL FUNDING SOURCES

Large Local Majors Fund

1.2.9. The Large Local Majors (LLM) schemes should be for local roads which could include but are not limited to roads on the Major Road Network (MRN).

1.2.10. The 2016 Budget announced the launch of a competitive process within the £600m fund for large local transport schemes. This is part of the £12bn Local Growth Fund (LGF).

LLM requirements:

- LLM is now funded through the National Roads Fund, therefore only road schemes will be considered for the programme.

[3] https://www.suffolk.gov.uk/assets/council-and-democracy/our-aims-and-transformation-programmes/SCC-Business-Plan-201920.pdf

- Single schemes should only be delivered or justified as a whole, as opposed to being split into phases or smaller elements.
- LLM schemes should aim for the local or third-party contribution to be at least 15% of the total scheme costs.
- Local schemes that are too large for regular Local Growth Fund allocations and cannot access other existing funding streams.

1.2.11. The core principle of the large local majors fund is to provide funding for those exceptionally large, potentially transformative, local schemes that are too big to be taken forward within regular Growth Deal allocations, and therefore cannot reasonably be funded through any existing funding streams.

1.2.12. The INR would become part of the MRN. It fits with LLM DfT funding guidelines and is consistent with the MRN objectives:

- Support housing delivery
- Support economic growth and rebalancing
- Support the Strategic Road Network
- Support all road users
- Reduce congestion

1.2.13. The LLM objectives are themselves derived from the objectives of the government's 2017 Transport Investment Strategy (TIS). The alignment of the specific INR objectives with the LLM objectives is shown in detail in the logic map (Figure 1-5)

STRATEGIC FIT

1.2.14. The proposed project is closely aligned with the following national, regional and local transport plans, policies and guidance:

National Policies

- Moving Britain Ahead – the Government's Transport Investment Strategy (2017)
- Roads Investment Strategy (2015/16 - 2019/20)
- Industrial Strategy (2017)
- National Infrastructure Delivery Plan (2016 – 2021)
- Roads Investment: The Roads Funding Package (2016)
- National Planning Policy Framework (2019)
- National Policy Statement for National Networks (2014)

Regional Policies and Guidance

- Transport East Strategic Transport Plan (2019)
- New Anglia Local Enterprise Partnership (LEP) Strategic Economic Plan (2017)
- New Anglia LEP Norfolk and Suffolk economic strategy (2017)
- Suffolk Local Transport Plan (2011 - 2031)
- Suffolk Framework for Inclusive Growth (2018)
- East of England plan (2016)

Local Policies

- Ipswich Borough Council Local Plan (2011 – 2031)
- Suffolk Coastal District Final Draft Local Plan (January 2019)
- Draft new Joint Local Plan document for Babergh and Mid Suffolk districts (2019)

NATIONAL POLICIES AND GUIDANCE

1.2.15. The national policies and guidance set by central Government, Government departments, such as the Department for Transport (DfT) and the Ministry of Homes Communities and Local Government (MHCLG), and the alignment of the project to the objectives of these policies, are described below.

Moving Britain Ahead – the Government's Transport Investment Strategy (2017)

1.2.16. The Government's strategy for transport investment, published in July 2017, sets out the case for continued investment in Britain's transport infrastructure. Through this investment, the Government seeks to:

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

1.2.17. Table **1-1** shows how the project would help to deliver these objectives.

Table 1-1 - INR alignment with the TIS

Transport Investment Strategy objectives	Alignment to INR Objective
Create a more reliable, less congested, and better-connected transport network that works for the users who rely on it	Provide additional travel options, helping to optimise existing road capacity in Ipswich, leading to environmental improvements.
Build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities	Improve business' and people's experience of using the A14 and provide additional route resilience as well as increasing capacity.
Enhance our global competitiveness by making Britain a more attractive place to trade and invest	Support the existing local economy through improved connectivity, making Suffolk the best place to do business
Support the creation of new housing	Directly support new homes and jobs growth to ensure the future success of Suffolk.

1.2.18. The INR project would reduce congestion on both local and strategic roads, and help create a better connected, more reliable transport network for those who depend on it.

1.2.19. It would also help to support local economic growth and development, make Ipswich more attractive to investment, and connect planned employment and housing development to markets and jobs.

The Road Investment Strategy (2015/16 - 2019/2020)

1.2.20. The Road Investment Strategy (RIS):

- Highlights the need for a national network of modern roads that meets social, economic and environmental aspirations
- Aims to achieve a network in 2040 that will be smoother for connecting people and businesses to support economic growth
- Seeks to provide capacity and connectivity to support national and local economic activity to combat congestion, and
- Aims to connect communities and provide flexible travel.

1.2.21. The INR project would complement the RIS by easing pressure on congested parts of the A14 and improving resilience. The A14 is the key strategic route for the regional and national economy, and businesses in Suffolk

Industrial Strategy: Building a Britain fit for the future (2017)

1.2.22. The Government's Industrial Strategy[4] sets the importance of five foundations of productivity – the essential attributes of every successful economy:

- Ideas - to have the world's most innovative economy
- People - good jobs and greater earning power for all
- Infrastructure - a major upgrade to the UK's infrastructure
- Business environment - the best place to start and grow a business
- Places - prosperous communities across the UK

1.2.23. Under 'Infrastructure: A major upgrade to the UK's infrastructure', the Industrial Strategy highlights the link between a well-functioning economy and transport infrastructure and considers it essential to future economic growth and prosperity.

1.2.24. "*Providing the right infrastructure in the right places boosts the earning power of people, communities and our businesses*." Transport infrastructure is considered to be particularly important to supporting local growth, in both urban and rural communities, because "*efficient transport systems bring a wide range of work within people's reach, and bring goods from suppliers to markets*", which is why the Government is committed to investing in transport infrastructure.

1.2.25. The strategy outlines that transport investment must seek to create a more reliable, less congested and better-connected transport network; to build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities.

[4] Industrial Strategy White Paper, Building a Britain fit for the future (November 2017)

1.2.26. Under ‘Places’, there is a strong focus on local / regional economic growth which is spread evenly across the country. One of the five foundations is the aspiration to have prosperous communities throughout the UK. Information is provided which highlights the UK as having greater disparities in regional productivity than other European countries, with regional economies outside London lagging behind London and their European counterparts.

1.2.27. The strategy attempts to address this by recommending making better use of local assets, as it is noted that “strong local economies around the world tend to have some key attributes. They have a good supply of skilled labour; they are well connected” – the link is made to the economic theory of agglomeration and how better-connected city regions help to bring together labour, suppliers and consumers into bigger markets, which is a major driver of productivity.

1.2.28. The INR project aligns strongly with the Industrial Strategy. Firstly, it would provide critical infrastructure, upgrading the transport network in a region that would benefit from improved transport connections to support a range of business activities, by bringing people and jobs closer together (through improved journey times). The transport infrastructure should then enable the delivery of between 10,000-15,000 additional new homes, thus increasing the size of the consumer market and labour supply. The delivery of new homes would also generate economic benefit associated with ‘land value uplift’ – the process of adding value to land by developing it from its existing state. Altogether, this should generate agglomeration and productivity benefits - economic growth as well as providing better places for communities to live and thrive.

National Infrastructure Delivery Plan (2016-2021)

1.2.29. The National Infrastructure Delivery Plan, published in March 2016 by the Infrastructure and Projects Authority, emphasises that infrastructure is the foundation upon which our economy is built, and outlines the Government's commitment to deliver better infrastructure in the UK to grow the economy and improve opportunities for people across the country. It:

- Outlines the Government's plans for economic infrastructure over the five-year plan period to support the delivery of housing and social infrastructure.
- Outlines the Government's commitment to providing a step change in the capacity of the Strategic Road Network (SRN).
- States that local roads are a crucial element of the transport system, and that their maintenance and improvement is the responsibility of Local Authorities.

1.2.30. The document highlights the vital importance of the SRN to businesses and the successful functioning of the economy, noting the SRN connects people with jobs, and acts as an artery for freight, connecting employment and labour markets with each other.

1.2.31. The plan highlights that the quality of the road network has declined and congestion, noise and poor air quality have become problems, leading to cities which are close together to do less business together. By transforming regional connectivity across the UK, a reliable and well performing SRN would contribute to higher productivity levels and help to put more people within reach of a wider range of jobs.

1.2.32. The Government sets out its commitment to tackling challenges associated with traffic congestion, air quality and noise, by building a better network with smarter roads, by using modern road building techniques to "*ensure the country has a road network that drives, instead of constrains, growth*". This plan specifically highlights that the Government will provide significant investment to fund new road infrastructure, including the £600m towards the Large Local Majors Fund.

1.2.33. Several of the INR project objectives, which include providing additional transport capacity and improving road resilience, closely align with the National Infrastructure Delivery Plans goal of establishing a more reliable and higher performing strategic road network in order to achieve reduced congestion.

1.2.34. The INR project would improve connectivity, journey time reliability, and reduce existing congestion hotspots, particularly at the primary connections on the A14 Junction around Ipswich and the A12 Martlesham junctions.

National Planning Policy Framework (NPPF), (2019)

1.2.35. The revised National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied, stating that the purpose of the planning system is to help achieve sustainable development. It recognises that there are three separate but inter-linked dimensions: economic, social and environmental, all of which contribute to building a strong, responsive and competitive economy. It does this by identifying as well as coordinating development requirements, including the provision of infrastructure.

1.2.36. The INR project aligns with this framework's economic, social and environmental objectives. Economically and socially it has been developed to facilitate planned housing developments, which should accommodate the predicted population growth in Ipswich Strategic Planning Area, with the number of households in the Ipswich Housing Market Area projected to increase by 17.7% between 2011 and 2031.

1.2.37. Environmentally, it would also provide the transport infrastructure to tackle existing congestion, contributed to by job growth and commuting patterns that are heavily dependent on car use, thus potentially reducing air quality and noise related problems. In addition, the proposed routes have been designed to avoid ecological designations including Ancient Woodland, Sites of Special Scientific Interest (SSSIs) and local nature reserves. The design also intends to avoid, as much as possible, Habitats of Principal Importance which are located along the proposed routes. These habitats include deciduous woodland, floodplain grazing marsh, good quality semi-improved grassland, lowland dry acid grassland and lowland heathland.

Housing White Paper: Fixing our broken housing market (2017)

1.2.38. This White Paper sets out how the Government intends to boost housing supply and, over the long term, create a more efficient housing market whose outcomes more closely match the needs and aspirations of all households as well as, support wider economic prosperity.

1.2.39. The paper recognises that there is a housing market problem, and identifies the following underlying problems:

- That not enough local authorities are planning for the homes they need

- That house building is occurring too slowly (in terms of delivery against objectives)
- The construction industry is too reliant on a small number of 'big players'

1.2.40. The paper proposes the following alleviation steps:

- Step 1: Planning for the right homes in the right places
- Step 2: Building homes faster
- Step 3: Diversifying the market
- Step 4: Helping people now

1.2.41. This paper specifically highlights that increasing housing supply cannot be met by Government alone – it is vital to have local leadership and commitment from a wide range of stakeholders, including private developers.

1.2.42. SCC recognises that housing demand is greater than housing supply in Suffolk, mirroring the national picture, and this is especially true for access to affordable housing. The INR project would facilitate the growth identified in local plans, which should help achieve housing targets and contribute to the Government meeting the wider national targets. The INR would also enable the future delivery of around 10,000 to 15,000 additional homes throughout the wider Ipswich area.

National Policy Statement for National Networks (NPS) (2014)

1.2.43. 'NPS', sets out the need for, and Government's policies to deliver, development of nationally significant infrastructure projects (NSIPs) on the national road and rail networks in England.

The Government's vision and strategic objectives for the national networks are:

- Networks with the capacity and connectivity and resilience to support national and local economic activity and facilitate growth and create jobs.
- Networks which support and improve journey quality, reliability and safety.
- Networks which support the delivery of environmental goals and the move to a low carbon economy.
- Networks which join up our communities and link effectively to each other.

1.2.44. The statement highlights that traffic congestion constrains the economy and impacts negatively on quality of life, through a reduction in job opportunities, increasing business costs, and an increase in environmental pressures.

1.2.45. The INR project would improve the road network in and around the county and provide critical connectivity to the cities of London and Cambridge, which play a vital role in tourist travel, and drives prosperity by connecting haulage companies to the local port of Felixstowe. The objectives to provide additional transport capacity through improving the A14 and A12 align with the National network's objectives to build upon network connectivity and improve capacity. This would also contribute positively by encouraging trade and attracting investment.

1.2.46. In addition, the INR project also aligns with the NPS vision to support the delivery of environmental goals, through our objective to provide additional travel options, helping to optimise existing road

capacity in Ipswich and the wider area and reduce congestion. This should contribute towards environmental improvements, such as improved air quality and reduced noise on existing corridors

REGIONAL POLICIES AND GUIDANCE

1.2.47. This section summarises the relevant regional plans and policies for the East of England, East Anglia and Suffolk.

Emerging Investment Transport Strategy (2019)[5]

1.2.48. The Emerging Investment Strategy will aim to set out several economic strategy ambitions. The following are key themes that will be set out within the emerging document:

- Drive productivity and business growth
- Focus on activity where we have competitive advantage and clear strategic opportunities.
- Strengthen government recognition of distinctive strengths and contribution, based on robust evidence
- Place Norfolk and Suffolk in prime position to secure government and private investment as well as influence policy

1.2.49. The INR project would aim to align with these themes by enhancing links between the fastest growing places and business clusters. This would enable the area to function as a coherent economy by improving productivity and labour mobility which would bring jobs and labour markets closer together. Furthermore, by supporting creation of new housing through the INR the labour pool businesses have access to hire from would expand, as Ipswich would become a more attractive place to live and work. The route would facilitate planned growth and enable the future development of an additional 10,000 to 15,000 homes which would also create construction job opportunities. This would support economic growth and encourage inward investment into the region.

Transport East Strategic Transport Plan (2019)[6]

1.2.50. Transport East is the Sub-National Transport Body (STB) that was established in March 2018 to deliver a "*collective vision for the future of transport and infrastructure in Essex, Norfolk, Suffolk, Southend-on-Sea and Thurrock*". This vision seeks to transform the region's transport connections over the next 30 years to help drive long term economic growth.

1.2.51. A 'Transport East Strategy' is currently being developed that will set out their ambitions and priority areas for improved connectivity and will build upon established growth strategies and corridor-specific evidence, to ensure that the region's transport networks are fit for the future.

[5] Norfolk and Suffolk Industrial Strategy, New Anglia LEP
[6] Transport East's Strategic Transport Plan is outlined in the following URL: https://www.transporteast.org.uk/our-work/

1.2.52. Transport East has identified three key themes / objectives that are said to define the unique transport geography of the region and provide an overarching narrative for the Strategy. These themes are:

- Global Gateways: Transport East will strive for better connected ports and airports to help UK businesses thrive and boost the nation's economy through greater access to international markets facilitating Foreign Direct Investment.
- Multi-Centred Connectivity: Enhanced transport links between the region's fastest growing places and business clusters are seen as an enabler for the area to function as a coherent economy and bring about productivity gains.
- Energised Coastal Communities: Transport East see a re-invented, sustainable South-Eastern coast for the 21st century, which delivers on their ambition to become the UK's foremost all-energy coast, as well as providing a competitive visitor offer.

1.2.53. The INR project would help to deliver against these objectives by providing improved access to the Ports of Ipswich, Lowestoft, Felixstowe and Great Yarmouth, via faster journey times for vehicles using the A12 and A14. The project should also enhance connectivity between the largest economic centres in the region: Ipswich, Norwich and Cambridge, strengthening productivity in these business clusters, by increasing economic efficiency, effectively bringing labour and markets closer together. Because the project brings about reduced congestion over multiple local and strategic roads in and around Ipswich, this would help the visitor economy, allowing tourists to access local attractions more easily.

Integrated Transport Strategy, Transport East (2018)

1.2.54. Transport East's Integrated Transport Strategy, sets out to create an environment where businesses can continue to flourish through further development to transport infrastructure. The strategy looks ahead to the 2040s but focuses on actions required over the next three to five years, to secure the foundations for long-term success.

1.2.55. The strategy has mapped out five key transport themes when considering a vision for future economic successes in the East:

- Quicker, more reliable and resilient connections
- Embracing new technologies and digital connectivity
- Integrated public transport network, people and products mobility around Priority Places and Enterprise Zones
- Innovative on-demand transport solutions and improvement to facilitate local sustainable growth
- A Delivery Plan to help gain momentum to unlock and deliver

1.2.56. The Integrated Transport Strategy demonstrates how improving strategic connectivity in the East would help to open untapped opportunities and drive business growth and productivity.

1.2.57. The document highlights the importance of ensuring the ongoing success and access to and growth at Ipswich, King's Lynn, Great Yarmouth and Lowestoft, as well as airports at London Stansted and Norwich is achieved. This would boost enterprise formation and inward investment within Ipswich that should facilitate the delivery of significant housing and jobs growth.

1.2.58. The STB identifies the need for a more connected and integrated public transport network which would reduce journey times within the region. By delivering a reliable road network in the wider Ipswich area, this would improve the flow of traffic around growing communities and provide better linkages to the ports of Ipswich, Great Yarmouth, Lowestoft and Felixstowe (the busiest container port in the UK and 7th busiest in Europe handling 28 million tonnes of freight per year). The INR supports the objectives of improving accessibility between economic centres in the region to provide better access to jobs to drive business growth and productivity.

The New Anglia Strategic Economic Plan (2018)

1.2.59. The New Anglia Strategic Economic Plan (SEP) set out the ambition to harness distinct sector strengths and natural assets to deliver more jobs, new businesses and housing. It seeks to promote economic growth within the region over and above existing forecasts, and has identified key objectives:

- Investing in high growth, high impact sectors alongside our traditional strengths
- Capitalising on our Green Economy Pathfinder status
- Encouraging enterprise and innovation
- Providing a higher skilled workforce
- Improving connectivity in growth locations across our area
- Investing to deliver superfast broadband and other infrastructure

1.2.60. The achievement of these objectives would unlock the full potential in the area's key sectors, creating new jobs and business. Focussed investment by local partners as well as the Government should improve the area's infrastructure, ensuring businesses have a good supply of skilled workers and the right support for growth.

1.2.61. The goal is to firmly establish the New Anglia economy as a centre for global talent and business excellence; targets for 2026 are:

- 95,000 more jobs - which is 50% higher than forecast
- 10,000 new businesses - which is more than double previous trends
- 117,000 new homes[7] - which is 30% higher than previous delivery
- Increased productivity (added value per job) to equal the national average - increasing Gross Value Added (GVA) from £36,000 a job to £40,000.

1.2.62. Ipswich was identified as one of the fastest-growing towns in the country, benefiting from a high employment rate. The wider Ipswich area has strong growth prospects, including the Adastral Park, the Innovation Martlesham initiative, and locations within the northern Ipswich area that have been

[7] This is planned growth identified in district council's Local Plan in the region. It does not include additional homes that could be built as a result of the INR.

targeted as the largest urban expansion area in Suffolk. Ipswich is also a growing centre for education, including the central campus for the University of Suffolk (UoS).

1.2.63. The SEP recognises that connectivity is vital to the wider Ipswich area and settlements along the A14 corridor, which connects the Port of Felixstowe to the Midlands. Improvements to the A14 would help alleviate the traffic congestion in Ipswich, which is expected to increase by 15%-20% by 2032. Commuters in Ipswich and the wider area favour travel by car, and with an estimated 95,000 more jobs and 10,000 new businesses by 2026, congestion is set to increase as more cars would be present on roads.

1.2.64. Eliminating the effects of congestion could generate up to £509m in local GVA per annum. The main interventions required to improve travel to, within and around Ipswich includes three major junction improvements on the A14 at Ipswich: J55 Copdock, A12 (south)/A14; J57, A14 Nacton; and, J58 A14/A12 (north) Seven Hills improvements. Capacity on the Orwell Bridge will also require need to be addressed in the future.

1.2.65. The SEP sets out a vision for a transformation of the economy, of Norfolk and Suffolk, which would establish New Anglia as a centre of global business excellence. It seeks to deliver more jobs, new businesses, new housing, and increased productivity by 2026. The plan was submitted to the Government by the New Anglia Local Enterprise Partnership (LEP) in March 2014. In response to the SEP, the government agreed a Growth Deal[8] with the LEP in July 2014. The SEP identifies eight growth locations – areas which are expected to grow by at least 1,000 jobs and 1,000 dwellings[9] . These include the wider Ipswich area.

1.2.66. Transport performs a pivotal role in connecting and accessing these growth locations, and a programme for New Anglia's strategic transport infrastructure investment is essential to deliver the objectives of the SEP. For this reason, most of the strategic interventions in the SEP are transport-related, and include:

- Improvements on national trunk roads in the area
- Schemes to directly unlock employment or housing growth

1.2.67. The SEP's transport priorities would directly support development and help prevent transport constraints from being a barrier to growth.

1.2.68. The INR project's objective to "provide positive impact on the Strategic Road Network, A14; particularly for junctions with existing capacity issues, between Copdock roundabout, J55, and Seven Hills roundabout, J58" being directly cited in the New Anglia SEP demonstrates the need for network improvements to mitigate the additional congestion that growth would bring to the region. The additional capacity would enhance the region's attractiveness for investment, unlocking

[8] New Anglia Growth Deal, 7 July 2014: https://www.gov.uk/government/publications/new-anglia-growth-deal
[9] Over the relevant Local Plan period

housing, jobs and tourism opportunities. The INR also supports the objectives of investing in high growth, improving connectivity and infrastructure.

New Anglia Norfolk and Suffolk Economic Strategy (2017)

1.2.69. The Economic Strategy reflects the evolving needs and opportunities of East Anglia's growing local economy and how it can respond and succeed in a fast-changing world. The Government's Industrial Strategy also provides an opportunity to further boost sectors and drive growth.

1.2.70. The strategy has the following ambitions to become:

- A place where high growth businesses with aspirations choose to be: with excellent sites to locate, grow and innovate, with easy access to support and finance. This will drive business growth, jobs growth and GVA.
- An international facing economy with high value exports**:** where our sectors are producing and exporting more value-added goods and services, entering new global markets capitalising on new trade links to other economies. This will drive exports and GVA.
- A high performing productive economy**:** where business have invested in new technology, skills, new techniques, and innovation leading to productivity improvements year on year. This will drive productivity and GVA.
- A well-connected place**:** locally, nationally and internationally. Investment in housing, roads, rail and broadband is coordinated to build the communities and connections that people and businesses need. This will drive housing and GVA.
- An inclusive economy with a highly skilled workforce**:** where everyone benefits from economic growth and wage levels rise above the national average. Norfolk and Suffolk will continue to promote collaboration between business, Higher Education, Further Education, schools and the public sector to provide the training opportunities and work experience that enable businesses and people to fulfil their full potential, by driving skills, employment rate and median wage to produce an improved workforce.
- A centre for the UK's clean energy sector: capitalising on the strength and diversity of the energy sector and supply chain, strategic location, skills base and connectivity to other regions. This will drive GVA.
- A place with a clear, ambitious offer to the world**:** which showcases the strengths of Norfolk and Suffolk to the UK and beyond. Offering diverse, high quality and affordable housing where people want to live, with a strong vibrant culture, leisure offers and a clear sense of why people and business choose to live and work within the area. This will drive GVA, businesses and jobs growth.

1.2.71. The document underlines the importance of the route and therefore supports the Ipswich Northern Route by stating that "we will work to secure the northern relief road, vital improvements to the A14, A12 and further improvements to connectivity to unlock further growth in the town and surrounding area".

Suffolk Local Transport Plan (2011-2031)

1.2.72. Suffolk's Local Transport Plan (LTP3) sets out the county's transport policy, transport strategy and delivery plan for the period 2011 to 2031.

1.2.73. This Local Transport Plan demonstrates how transport will support sustainable economic growth; SCC aims to achieve this is by:

- Maintaining (and in the future improving) our transport networks;
- Tackling congestion;
- Improving access to jobs and markets; and
- Encouraging a shift to more sustainable travel patterns.

1.2.74. The Local Transport Plan has identified challenges that will need to be overcome in the future, such as significant developments in the northern fringe and in the wider Ipswich area, which will add transport pressure on local 'radial' routes and the strategic network.

- Key transport issues for Ipswich are summarised in the Local Transport Plan as:
  - Road maintenance;
  - Urban realm improvement;
  - Tackling congestion;
  - Modernisation of the bus station;
  - Reducing separation between the town centre and waterfront;
  - Better facilities for walking and cycling;
  - Stronger neighbourhoods;
  - Crossing for improved access to wet dock island site;
  - Town centre masterplan for regeneration; and
  - A14 improvements and A14 Orwell Bridge and Seven Hills Interchange congestion.

1.2.75. It outlines a detailed account of the current transport issues in Suffolk and Ipswich, identifying the need for traffic mitigation in the northern part of Ipswich, which has been identified as an important area for economic and housing growth over the current planning period. The project would have both localised and wider regional effects: it should help enable housing growth in Ipswich and in East Suffolk and, as part of an integrated transport plan, it would relieve demand pressures on radial route and help tackle localised air pollution.

Suffolk Framework for Inclusive Growth (2018), SCC

1.2.76. Suffolk Framework for Inclusive Growth has been prepared to drive forward economic growth (jobs), infrastructure investment (transport, communication, utilities, education & health facilities) and residential growth (homes). It aims to enable Suffolk to have a prospering economy, of national and international significance, that also unlocks wider benefits, so that local people and places can thrive.

1.2.77. The framework highlights prioritising investment in transport infrastructure to:

- Deliver growth in and around the Ipswich area and along Suffolk's strategic routes (A14, rail corridors, A12, A11) to connect places that can sustain the jobs and homes.
- Strengthen the role of Suffolk's ports (Felixstowe, Ipswich and Lowestoft) as vital gateways for UK trade;
- Allow further economic benefits to be realised for Suffolk Energy Coast;

- Expand the opportunities offered by post-16 education and training providers, to raise aspirations and deliver the skilled employees needed for the future;
- Plan and secure investment in infrastructure,
- Encourage greater joint planning across district and borough boundaries and approach in partnership with the Government.

LOCAL POLICIES

1.2.78. This section summarises the relevant policies set out within the local plans of each Borough and District encompassed within the broad study area.

Ipswich Borough Council Local Plan (2011 – 2031)

1.2.79. The current Ipswich Borough Local Plan 2011-2031 sets out to improve quality of life by supporting growth and ensuring development can happen in a sustainable manner in conjunction with delivery of adequate transport infrastructure; in order for Ipswich to be a more vibrant, active and attractive modern county town where people can aspire to live, work, learn, visit and invest - and have a reduced carbon footprint.

1.2.80. The key objectives of the plan are:

- Development focussed within the central Ipswich area, Ipswich Garden Suburb and adjacent to district centres;
- Improve accessibility to and convenience of all forms of transport, and achieve significant modal shift from the car to more sustainable modes; and
- Improve air quality and create a safer, greener and more cohesive town.

1.2.81. The Local Plan also emphasises promoting sustainable travel and reducing dependence on the private car. This can be encouraged by improving existing infrastructure and facilities and delivering future development with good provision for non-car modes.

1.2.82. Policy CS20 Key Transport Proposals, supports measures to improve sustainable travel options, therefore supporting the investigation of a northern bypass to address capacity within the town.

Suffolk Coastal Final Draft Local Plan (January 2019)

1.2.83. The draft Local Plan sets out the planned growth in Suffolk Coastal and a vision of strategic priorities, policies and proposals over the period 2018-2036. It will replace the Core Strategy and Development Management Policies from 2013, the Site Allocations and Area Specific Policies DID from 2017 and the Felixstowe Peninsula Area Action Plan (2017).

1.2.84. The vision for Suffolk Costal includes:

- High quality of life for those living and working in the area, supported by suitable infrastructure
- Maintain the distinctive character and role of settlements
- A diverse, strong and prosperous economy which supports key sectors and embraces new opportunities
- Supporting the job growth and providing the right types of homes to meet the needs of the local population
- Healthy and active communities

- Protecting the high quality built, historic and natural environment

1.2.85. Policy SCLP2.2 details the strategic infrastructure priorities for Suffolk Coastal, stating that:

- New and improved infrastructure is essential to ensure the growth planned is sustainable
- Required infrastructure includes schools, sustainable transport measures, improvements to the A12 and A14, improvements to other parts of the road networks and the railways

1.2.86. In addition to these projects, in Infrastructure 2.16, the draft plan highlights that the INR is expected to be needed to enable long term growth, highlighting the importance of the resulting connectivity improvements and improved network resilience. Suffolk Coastal District Council, now East Suffolk Council, fully supports the ongoing work of SCC in considering potential options for routes for the INR.

Babergh and Mid Suffolk Draft Joint Local Plan (2019)

1.2.87. The Babergh and Mid Suffolk Joint Local Plan sets out an ambitious growth agenda. It aims to prioritise the infrastructure investment required to deliver growth ambitions, to deliver the necessary housing, employment and recreational growth and development.

1.2.88. The draft plan sets out the following key objectives for Barbergh and Mid Suffolk by 2036:

- Enabling economic growth
- Enhancing and protecting the environment
- Delivering housing
- Supporting strong and healthy communities and delivering infrastructure

1.2.89. The draft Local Plan acknowledges that the INR would strengthen Ipswich and the surrounding area as the key economic driver of the County. By providing an additional travel option it would help to optimise existing road capacity within the area, improving productivity and travel efficiency, in turn supporting economic growth and inward investment in the region.

SUMMARY

1.2.90. This project has a strong strategic fit with current Government plans and policies at a national (e.g. RIS, TIS and the Local Transport White Paper), regional (e.g. Transport East Strategic Transport Plan, New Anglia LEP Strategic Economic Plan and Suffolk Local Transport Plan) and local (e.g. Ipswich Borough Council Local Plan, Suffolk Coastal District draft Local Plan & Babergh and Mid Suffolk draft Joint Local Plan) levels.

1.2.91. At all levels, the policies recognise the importance of job creation and housing delivery, to drive economic growth. They also recognise the significant role transport improvements would play to realise this regional/local economic growth. The strategies outline detailed accounts of the current transport issues in Suffolk and Ipswich, identifying that the A12 and A14 are congestion hot spots and roads in need of investment.

1.3 PROBLEM IDENTIFIED – THE NEED FOR THE PROJECT

1.3.1. This section describes problems which have been identified which the project would seek to address.

1.3.2. Suffolk's GVA per head index, a measure of the value of goods and services produced, grew by 2.6% on average between 2010 and 2017, outpacing nearby Norfolk and the East of England as a whole. Locally, Ipswich has been performing as an engine of growth for the East of England. Despite Suffolk experiencing steady economic growth since 2010 there remain several problems in the county which are restricting Ipswich and the wider area from achieving its growth potential.

1.3.3. The problems identified, which provide the need for the project can be categorised into three broad areas: transport problems (and externalities associated with these problems such as environmental

- Congestion and lack of network resilience
- "Rat-running" traffic on unsuitable rural roads
- Increasing traffic growth and car dependent commuting patterns
- Highway Network resilience problems including closures of Orwell Bridge
- Noise and air pollution in the Ipswich area.

1.3.4. The current housing problems in Suffolk are:

- Housing demand outstripping supply in the wider Ipswich area
- Inadequate supply of affordable housing

1.3.5. There is also widening productivity gap in Suffolk compared to the rest of the UK, infrastructure in the region is one of the factors behind this. In particular, capacity on the A14 and the lack of resilience associated with the Orwell bridge, during closures due to high winds, and full or partial closures due to accidents. When the bridge is affected traffic diverts through Ipswich resulting in gridlock and severe delays. According to Highways England, the A14 has been closed for at least 88.5 hours in the last five years, mainly closing on as a result of accidents but also closed on 12 occasions due to high winds resulting in regional bottlenecks, as there is a lack of capacity on alternative routes.

1.3.6. Businesses rely on roads for distribution and supply needs so when they are presented with higher operating costs due to congestion issues, employees can experience working hour losses during peak congestion times, impacting business productivity. According to the Ipswich Economic Area Sector Needs Assessment, employment is expected to grow by 960 jobs (4.7%) and is mainly focused around the A12 and A14 corridors as well as port-related activities at Felixstowe. Enhancing port-centric distribution centres along the A14 has therefore been identified as an area that can significantly increase job growth potential within transport, logistics and related sectors.

CURRENT TRANSPORT PROBLEMS

1.3.7. Concurrent with expected economic growth, traffic levels on the A14 are expected to grow by as much as 20% by 2032. This, alongside limited spare capacity on the network has resulted in greater levels of congestion, more delays, and a consequent deterioration in air quality. Due to this additional local, Ipswich-bound traffic on the A14 and A12, further pressure would be placed on these key regional links, degrading network resilience in Suffolk.

Congestion- Traffic Master metrics

1.3.8. During the busiest of travelling times, Ipswich has a pressing congestion problem and evidence for this congestion comes from traffic master metrics presented in the OAR. The data used was recorded between September 2014 and August 2015 and has been analysed for the following periods:

- AM Peak Hour – 0800-0900 hours;
- PM Peak Hour – 1700-1800 hours;
- Overnight – 0000-0500 hours.

1.3.9. Based on Average Annual Weekday Traffic (AAWT) data, traffic volumes in Suffolk have grown by 3% since 2014.[10] Therefore it is likely that the Traffic Master data from 2014/15 is an effective representation of delays on the network and situation has likely worsened since then as capacity on the network has not changed significantly,

1.3.10. Actual congestion was calculated by subtracting overnight journey times by AM/PM peak delays and is displayed in the tables below.

Table 1-2 – Actual Delay times

Road	Direction	Actual delay AM (T)	Actual delay PM (T)
A14 / A12 (Class 1 Vehicles - Cars)	East to West	00:03:33	00:03:30
	West to East	00:03:73	00:03:67
A12 South of B1079 near Woodbridge (Class 1 Vehicles - Cars)	East to West	00:00:39	00:00:38
	West to East	00:00:18	00:00:23
A1214 Valley Road-A14 / A12 / A1214 Valley Road / Norwich Road. (Class 1 - cars)	East to West	00.11.98	00.10.61
	West to East	00.11.59	00.10.8
A1156 Crown Street-A14 / A12 / A1214 / A1156 / Norwich Road - (Class 1 Vehicles - cars)	East to West	00.16.14	00.12.96
	West to East	00.12.57	00.14.14
	East to West	00.04.11	00.03.26

[10] The AAWT figures are based om the average daily traffic count across all Average Traffic Count sites in Suffolk over each year.

Rural Road Network - B1078 (All Class Vehicles)	West to East	00.03.18	00.01.93
Rural Route (north of Ipswich) – B1079 link between B1078 and A12 near Woodbridge – (All Class Vehicles)	East to West	0.00.83	0.00.21
	West to East	-0.00.21	-0.00.37

1.3.11. Table 1-2 shows that most of the roads that were considered, experienced delays in both directions. The A1214 Valley Road and A1156 Crown Street-A14 experienced the longest delays, with journey times increasing by over 10 minutes in both directions.

'Rat-running' traffic on unsuitable rural roads

1.3.12. Inappropriate route choices are often caused by congestion on main roads and a lack of alternative routes result in drivers seeking alternate shortcuts through residential areas to reach their destination. This is a pressing problem for some communities within Ipswich and its surrounding suburban areas.

1.3.13. Currently, the A14 between junctions 55 and 58 via the Orwell Bridge, is the only direct main east to west route in the Ipswich area. During periods of heavy traffic, particularly when the Orwell Bridge is closed, drivers, including HGV's, have been known to seek alternative routes via residential areas and roads that are often not designed for such levels of activity. The Public concerns associated with rat running are health and safety, severance and noise.

1.3.14. Accessing a northern route or the A1214 in Ipswich would relieve stress on interior roads, which would improve transport across the town and the wider area.

Highway Network Resilience Problems including closures of the Orwell Bridge

1.3.15. The Orwell bridge has become vital to the region and Ipswich, with a 5-day average flow of vehicles at around 66,000-68,000, reaching as much as 70,000 on a weekday, which is over 83% of its maximum capacity. The threat of high winds and fog presents a hazard for vehicles, especially heavy load HGVs. The number of HGVs has increased significantly on every section of the A14 around Ipswich, and in particular, along the section to the Port of Felixstowe where HGV traffic has grown by approximately 22% from 2010 to 2015, due to the large amount of port traffic[11].

1.3.16. When the bridge is closed in both directions for more than a short period of time, normally as a safety precaution due to high winds, most of Ipswich's roads are brought to a near-standstill by diverted traffic, with HGVs being a sizeable contributor. According to Highways England, the A14 has been closed for at least 88.5 hours in the last five years, having been shut mainly as result of

[11] Stage1 INR Strategic Study 2019, https://ipswichnorthernroute.org.uk/wp-content/uploads/2019/07/Stage-1-INR-Strategic-Study-for-website.pdf

accidents and on 12 occasions due to high winds.[12] This results in regional bottlenecks, as there is a lack of capacity and of alternative routes.

Transport Factors

1.3.17. Increased congestion, lack of alternative routes, and unreliable journey times present a constraint to regional stakeholders, which include residents, commuters, businesses and tourists, as traffic congestion leads to daily and seasonal variation in journey times, making it difficult for road users to predict the time needed for their journey.

1.3.18. Bus journey times are affected by congestion to a greater degree than general traffic, as buses cannot re-time or re-route their journeys to avoid congestion. This issue is prevalent in Ipswich and bus journey time reliability is problem. Congestion also in around Ipswich has also resulted in poor air quality and high levels of noise in the town centre affecting health and living standards for residents.

Businesses

1.3.19. Businesses rely heavily on the A12 and A14 road network for distribution and/or supply needs. There is also significant traffic movements across Ipswich. Congestion brings about a level of uncertainty and unreliable journey times, where delayed journeys affect the competitiveness, efficiency and productivity of a company. Increased travel times also result in an increase in operating costs as suppliers and distributors experience additional running costs (fixed and variable), such as depreciation, fuel, repairs and maintenance costs, which can feed through the supply chain and impact consumers at the bottom through an increase in final prices.

1.3.20. Furthermore, employees have been faced with longer commutes during peak congestion time. This can result in geographical immobility, restricting the labour pool to hire from, as commuting times can deter talent from working at some businesses, resulting in a skills gap and impact on business productivity. Ipswich like many towns and cities across the UK has seen enterprises and businesses leave the town centre in recent years as it no longer commercially viable to operate there.

1.3.21. Under investment and congestion on road networks are key obstacles for businesses looking to expand in Suffolk with the perception of poor infrastructure deterring inward investors. Across Suffolk, the morning and evening peak traffic flows are expected to rise with traffic flow between peak periods projected to increase by 47% over 20 years[13]. The growth in traffic levels are predominantly driven by the estimated growth in population levels as well as changes to vehicle

[12] Highways England: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/755946/CRS_766_983_redactesillianaceed.pdf

[13] https://www.healthysuffolk.org.uk/jsna/state-of-suffolk-report/sos19-how-we-travel#Bibl_037

operating costs which would heavily increase the number of trips which could lead to additional traffic constraints in Suffolk.

1.3.22. Suffolk has previously sustained challenges to productivity and growth according to the 'Suffolk's Response to Building Our Industrial Strategy, 2017' paper. The document reported that Suffolk has many assets that are under leveraged as well as, a GVA that is 14% lower than the England average with skill levels relatively low across the region's population. Moreover, wages in Suffolk have remained persistently lower than the national average for the last decade.

1.3.23. This suggests there is negative business productivity and that enhanced connectivity is critical in growing Suffolk's community and infrastructure investment is fundamental to growing its economy. Decongestion of town centre roads would improve linkages to ports and business providing better overall connectivity to stimulate economic growth through supporting businesses to thrive.

INR opportunities

1.3.24. Businesses can benefit from the INR project. The extra road capacity provided is likely to result in shorter journey times to key employment sites situated along the trunk road network, while Ipswich-bound business trips are likely to have improved radial access to the town centre due to lower traffic levels on local roads currently used to make through trips. Additionally, the INR would also make it easier to reach nearby regional urban areas and business hubs in Norwich and Cambridge, providing a more efficient connection between the A12 and A14 trunk roads.

1.3.25. Reduced journey times for business users should have a positive effect on the production and function of firms who rely on the trunk road network around Ipswich. The INR should enable enhancement of sustainable transport modes and improve bus journey time reliability. Distribution / transport costs would fall and the productive efficiency of other inputs (mostly labour) would increase due to the decreased time costs, which would likely result in higher productivity.

Labour mobility

1.3.26. SCC's Local Transport Plan identified four key employment sites in the wider Ipswich area: The Port of Felixstowe, Martlesham Heath business campus, Whitehouse Industrial estate and Ransomes Europark[14]. All four employment sites are situated along the A12-A14 corridor, which currently makes commuting to and from these areas susceptible to travel time uncertainties and unpredictability.

1.3.27. Employees and residents are faced with unreliable journey times making it difficult for drivers to predict the time needed for their journeys. Delays to public transport also encourages commuters to choose to drive. The more time spent in traffic delays, results in less time spent at work or for

[14] Suffolk County Council (2011), Suffolk Local Transport Plan 2011-2031 Part 1 – Transport Strategy

leisure. In addition, geographical immobility caused by increased travel times can deter workers from taking on particular jobs, which can link back to Ipswich's relatively high unemployment figures.

INR opportunities

1.3.28. The proposed INR would create extra east/west capacity, making east-west and north-south movements linking regional labour markets easier, as well as enabling commuting to be quicker and more predictable and make the use of public transport more attractive. Although decreased travel times would lower the cost of travel and improve journey times for sustainable modes, thus allowing commuters to maximise consumer welfare, the new road is also likely to create additional, induced, demand. Currently, east-west trips to the north of Ipswich are likely to pass through the town centre or the radial routes, or use the A14 to the south and experience travel time delays. By allowing quicker east/west journeys, the INR would make east-west travel faster and more reliable for existing road users and free up capacity on the A14.

Tourism

1.3.29. Tourism plays an important role in the regional economy. The east coast is a popular tourist destination. The area offers a 50-mile stretch of seaside towns, beaches and an Area of Outstanding Natural Beauty. In 2018, there were over 35 million day trips to the Suffolk coastline, with the value of tourism to the area being approximately £2 billion and generating over 42,000 total actual tourism related employment15. However, traffic generated by tourism can lead to localised congestion, exacerbating local noise and air pollution. This is a particular problem for the east Suffolk coastal area on the A12 where many of the region's most frequently visited sites are16.

1.3.30. The number of overseas trips to the East of England in 2018 decreased by 9% and the total number of nights was down 14%.[17] In the same year, there was only a 3% fall in visits to the UK by people living abroad compared to 201718. This indicates poor regional performance and suggests that congestion on major routes may discourage people from travelling to the area which this has an adverse knock-on impact on the local economy. Given that tourism is an important sector in Suffolk's economy, if visitors choose not to visit the area as a result of delays on the A12 and A14, this would have a damaging, long-term impact on local businesses reliant on the visitor economy. The proposed INR would help tourism traffic in Suffolk reach the east coast in much shorter journey times.

INR opportunities

1.3.31. Located within two hours of central London and Cambridge, improving the accessibility of this area through the INR project. Located within two hours of central London and Cambridge, improving the

[15] Economic Impact of Tourism Reports for Suffolk Coastal and Waveney 2015
[16] Suffolk County Council (2011), Suffolk Local Transport Plan 2011-2031 Part 1 – Transport Strategy
[17] Economic Impact of Tourism, Suffolk 2018
[18] Tourism: statistics and policy briefing paper, House of Commons Library 2019

accessibility of this area through the INR project would promote and strengthen the tourist industry in Suffolk. In turn this should improve access to key tourist destinations on the east coast, adding value to the tourism sector within the region.

1.3.32. The INR project would support Transport East's ambition to sustain and develop energised coastal communities. Improving travel conditions on the A14 and A12 in the region should support the tourism offer of the region, making popular locations more accessible from the west and south.

Environment

Air quality

1.3.33. The increase in the number of vehicles using the roads in and around Ipswich, coupled with the limited alternative routes available, has contributed towards the relatively high levels of air pollution and poor noise quality. Air quality problems are particularly intensified where traffic is stationary or slow moving. It is recognised by Ipswich Borough Council that existing traffic patterns and the resulting poor air quality in the town are closely linked to highway capacity issues, as flow constraints and poor traffic management result in congestion, which may have an adverse effect on people's health.

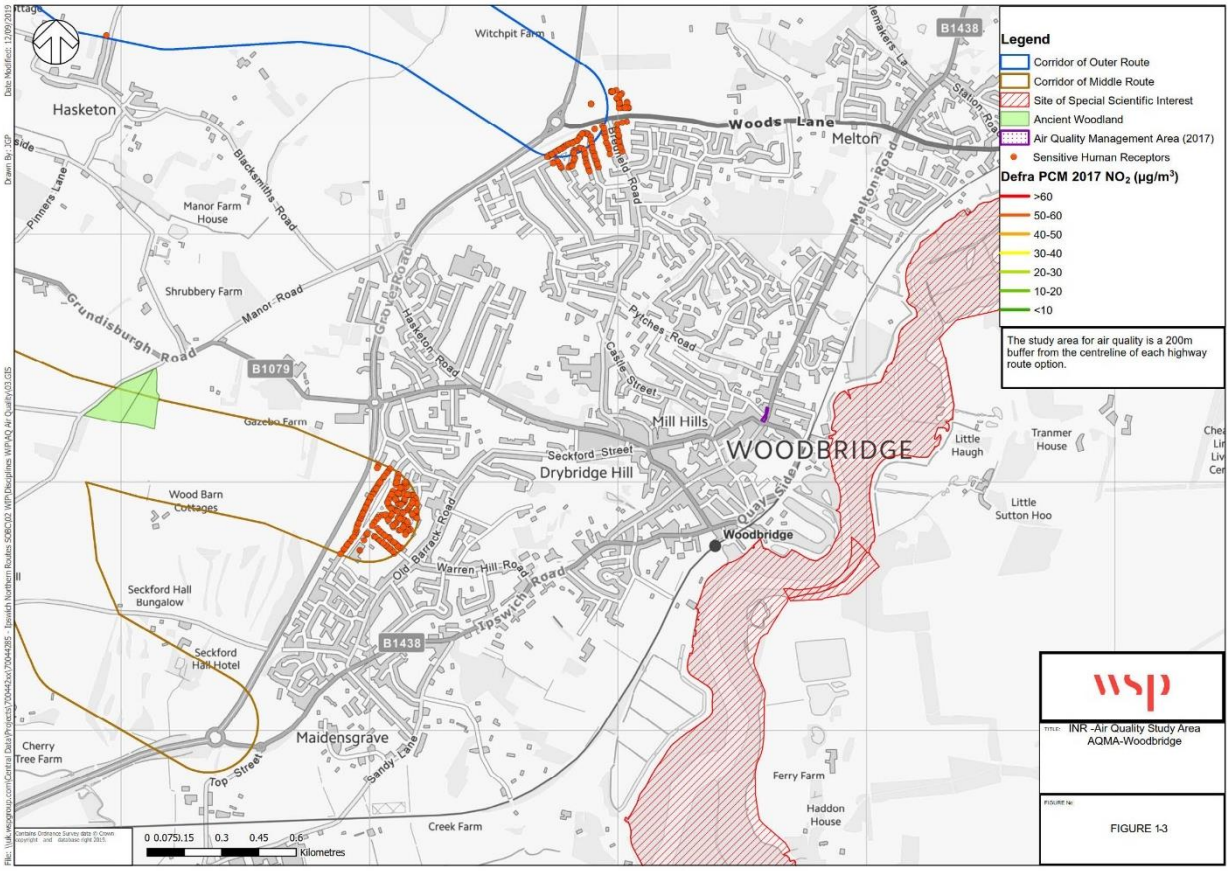
1.3.34. Road transport is a significant source of NO_2 and particulate pollution: Air Quality Annual Status Reports by district councils in the region indicate that rural areas have generally good air quality, while urban areas are negatively affected by vehicular traffic emissions. Based on information available from the National Atmospheric Emissions Inventory, the majority of Ipswich town centre and the road network around wider Ipswich experience high levels of particulate pollution; the highest emission levels are recorded around pinch points on the A12-A14 corridor to the south of Ipswich and on the A14 to the west of Ipswich.

1.3.35. In addition, there are five Air Quality Management Areas (AQMAs) within the central area of Ipswich and one in the centre of Woodbridge. AQMAs are designated in areas where poor air quality may influence people's health.[19]

1.3.36. The closest AQMAs to the route options is the AQMA located in the centre of Woodbridge (see Figure 1-3 below) for Nitrogen Dioxide (NO_2 annual mean), approximately 1.3km south-east from the Outer Route. There are five AQMAs in Ipswich which are located more than 3km from the route options. Ipswich AQMAs No.2 is located approximately 3km south of the Inner Route. Ipswich AQMAs No.1 and No.4 on Chevalier Street are located approximately 3.2km and 3.6km south of the Inner Route respectively. Ipswich AQMAs No.3 is located approximately 3.3 km south of the Inner Route. Finally, Ipswich AQMAs No.5 is located approximately 3.6 km south of the Inner Route.

[19] Suffolk Observatory data

Figure 1-2 - Location of Woodbridge AQMA



1.3.37. The environmental effects have been made more significant because there are particular groups within the population which have increased vulnerability to an exposure to air pollutants. The most susceptible groups are those with pre-existing lung or heart disease, as well as children and elderly people. Suffolk has an increasing aging population, with over a fifth of the population being aged 65 and over, above the national average of 18%. This is projected to increase, with 1 in 3 people to be 65+ in Suffolk and 1 in 4 people to be 65+ in Ipswich by 2040[20]. Children comprise of 18% of the county's population which is just below the national average of 19%.

1.3.38. This suggests that the wider Ipswich area has many residents who are at significant risk, which has, and will, have the following impact:

[20] https://www.healthysuffolk.org.uk/uploads/Population_Suffolk_on_a_Page_2019_v1-1.pdf

- Pollution can negatively impact heath, which in turn can harm regional productivity as people take time off work.
- Housing near to the key routes may be subject to dust, automobile exhaust, and other forms of pollution, which can be a disadvantage when if residents look to sell.

Noise

1.3.39. Department for Environment, Food and Rural Affairs (DEFRA) undertook a strategic noise mapping exercise in 2012 to highlight Noise Important Areas (NIAs), which are 'hotspots' of transport noise from both road and rail. There are several NIAs within the study area which are detailed further in Appendix G. The existing major noise sources include the A14 in the west of the Study Area and the A12 in the east.

1.3.40. Living standards can be impacted as exposure to prolonged or excessive noise has been shown to cause a range of health problems ranging from stress, poor concentration, and fatigue from a lack of sleep, which can lead to productivity losses.

INR environmental opportunities

1.3.41. By removing traffic from the town centre this should alleviate congestion issues and improve overall journey reliability for public transport providers across the Ipswich road network. As a result, this could encourage increased usage of public transport, and consequently this could improve air quality in Ipswich.

CURRENT HOUSING PROBLEMS

Housing demand exceeding supply

1.3.42. The picture seen across much of the country, is of rising house prices relative to earnings. On a national level, housebuilding has also been around half the level needed to match demand. The Ministry of Housing, Communities & Local Government (MHCLG) housing delivery test showed that housing delivery in Ipswich and other local authorities was below the required need from 2015-2018. In Ipswich only two-thirds of required housing was delivered over that time21. This is likely to have an ongoing impact on keeping house prices high. Regionally, with the increase in population size, Ipswich and Suffolk have also faced their own housing pressures.

1.3.43. The Strategic Housing Needs Assessment highlights that there is a lack of housing supply in Suffolk compared to demand. Based on an Objectively Assessed Need (OAN), Suffolk has set a combined average annual target to deliver 3,050 homes per annum, however over the past five years the best delivery rate has been 2,200 homes or 72% of this target. The number of housing completions has

[21] Housing Delivery Test: 2018 measurement, MHCLG

decreased from the 2015/16 figure and they remain below the peak of 2007/08 and the Core Strategy annual target (489).22

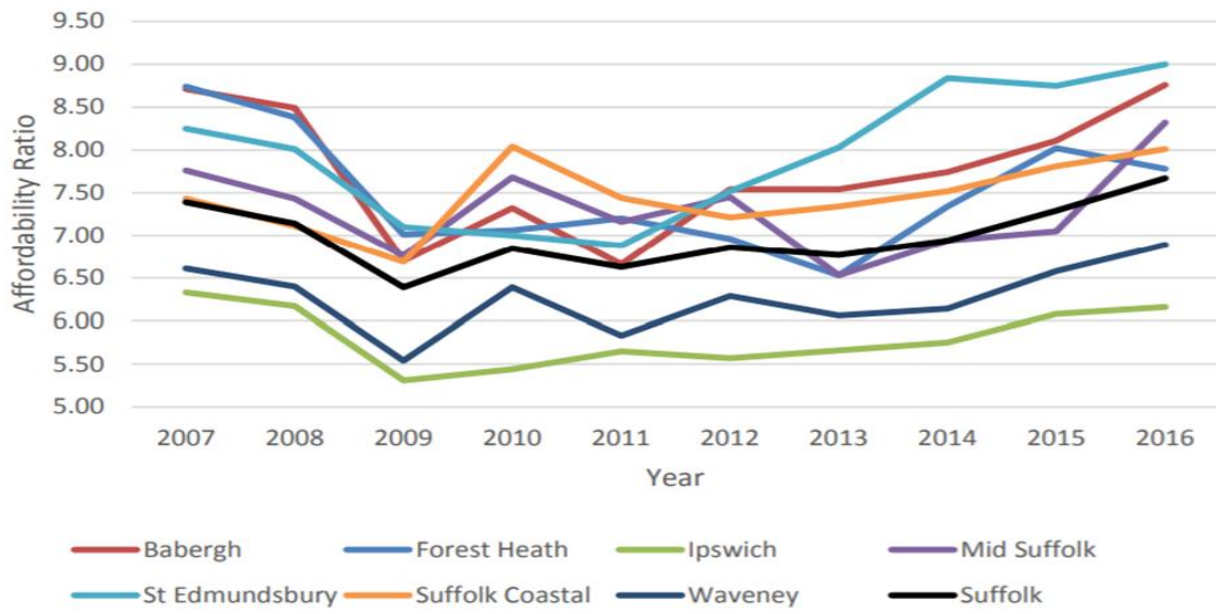
1.3.44. This shortfall in supply, has led to substantial house price increases, with fewer new homes entering the market each year. Between 2016 and 2019 house prices in Ipswich increased by 15%. According to Rightmove housing data (May 2019), during the last year sold prices in Ipswich were 8% up on the previous year and 14% up on 2016 when the average house price was £199,041.

Inadequate supply of affordable housing

1.3.45. In addition, there has been a decline in the number of affordable houses built. In 2015/16 only 320 affordable homes were completed across the county, and at a local level, only 2% of the homes built in Ipswich in 2016/17 were affordable.

1.3.46. Increases in house prices have not been matched by increases in incomes, as highlighted in Figure 1-3 below showing affordability ratio collected from the 2018 Suffolk Housing and Health Needs Assessment.

Figure 1-3 - Ratio of median house prices to median gross annual earnings



1.3.47. The average house price in 2016 was just over 7.5 times the average gross annual earnings, making it harder for those on lower incomes to buy a home. Ipswich has a lower rate of home

[22] Ibid

ownership at 25.7% (via a mortgage or owned outright) than the national and Suffolk average, at 30.6% and 35.7% respectively[23] .

Housing Factors

Social affects

1.3.48. Currently, households are being increasingly priced out of rental and home ownership properties leading to an increased number of people being housed in temporary accommodation in Suffolk. The instability of temporary accommodation impacts on those affected, notably children.

Economic affects

1.3.49. Poor levels of affordable housing can lead to geographical immobility, where people are struggling to find housing within a commutable distance from work. Longer commutes can put additional pressures on local roads, primarily the A14/12, leading to increases in commuting times.

1.3.50. Adequate housing supply can enable people to move jobs and match the supply of skills to demand by business. In Ipswich and the wider area, businesses are often faced with a skills gap due to a lack of housing which limits their accessible labour pool. This can negatively impact business efficiency, productivity and restricts employment opportunities.

Summary

1.3.51. This section highlights that there is currently a housing delivery and supply challenge in Suffolk and more specifically Ipswich. This delivery shortfall, has led to excess demand and price increases, which has negatively impacted various stakeholders which include local businesses having a restricted labour pool to hire from, house buyers being priced out, commuters/road users having to travel further distances and renters in the area being left with less disposable income. This is significant because it can have a negative impact on local economic growth and social wellbeing, putting Ipswich at an uncompetitive disadvantage to other towns in the region and discouraging inward investment.

1.3.52. The INR project would provide additional transport capacity to support planned and future residential and employment growth in the wider Ipswich area and enable the delivery of around 10,000 to 15,000 additional homes across the local planning authorities of the Ipswich Strategic Planning Area (ISPA).

CURRENT ECONOMIC PROBLEM

Productivity gap

1.3.53. The workplace population (WP) is defined as all residents aged 16 to 64 whose usual place of work is in the area. These statistics provide a good estimate as to the number of jobs in an area. The

[23] Office for National Statistics

percentage increase from 2011 to 2017 is summarised in the table below. It shows that with only a 31% increase, the working population of Suffolk is not growing as fast as other regional and national areas.

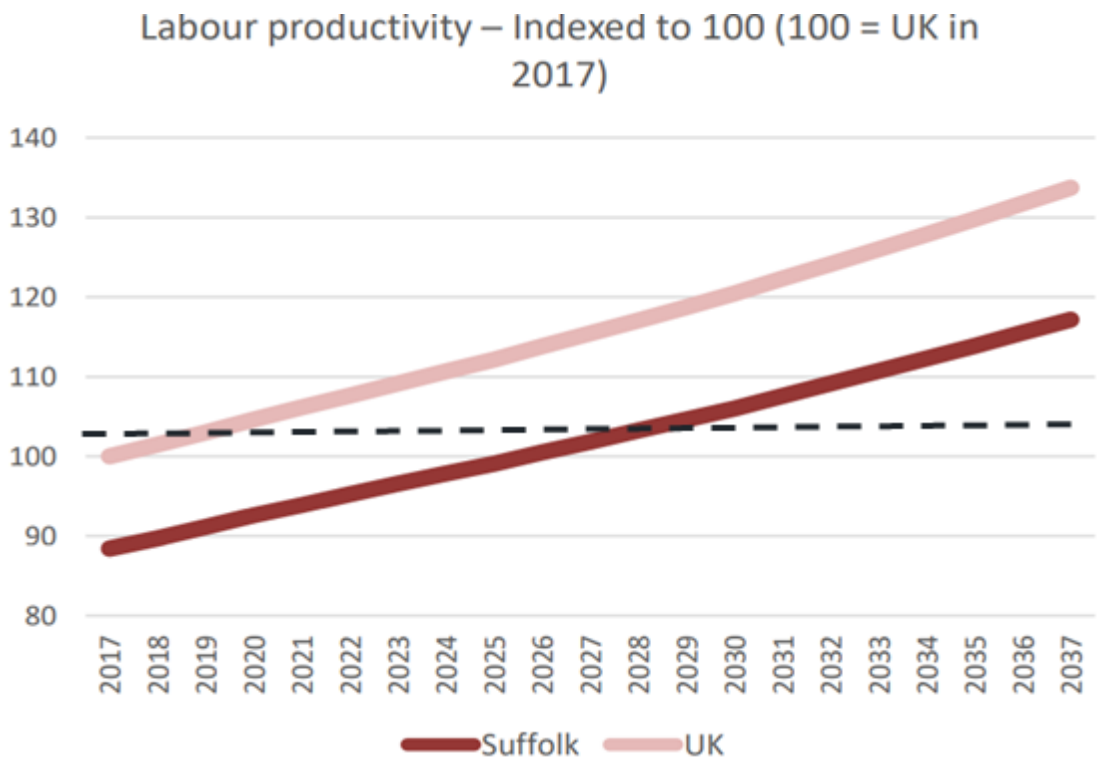
Table 1-3 – Workplace Population

Locations	2011 WP	2018 WP	% Increase
Ipswich	71,601	86,965	21%
Suffolk	339,596	445,460	31%
East of England	2,650,835	3,781,756	40%
England	25,087,843	35,049,467	41%

Source: ONS 2011 Census and Suffolk Observatory

1.3.54. Figure 1-4 displays Suffolk's productivity in comparison to the rest of the UK. The productivity gap is the difference in total GVA Suffolk would produce if the productivity per worker was at the UK average. Although employment (and therefore GVA) are forecast to grow more strongly in Suffolk than in the UK as a whole, Suffolk's labour productivity (GVA per worker) is forecast to take almost another 10 years to reach the current UK level without significant investment, by which time the UK figure is expected to have grown by around 15%. Labour productivity is expected to remain at less than 90% of the UK average. The productivity gap is expected to widen over the next 20 years from £2.9bn in 2017 to £4.5bn in 2037.

Figure 1-4 - Labour Productivity



1.3.55. High levels of congestion in Ipswich and the wider Ipswich Area is one factor contributing to lower productivity in the area, resulting in poor labour mobility, negatively impacting business operations and tourist movement. Continued economic development is dependent on attracting new businesses and increasing the productivity of existing firms. It has been recognised by regional and local governing bodies that the current state of major transport links in the Norfolk-Suffolk cluster and, more specifically, in the wider Ipswich area is a constraint to development.

PROBLEM IDENTIFICATION SUMMARY

1.3.56. Table 1-4 summarises the problems which the project aims to address, and identifies which stakeholders are affected.

Table 1-4 - Problem Identified Summary

Category	Description of problem	Key stakeholders affected or concerned
Road Infrastructure	Economic growth is constrained by traffic congestion, delays, unreliable journey times and inadequate transport infrastructure. Rat-running traffic on unsuitable local and rural roads	Businesses, Port of Felixstowe, residents, employees, tourists,

	Poor journey time reliability makes it difficult to plan journeys Lack of capacity, lack of alternative routes particularly with Orwell Bridge closures Poor air quality and noise affecting health and living standards	
Housing problems	Increased living and working population have led to an excess demand for housing in Ipswich and wider Ipswich area. The resulting upward pressure on house prices is pricing homeowners out of the market and reducing the labour pool for businesses in the region. This hinders productivity and restricts economic growth.	Businesses, employees, resident population,
Economic problems	Productivity in Suffolk is restricted by poor connectivity.	Businesses, employees, resident population,

1.4 IMPACT OF NOT CHANGING

1.4.1. Suffolk's population is expected to grow by 7% by 2030, which reinforces the need for an improvement in connectivity to support business to thrive. Ipswich is forecasted to have a faster rate of job growth than the rest of the East of England region and England as a whole. The cumulative growth from 2016 maintains this pattern throughout the forecast through to 2036, by which time the number of jobs is forecasted to be approximately 7.6% more than 2016. Overall, the region currently faces a challenging housing climate with demand far outweighing supply.

1.4.2. Growth in Suffolk would add pressure to an already constrained housing market to supply the increasing local working population. House prices would continue to rise as the gap between supply and demand widens. This would further out price buyers and impact renters. A lack of housing can deter business expansion and local investment as it can present labour shortages and poor investment opportunities.

1.4.3. The forecast levels of growth would result in an increase in road users and local traffic. Without transport intervention congestion would overwhelm the highway network putting significant pressure on the existing infrastructure. Poor journey times and low levels of reliability would limit business and commuting trips which can lead to detrimental impacts to the productivity and economic activity in an area of national significance like Port of Felixstowe and Adastral Park. This could reduce the attractiveness and feasibility of inward private and national investment to the area.

1.4.4. Traffic modelling has shown that if the current patterns of travel are maintained into the future, the additional car trips brought about by background growth and new developments would lead to much greater congestion, which is also likely to spread beyond the morning and evening peak periods.

The forecast increase in congestion would cause increased delays in the transport networks and would have negative impacts on business, air quality, accessibility, bus punctuality and reliability.

1.4.5. Failing to address the issues of high house prices and road infrastructure would constrain local growth, and the potential of the region would not be fully realised.

1.4.6. To support the level of population increases demonstrated in the previous section, there needs to be adequate housebuilding and road infrastructure within the Ipswich Borough and surrounding area, hence it is essential that appropriate infrastructure is being implemented in a timely fashion to facilitate residential, commercial and economic growth.

1.5 OBJECTIVES

The project objectives, developed with key stakeholders, are defined in the Options Assessment Report (Appendix A) and form the basis for the assessment of the range of potential inventions.

Table 1-5 - Objectives

Strategic Objectives	Specific Objectives
Improve business' and people's experience of using the A14 and provide additional route resilience.	Positive impact on the A14; particularly for junctions with existing capacity issues, between Copdock roundabout, J55, and Seven Hills roundabout, J58
	Improve connections for vehicles accessing the north of Suffolk and Norfolk from the A14 and A12
	Reduce congestion and improve resilience of the road network when the Orwell Bridge is closed
Support the existing local economy through improved connectivity, making Suffolk the best place to do business	Enable economic growth for the wider Ipswich area and Suffolk by improving connectivity and accessibility
	Supporting economic growth in Suffolk as set out in the LEP's Economic Strategy for Norfolk and Suffolk, including the Suffolk Energy Coast
	Supporting the delivery of the economic opportunities identified in the LEP's Local Industrial Strategy for Norfolk and Suffolk
Provide additional travel options, helping to optimise existing road capacity in Ipswich, leading to environmental improvements.	Reduce congestion within Ipswich town centre and on the A1214 corridor
	Improve opportunities for sustainable trips in the wider Ipswich area, including walking and cycling.
	Improved air quality and reduce noise on existing roads
Directly support new homes and jobs growth to ensure the future success of Suffolk.	Provide additional transport capacity to support planned and future residential and employment growth in the wider Ipswich area
	Enable the delivery of around 10,000 to 15,000 additional homes across Suffolk, supporting Suffolk's housing ambitions
	Optimise the environmental benefits of the project and support low carbon development

1.6 MEASURES FOR SUCCESS

1.6.1. It is important to consider from the outset what constitutes successful delivery of the objectives, as this informs the development and appraisal of the project, the selection of the preferred option, and the monitoring and evaluation of the project's performance after construction.

MONITORING AND EVALUATION

1.6.2. Below is a Logic Map which shows the expected relationship between the outputs of the project, the achievement of objectives, and the delivery of the strategic outcomes. It further shows the alignment of the project objectives to the LLM objectives, namely:

- Reducing congestion
- Supporting economic growth and regional rebalancing
- Supporting housing delivery
- Supporting all road users
- Supporting the SRN

1.6.3. In most cases, achievement of the specific objectives would be measured directly by means of:

- Traffic counts
- Journey time surveys
- Accident statistics
- Air quality monitoring
- Housing Delivery

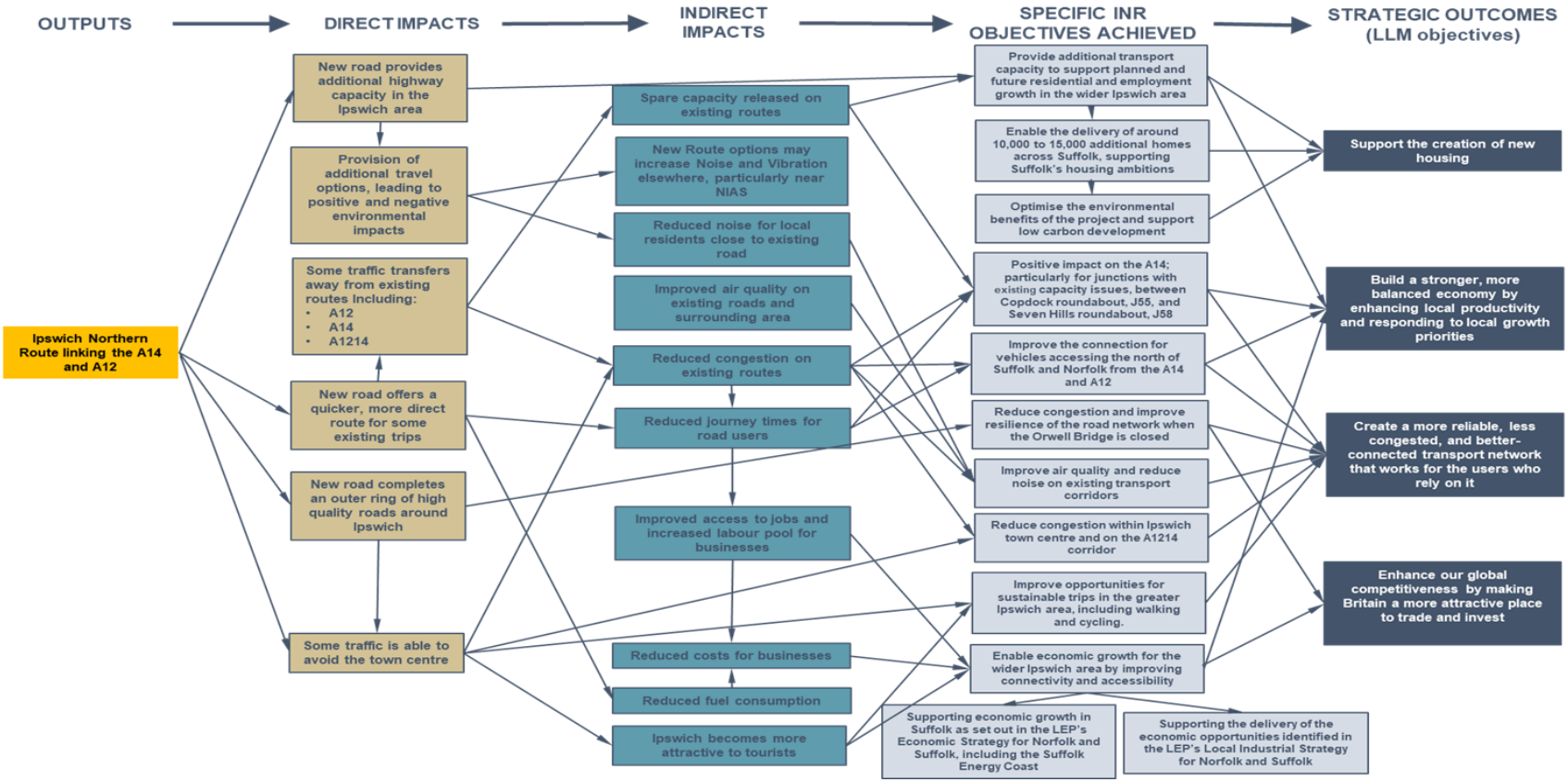
1.6.4. Greenhouse gas emissions and improved reliability and resilience are difficult to measure directly but are predictable consequences of reduced traffic, congestion, delay and the availability of shorter routes.

1.6.5. Not all of the strategic outcomes can be measured directly, but they can all be seen to be logical consequences of achieving the specific objectives. Longer-term monitoring of local development, business growth and relocations, and employment would continue to take place, and would contribute to an understanding of the success of the project.

1.6.6. Anecdotal information, especially in relation to perceptions of congestion, resilience and the attractiveness of the area as a place in which to live, also has a supporting role in evidencing the success of the project.

1.6.7. The project would be deemed successful if it delivers the expected benefits at levels close to, or exceeding, those forecast, without any unforeseen dis-benefits.

Figure 1-5 - INR Logic Map



KEY PERFORMANCE INDICATORS

Transport

1.6.8. Because of its impact on the SRN, the project would contribute towards achievement of the Strategic Outcomes and Key Performance Indicators (KPIs) which Highways England has set for the roads for which they are responsible. The contribution of the project to these KPIs is summarised in the table below:

Table 1-6 – Contribution to strategic outcomes and KPIs

Highways England's Strategic outcomes and KPIs for the SRN	INR Project contribution
Supporting economic growth	
KPI: reduced Average Delay (time lost per vehicle per mile)	Less traffic congestion (i.e. shorter journey times) on the A1214 Valley road and on the A1156 Crown street achieving actual PM/AM delay times under 10 minutes. Reduce congestion and improve resilience when the Orwell Bridge is closed
Delivering housing	
KPI: additional housing delivery	Facilitate the delivery of homes in the current local plans. Enable the delivery of around 10,000 to 15,000 additional homes across Suffolk
A free-flowing network	
KPI: Network availability - Maximise lane availability so that it does not fall below 97% in any one rolling year KPI: Incident management - At least 85% of all motorway incidents should be cleared within one hour in any one rolling year	A reduction in traffic rat running on the A1214 Valley road and A1156 Crown street A more resilient network, better able to cope with unexpected events, accidents or wind related closure of the Orwell bridge More reliable journey times and fewer unexpected delays A more efficient road network (i.e. shorter journey times and distances in the area generally) for cars, goods vehicles, buses and cycles
Improved environment	
KPI: 1,150 Noise Important Areas to be mitigated. KPI: Improve biodiversity as set out in the Biodiversity Action Plan published in June 2015.	Improved air quality and a reduction from the current five Air Quality Management Areas (AQMAs) within Ipswich centre Reduced overall emissions of CO_2 and other greenhouse gases.

Further success indicators

- An increase in Ipswich home ownership (via a mortgage or owned outright) from current level at 25.7% to match national or Suffolk average at 30.6% and 35.7% respectively.
- For an increase in the percentage of affordable housing to match the core strategy and policies development plan of 20% affordable housing provision in projects of between 10 and 14 dwellings or for residential development on sites of between 0.3ha to 0.49ha and 5% affordable housing provision in projects of 15 or more dwellings or for residential development on sites of 0.5ha or more.
- For East Suffolk, productivity levels are targeted to set to increase by 1.75% per annum between 2018 and 2023.

1.7 SCOPE

1.7.1. The project would seek to realise the objectives specified within section 1.5, counter the problems identified within section 1.2.90 and the potential of impacts of not changing – section 1.4.

1.7.2. As described within the options section 1.10.17, all types of transport interventions were considered initially: public transport, highway, demand management, sustainable transport, low and high cost options, therefore nothing practical and realistic was 'out of scope'.

IN-SCOPE

1.7.3. The project would introduce a new carriageway between the A14 trunk road and A12 to the north of Ipswich. The northern route of Ipswich would provide additional highway capacity, relieving congestion on the existing east-west links and the A14 and enable growth. The route would also facilitate movements in and around the north of Ipswich.

1.7.4. The three options include:

- Outer Route – this is the most northern option and connect the A14 near Coddenham, via the A140, to the A12 at Woods Lane
- Middle Route– this option is south of the outer route and connects the A14 near Claydon to the A12 at Woodbridge
- Inner Route – this option is the closest to Ipswich and connects the A14 near Claydon to the A12 near Martlesham

OUT OF SCOPE

1.7.5. This early stage of the project does not include physical improvements, enhancements or traffic management to key connecting roads, roads in other areas of Ipswich.

1.7.6. The project does not include provision of public transport facilities or services.

1.8 CONSTRAINTS

1.8.1. The following types of constraint have been considered in developing the project:

- Agricultural and Greenfield Land
- Transport Infrastructure
- Commercial and residential properties
- Environmental
- Financial
- Public acceptability constraints

AGRICULTURE AND GREENFIELD LAND

1.8.2. Most of the area that the INR options would pass through is currently being used as farming land, with all types represented e.g. dairy, beef, arable, forestry, etc. Much of the Agriculture Land Class for the Study Area is Grade 3 with small areas of Grade 4 in the eastern and western ends of the area and Grade 2 agriculture land in the centre of the area. Care would be taken to avoid the best classified land and to minimise severance of land when the route options are being assessed.

TRANSPORT INFRASTRUCTURE

1.8.3. Crossing under or over rail corridors would need to be considered as the route options develop but their presence is not regarded as a significant constraint.

1.8.4. The A14 junctions 52 and 53 are too close to each other to enable a new junction for the inner and middle route tie in. Therefore, a junction over the A14 with an off line tie in or a modified combined junction would be required. Options would need to be developed with Highway England as part of a later assessment.

1.8.5. Similarly, the road network in the study area is a consideration but not a constraint. For convenience and to minimise disruption to the travelling public, careful choice of road closure, bridge options and locations would be part of any later assessment. The suitability of connections to the existing road network would be reviewed at the next stage of the business case.

COMMERCIAL AND RESIDENTIAL PROPERTIES

1.8.6. Where possible, villages, commercial and residential properties would need to be avoided and the distance to the proposed routes maximised. The main urban areas in the Study area are Ipswich, Kesgrave and Woodbridge.

1.8.7. There are a number of farms, individual dwellings and two golf courses (Fynn Valley Golf Club and Seckford Golf Centre) in the Study Area.

ENVIRONMENTAL

1.8.8. The Study Area and the key environmental constraints identified in the review of the Highway Route options are shown in Figure 1-6[24]. The detailed environmental appraisal of the Highway Route options is presented in Appendix G.

Air Quality

1.8.9. There are no Air Quality Management Area (AQMA) located within the Study Area25. There are five AQMAs located in the centre of Ipswich for Nitrogen Dioxide (NO2 annual mean). The closest AQMAs to the route options are Ipswich AQMAs No. 1 and No. 4 on Chevalier Street, which are located 3.14km south of the Inner Route. There is one AQMA located in the centre of Woodbridge for Nitrogen Dioxide (NO2 annual mean) which is located approximately 3.76km east of the Middle Route.

Noise and Vibration

1.8.10. The Highway Route options do not fall within any Defra Noise Important Areas (NIAs); however, route options are adjacent to several NIAs located on the A12 and the A14, and may have some indirect impacts on these NIAs. The location of the NIAs and the potential sensitive receptors identified within 600m from the Highway Route options are shown in Appendix G.

Historic Environment

1.8.11. There are 269 Listed Buildings and 1 Grade I Registered Park and Garden, Shrubland Hall, within the Study Area. There are also eleven Scheduled Monuments and four conservation areas within the Study Area.

Landscape

1.8.12. The Highway Route options do not cross an Areas of Outstanding Natural Beauty (AONBs). The Highway Route options cross three distinct National Character Areas (NCAs). These are South Norfolk and High Suffolk Claylands, South Suffolk and North Essex Clayland, and Suffolk Coast and Heaths[26].

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[24] Note that Figure 1-6 includes variants for the Highway Route options (i.e. Outer Route variant north of Coddenham; western junction tie into the A14 for the Middle Route and the Inner Route; and eastern junction tie into the A12 for the Inner Route, north of Junction A12/A1214) which have not been assessed in the environmental appraisal but may be considered further at the OBC-stage.
[25] AQMA interactive map (2018). DEFRA Website. Available at: https://uk-air.defra.gov.uk/aqma/maps#. Last accessed 11/04/2019.
[26] Gov.uk (2019). National Character Area profiles. Available online at: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles [Accessed 11/04/2019].

Biodiversity

1.8.13. Three Sites of Special Scientific Interest (SSSI) are located within the Study Area, although not within the route alignment areas. The SSSI's are shown in Figure 1-6.

1.8.14. Ancient Woodland is also present in the Study Area. Ancient woodland is defined as irreplaceable habitat and is protected under the National Planning Policy Framework (NPPF) 201927.

1.8.15. There are a number of Habitats of Principal Importance (HPIs) located within the Study Area, particularly in the north-west, south-east and east. These habitats include deciduous woodland, coastal floodplain grazing marsh, good quality semi-improved grassland, lowland dry acid grassland and lowland heathland.

Water Environment

1.8.16. The Study Area comprises three types of Groundwater Source Protection Zones (SPZs). These include an Inner Protection Zone (Zone I), an Outer Protection Zone (Zone II) and a Total Catchment (Zone III).[28]

1.8.17. The main watercourses present within the Study Area include Coddenham Watercourse, the River Gipping, the River Lark and the River Fynn. Surrounding areas to the three Highway Route options are classified as predominantly Flood Risk Zone 1 with localised areas of Flood Risk Zone 2 and Flood Risk Zone 3 surrounding the main rivers and tributaries (low, medium and high risk of flooding respectively). Some sections of the Highway Route options are crossing a Flood Zone 3b - Functional Floodplain.

1.8.18. There are water abstraction licenses from groundwater sources. The Highway Route options lie within a zone classified as a mixture of major and minor aquifers with low / intermediate / high groundwater vulnerability.

Climate emergency

1.8.19. Suffolk County Council declared a climate emergency on 21 March 2019. At that time the work on the INR project was significantly advanced and there had been a commitment to consult in the summer of 2019. The climate emergency was therefore not considered in the consultation or the SOBC. However, it is recognised that consideration of this declaration will be considered when deciding whether or not the project is taken forward and if it is,

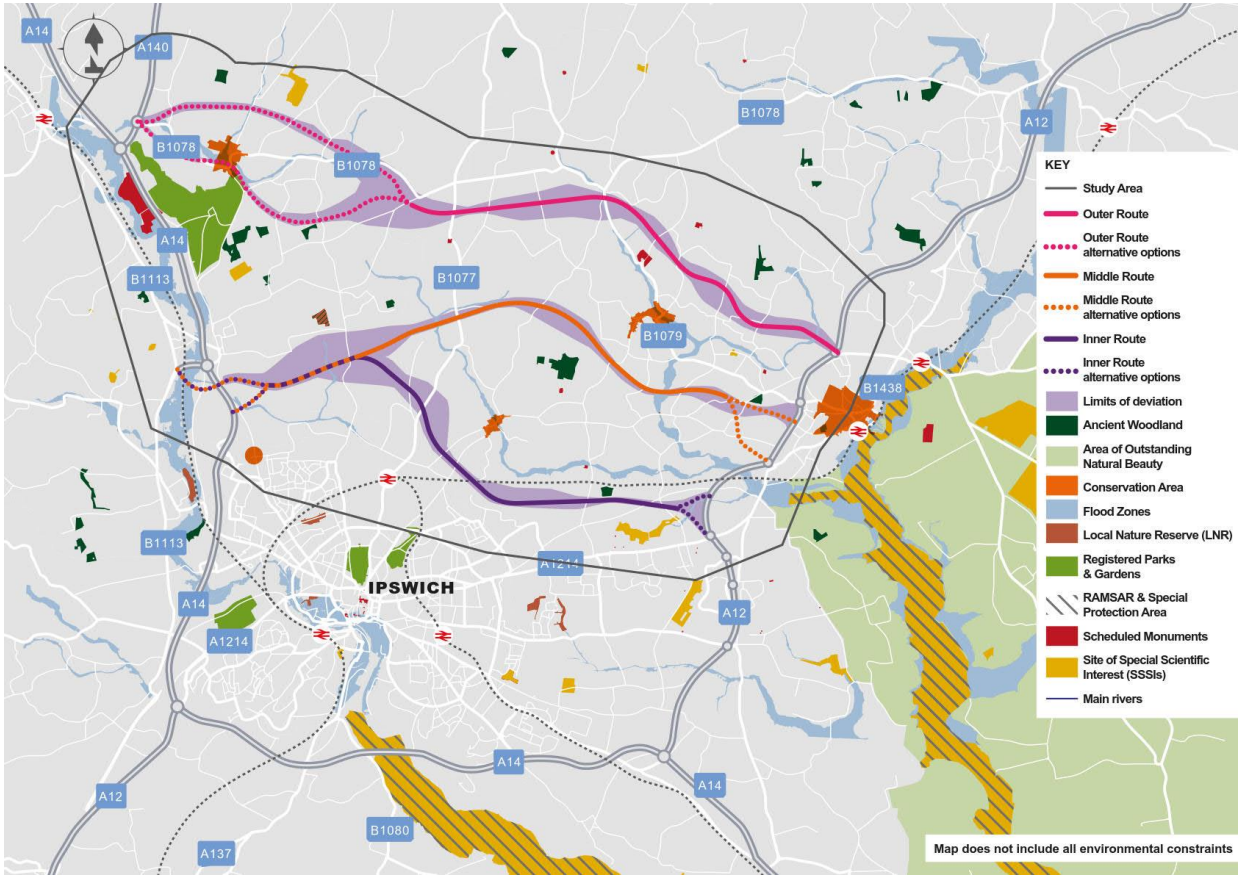
[27] Ministry of Housing, Communities and Local Government (2019). National Planning Policy Framework. February 2019. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf [Accessed 15/04/2019].

[28]

emerging local and national climate strategies would need to be satisfied in the development of a new route and additional growth.

At the time of writing this report, all Suffolk Borough and District Councils have declared a climate emergency.

Figure 1-6 – Study Area and Environmental Constraints



FINANCIAL

1.8.20. The cost of the project would exceed the local funding capacity and therefore to deliver the project funding support would be required from the government.

1.8.21. A number of options have been identified that could provide the 15% local contribution.

1.8.22. The anticipated programme for financial approval would be:

- Submission of Outline Business Case (OBC) - Q4 2021
- Full Business Case submitted to DfT - Q1 2024

PUBLIC ACCEPTABILITY

1.8.23. The project would be to provide a more direct route between the A12 and A14 to the north of Ipswich and reduce congestion on the A14 and A1214. improving access in Ipswich town, this is seen as positively by Ipswich Borough Council and Ipswich residents.

1.8.24. The Member of Parliament (MP) for Central Suffolk and North Ipswich, Dr Daniel Poulter and groups such as 'Stop the Ipswich Northern bypass' are concerned about impacts to the north of Ipswich and have been actively campaigning against the project.

1.8.25. There is also opposition to potential additional housing development in the rural areas to the north of Ipswich. As this is seen as impacting on the local amenity and landscape.

1.8.26. There is support for the project from the Ipswich MP Sandy Martin. He believes that there is a need for an alternate route to tackle severe congestion in the town centre as well as closures on the A14 south of Ipswich which are cause serious disruption in Ipswich.

1.8.27. There is also a pro campaign "Backing the bypass", by Orwell Ahead, where petitioners feel there is a need for additional roads to shoulder the burden of population, housing, transport and freight In the Ipswich area. The project has also received positive feedback from key stakeholders including the Suffolk Chamber of Commerce, New Anglia LEP and road haulage organisations.

1.8.28. Public acceptability of options was considered as part of the selection process following discussions with the Borough and District Councils, when scoring the long list of options.

1.8.29. The Stakeholders section of this Strategic Case lists the key stakeholders associated with the scheme, and the Management Case sets out the approach to stakeholder engagement and management.

OPPORTUNITIES

1.8.30. A key consideration in relation to the opportunities of the INR project is the opportunity for possible public A key consideration in relation to the opportunities of the INR project is the opportunity for possible public transport improvements alongside non-motorised users' facilities improvements.

1.8.31. Linked to local highway authority proposals, would be those being brought forward by developers to address opportunities within the local planning provision. This may be a source of funding contribution should these developments be in line with policy and programmes.

1.9 INTERDEPENDENCIES

1.9.1. Ipswich Northern Route is a 'stand-alone' project, which can be delivered as designed and costed independently, with no other future projects or commissions dependent upon it.

1.9.2. As this Strategic Case has set out, the INR project would enable additional developments. This link between road infrastructure and housing delivery is the key interdependency of the project. The desirability of housing sites would be dependent on sufficient connection from the site to employment and other strategic locations. Therefore, transport intervention is not only a necessity from the perspective of the capacity on the road network, but also to enable future housing growth.

1.10 STAKEHOLDERS

1.10.1. This section identifies the main stakeholders who are affected by the proposed Ipswich Northern Route project, how they have been identified and the method of engagement in order to gather their views on the developing proposals.

STAKEHOLDERS

1.10.2. The Ipswich Northern Route is of substantial interest to those living and working in Suffolk, as well as businesses across Suffolk. As part of the engagement approach and in order to understand the views of stakeholders and the public on developing plans, a first stage informal public consultation was undertaken in summer 2019. More details about the consultation process and outcome are outlined in the Management Case (section 5.7.1).

1.10.3. In addition to the local communities interested in and affected by the proposals, there are a number of key stakeholders who have been identified as having a strategic interest in the project.

1.10.4. These include the local authorities and elected members who are supporting this stage of the project, namely Suffolk County Council, Babergh and Mid Suffolk District Councils, East Suffolk Council, Ipswich Borough Council, with support from West Suffolk Council. All of these councils have been actively involved in the project through the Suffolk Public Sector Leaders Group.

1.10.5. The Suffolk Public Sector Leaders Group has shown its commitment to this stage of the project by providing funding to SCC to develop the SOBC. These partnering councils were also proactively involved in the development of the project objectives and planning and promotion of the public consultation in summer 2019.

1.10.6. If the decision is taken to continue with the project, it is expected that adjoining authorities would be interested and therefore the project team would engage with them in due course.

1.10.7. There has been substantial political interest in the project. The Member of Parliament for Ipswich, Sandy Martin has been supportive of the project and Central Suffolk and North Ipswich MP, Dr Daniel Poulter and Suffolk Coastal MP Dr Thérèse Coffey have spoken out against the project.

1.10.8. The project's objectives of growth and transport reliability make it significantly important to many regional business organisations, including the Suffolk Chamber of Commerce; key traffic generators, such as the Port of Felixstowe; transport bodies, including the Freight Transport Association; and the New Anglia Local Enterprise Partnership.

1.10.9. The project is also relevant to Transport East, the Sub-National Transport Body (STB) covering Suffolk, Norfolk, Essex, Southend and Thurrock.

1.10.10. To date engagement with statutory parties, such as the Environment Agency, utilities companies and Network Rail has been limited to the request for consultation comments. SCC have had initial discussions with Highways England about the INR. This is considered proportionate for the early stage of the project. Extensive engagement would need to take place with these organisations if the project progresses. The consultation was also sent to other local/regional bodies including environmental organisations– for example Suffolk Wildlife Trust.

ENGAGEMENT TO DATE WITH KEY STAKEHOLDER

1.10.11. As part of Ipswich Northern Route, Stage 1 Study Interim Report (2016/2017) an initial local authority stakeholder meeting was held in Ipswich on the 18 October 2016 to discuss the project objectives, and review existing constraints affecting both urban development expansion, and implementation of the INR. The findings of this workshop are considered within the report.

1.10.12. The workshop was attended by officers and members from the following local authorities:

- East Suffolk (Suffolk Coastal & Waveney District Council)
- West Suffolk (Forest Heath & St Edmundsbury)
- Ipswich Borough Council
- Suffolk County Council
- Babergh and Mid Suffolk District Council

1.10.13. In November 2017, the Suffolk Public Sector Leaders Group allocated £550,000 to SCC to develop the project SOBC.

1.10.14. As part of the public consultation a series of stakeholder briefings were undertaken.

- Councillor briefings at Endeavour House on 4 and 5th July; and on 4 July at East Suffolk House, these were available for all county and district councillors.
- Endeavour House, Mid Suffolk District Council, Cabinet briefing, 8 July
- Suffolk Chamber of Commerce, Transport and Infrastructure Board: 16 July 2019
- Suffolk County Council, Endeavour House, exhibition available for all councillors and staff, 18 July 2019
- Ipswich Chamber of Commerce, Board, 15 August 2019

1.10.15. Engagement with key stakeholders would continue if the project progresses, to ensure that they are kept up to date on developments, their concerns understood, and their ongoing involvement / support is achieved.

PUBLIC ENGAGEMENT

1.10.16. In February 2019 a commitment was made by Matthew Hicks, Leader of Suffolk County Council, to undertake a public consultation on the route, alignment and junction options in summer 2019.

1.10.17. This public consultation was undertaken by SCC in partnership with Babergh and Mid Suffolk District Councils, East Suffolk Council and Ipswich Borough Council, with support from West Suffolk Council, between Friday 5 July and Friday 13 September 2019. It was /undertaken to assess views of local people, businesses and other organisations on the indicative route and junction options. Full details of the consultation are included in the Consultation Report, a summary is included in the Management Case (section 5.7.1).

1.11 OPTIONS

1.11.1. This section sets out the options appraisal process before exploring the options and assessing their impact on the proposal's objectives and wider public policy objectives. Risks associated with each option area were identified. The proposed project has been narrowed down from a long list of 32 different options, including a do-nothing option, to inform the three options considered in the consultation.

LONG LIST

1.11.2. The project objectives were developed and refined by SCC in partnership with the local Borough and District Council The long list of options underwent an initial strategic appraisal against the project objectives and subsequently by the DfT Early Assessment and Sifting Tool (EAST). To support this process there were a series of site visits, stakeholder workshops, and review of observed traffic data.

1.11.3. Table 1-7 provides a summary of the long list of options and a brief description. It has been split into the following categories:

Table 1-7 - Long list of Options

Category	Option Name
Bus	Radial Route - Norwich Road - former P&R
	Radial Route - Henley Road
	Radial Route - Westerfield Road
	Radial Route - Tuddenham Road
	Radial Route - Kesgrave Road
	Light Rail Transit (LRT) Orbital
	Bus Rapid Transit (BRT) Orbit
Rail	Increased Frequency of service
	New rail station at Gt Blakenham
	New rail station at Martlesham
	Capacity improvements on Felixstowe branch line
	Improved Connectivity at existing stations
Smart Technology	Smart Parking
	Integrated Smart Public Transport
	Wide scale traffic signal upgrades
	Improved Public Transport RTPI
Other	Car Parking levy
	Congestion charging in Ipswich centre
	Do Nothing
Road	Non-Strategic Eastern relief road
	Non-Strategic Northern relief road
	Non-Strategic Northern fringe relief road
	A14 Junction 53 capacity improvements
	A12 / A1214 Main Road / Kesgrave signalised roundabout improvements
	Outer Highway Route - Single Carriageway
Road	Outer Highway Route - Dual Carriageway

	Mid Highway Route - Single Carriageway
	Mid Highway Route - Dual Carriageway
	Inner Highway Route - Single Carriageway
	Inner Highway Route - Dual Carriageway
	New River Orwell Bridge Crossing
	Tunnel under River Orwell

1.11.4. The Options Appraisal Report provides full details of the options with descriptions, opportunities and impact breakdowns.

SHORTLIST

1.11.5. The long list of 32 options underwent an initial sifting process to discount any options which were not assessed to be appropriate in terms of the project objectives, strategic fit, economic impact or known technical and environmental constraints. The remaining options then underwent a more detailed sifting process which assessed each option against the project objectives and independently using the Early Assessment Sifting Tool (EAST). The Highway Route options consistently performed most strongly across both methods. The Highway Route options have therefore been shortlisted, as shown in Figure 1-7.

Figure 1-7 – Sifting Process Outcome (EAST assessment vs Objectived based assessment)

EAST initial ranking.

Mid Highway Route - Dual Carriageway	1
Inner Highway Route - Single Carriageway	2
Inner Highway Route - Dual Carriageway	3
Mid Highway Route - Single Carriageway	4
Outer Highway Route - Dual Carriageway	5

OBJECTIVE initial ranking.

Inner Highway Route - Dual Carriageway	1
Mid Highway Route - Dual Carriageway	2
Inner Highway Route - Single Carriageway	3
Mid Highway Route - Single Carriageway	4
Outer Highway Route - Dual Carriageway	5

1.11.6. Following option sifting, the OAR identified potential feasible intervention options which would contribute to the delivery of the project objectives, following a preliminary study of their strategic, economic, social, environmental and financial impacts.

Figure 1-8 - Ipswich Northern Route Alignments

- Outer Route –this is the most northern option and connects the A14 near Coddenham, via the A140, to the A12 at Woods Lane.
- Middle Route– this option is south of the outer route and connects the A14 near Claydon to the A12 at Woodbridge.
- Inner Route – this option is the closest to Ipswich and connects the A14 near Claydon to the A12 near Martlesham.

1.11.7. The OAR demonstrates that there is a strong case for further development of the strategic highway options to the north of Ipswich. These options offer benefits to all road users, private cars, commercial vehicles, and public transport. The routes allow connectivity to key connecting routes, increasing the opportunities to diversify flow across all routes and reduce stress points within the network.

1.12 SUMMARY OF THE STRATEGIC CASE

1.12.1. The proposed INR project is closely aligned with national, regional and local transport plans and policies, including:

National Policies

- Moving Britain Ahead – the Government's Transport Investment Strategy (2017)

- Roads Investment Strategy (2015/16 - 2019/20)
- Industrial Strategy (2017)
- National Infrastructure Delivery Plan (2016 – 2021)
- Roads Investment: The Roads Funding Package (2016)
- National Planning Policy Framework (2019)
- National Policy Statement for National Networks (2014)

Regional Policies and Guidance

- Transport East Strategic Transport Plan (2019)
- New Anglia LEP Strategic Economic Plan (2017)
- New Anglia LEP Norfolk and Suffolk economic strategy (2017)
- Suffolk Local Transport Plan (2011 - 2031)
- Suffolk Framework for Inclusive Growth (2018)
- East of England plan (2016)

Local Policies

- Ipswich Borough Council Local Plan (2011 – 2031)
- Suffolk Coastal District Final Draft Local Plan (January 2019)
- Draft new Joint Local Plan document for Babergh and Mid Suffolk districts (2019)

1.12.2. The main problems the project aims to address are as follows:

- Congestion and lack of network resilience
- "Rat-running" traffic on unsuitable rural roads
- Increasing traffic growth and car dependent commuting patterns
- Highway network resilience problems associated with closures of Orwell Bridge
- Noise and air pollution in the Ipswich area
- Housing demand outstripping supply in wider Ipswich area
- Inadequate supply of affordable housing
- Widening productivity gap in Suffolk compared to the rest of the UK

1.12.3. If the INR is not provided, these problems are likely to be exacerbated. Future development in the wider Ipswich area would be restricted due to traffic constraints and congestion would continue to be a problem in Ipswich and the wider area. Without the INR it would be difficult for the area around the town to get rid of the image that congestion and poor accessibility characterise the local road network which could prevent the area from achieving its true growth potential.

1.12.4. In developing the INR, account has been taken of physical, environmental, financial, cultural heritage and public acceptability constraints.

1.12.5. The option appraisal process demonstrates that there is a strong case for further development of the strategic highway options to the north of Ipswich. These options offer benefits to all road users,

key connecting routes, as well as increasing the opportunities to diversify flow across the local network.

1.12.6. Three options have been shortlisted and considered in the SOBC. These are:

- Outer Route –this is the most northern option and connects the A14 near Coddenham, via the A140, to the A12 at Woods Lane.
- Middle Route– this option is south of the outer route and connects the A14 near Claydon to the A12 at Woodbridge.
- Inner Route – this option is the closest to Ipswich and connects the A14 near Claydon to the A12 near Martlesham.

2 THE ECONOMIC CASE

2.1 INTRODUCTION

2.1.1. The Economic Case identifies and assesses all the impacts of the project to determine its overall value for money. It takes account of the costs of developing, building, operating and maintaining the project, and a full range of its impacts. These include those impacts which can be monetised, as well as quantitative and qualitative impacts that cannot be monetised. The economic case considers the extent to which the project's benefits would outweigh its costs.

2.1.2. This section covers:

- Options appraised
- Overview of methodology and assumptions
- Existing transport model overview
- Model specification
- Overview of economic appraisal methodology
- Project costs
- Impacts
- Value for money statement
- Sensitivity testing
- Appraisal Summary Table (AST)
- Summary of the economic case

2.2 OPTIONS APPRAISED

2.2.1. As described in the Strategic Case, review of the long list of options showed that strategic highway routes to the north of Ipswich should offer the largest benefit to road users. Three highway options have been appraised in this SOBC:

- Outer Route
- Middle Route
- Inner Route

2.2.2. The shortlisted options have been appraised using the economic appraisal tools and methods set out within the Appraisal Specification Report (ASR). These are to be described below in this Economic Case.

2.3 OVERVIEW OF METHODOLOGY AND ASSUMPTIONS

2.3.1. The economic appraisal methodology used to assess the INR project is set out within the ASR. This appraisal is underpinned by the use of a SATURN highway assignment model.

2.3.2. The development, validation and use of the updated SATURN model are described in the following reports, provided as appendices to this SOBC.

Table 2-1 - Modelling Reports

Appendix	Title
B	Local Model Validation Report (LMVR) (SATURN)
C	Forecasting Report (SATURN)

2.3.3. The approach is considered to be proportionate to the scale and complexity of the project and business case stage (i.e. SOBC). The approach set out within the ASR provides a robust approach to assess the level of impact caused by the implementation of the project.

2.4 EXISTING TRANSPORT MODEL OVERVIEW

2.4.1. SCC own and maintain the Suffolk County Transport Model (SCTM) comprising a highway assignment model (SATURN), public transport and demand model (VISUM); the model was last refreshed in 2017 with a validation year of 2016.

2.4.2. The SCTM has been developed to an extent that it is able to serve as a high-level strategic assessment tool. However, no strategic model can represent a whole county in fine detail, so the level of detail required for this project has been reviewed prior to testing the project.

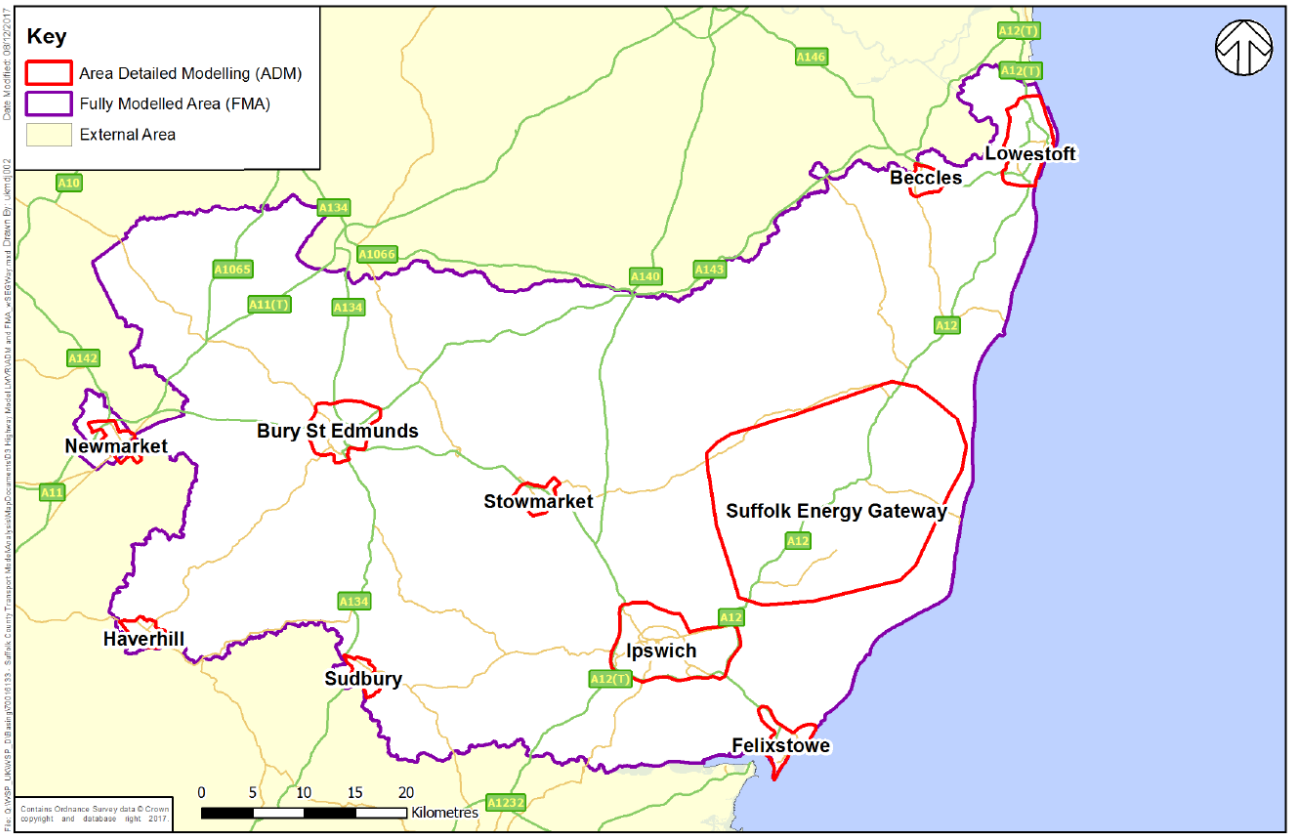
2.4.3. For the purposes of this SOBC, a fixed demand assignment has been conducted which is proportionate to this business case stage (i.e. SOBC) and in accordance with DfT's TAG guidance. If the project progresses to OBC a full variable demand assessment would be undertaken to capture the variable demand effects.

GEOGRAPHICAL COVERAGE

2.4.4. The SCTM covers the entire county of Suffolk to varying degrees of detail, as shown in Figure 2-1. The area of detailed modelling covers the major towns within Suffolk, and it includes all roads with significant traffic volumes and all realistic route choices. Principal strategic routes and junctions have been modelled and capacity restraint achieved using speed/flow curves.

2.4.5. The external area includes a simplified network allowing traffic to enter the fully modelled area at the correct location without capacity restraint. It includes a skeletal network with approximate distances to allow the demand model to capture the full trip length.

Figure 2-1 - Modelled Extent



2.4.6. The project would connect the A14 to the A12 to the north of Ipswich. On Figure 2-1, the approximate location of the project is positioned between Ipswich, Stowmarket and the Suffolk Energy Gateway within the fully modelled area. The key area of interest (i.e. the location of the project) is located centrally within the wider model and sufficiently far from the external buffer network that flows should be representative in this area.

2.5 MODEL SPECIFICATION

2.5.1. The SCTM highway model comprises the following modelled time periods:

- AM peak hour (08:00 – 09:00)
- Average interpeak hour (10:00 – 16:00)
- PM peak hour (17:00 – 18:00)

2.5.2. The SCTM covers the entire county of Suffolk to varying degrees of detail, as shown in Figure 2-1. The area of detailed modelling covers the major towns within Suffolk, and it includes all roads with significant traffic volumes and all realistic route choices. Principal strategic routes and junctions have been modelled and capacity restraint achieved using speed/flow curves.

2.5.3. To allow a detailed economic assessment, trips are split by purpose and vehicle class. This allows the appropriate values of time and distance to be applied both in terms of the generalised cost parameters to help determine vehicle routing and to calculate monetised benefits by purpose.

2.5.4. An opening year of 2027 was assumed for the INR, based on the earliest date the project could be delivered, as well as a second forecast year, the standard 15 years after opening, in 2042.

2.5.5. Further details of the validation and forecasting methodology can be found in the Local Model Validation Report and Forecasting Report respectively,

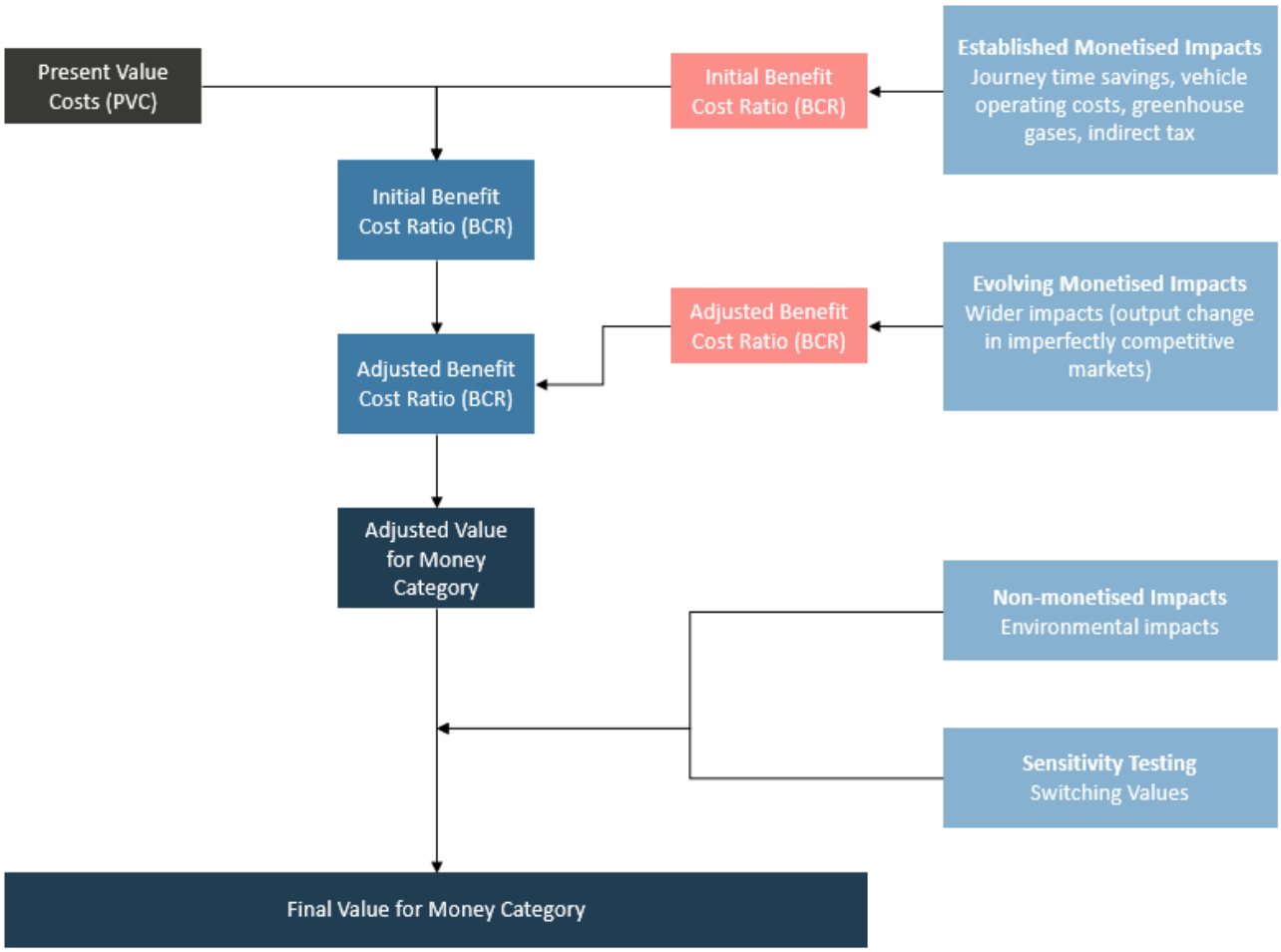
2.6 OVERVIEW OF ECONOMIC APPRAISAL METHODOLOGY AND ASSUMPTIONS

2.6.1. An economic narrative document (Appendix D) has been produced in conjunction with the SOBC, which sets out the rationale behind the scope of the economic assessment. The analysis techniques employed in the appraisal were chosen based on their maturity and associated uncertainty. Overall, the appraisal has been structured around three levels of impacts; the methodology is based on the DfT Value for Money Framework (July 2017) and is illustrated in Figure 2-2.

2.6.2. The economic assessment of the project has been undertaken in accordance with current TAG guidance, including:

- TAG Unit A1 cost-benefit analysis
- TAG Unit A2 economic impacts
- TAG Unit A3 environmental impacts appraisal

Figure 2-2 – Calculation of BCR and VfM score – methodology



LEVEL 1

2.6.3. Level 1 includes methods for estimating the monetary values of expected impacts that are widely accepted and well-researched. This includes the transport user and accident impacts.

- TUBA (Transport User Benefit Analysis) is used to calculate the user benefits from time and vehicle operating cost savings, as well as reductions in greenhouse gas emissions.

LEVEL 2

2.6.4. Level 2 includes wider economic impacts which arise as connectivity increases as the project becomes operational.

- A 10% uplift of business user benefits from TUBA outputs has been calculated to represent potential increases output by businesses, as per TAG unit A2.2.

LEVEL 3

2.6.5. Level 3 includes analysis where monetary valuation methods are not considered sufficiently mature to be definitive.

Table 2-2 – Proposed appraisal methodology and rationale

Analysis level	Project Impacts	Selected appraisal method	Rationale
Level 1- Initial BCR	Journey times and vehicle operating costs	Monetised – Transport Users Benefit Appraisal (TUBA) software applied to results of Strategic Transport Model.	TUBA is an established method of calculating user benefits for transport projects based on economic welfare analysis
	Greenhouse gas emissions	Monetised – TAG Unit A3 method applied to results of Strategic Transport Model	TUBA is an established method of estimating changes in greenhouse gases
	Government tax revenues	Monetised – Transport Users Benefit Appraisal (TUBA) software applied to results of Strategic Transport Model.	TUBA is an established method of estimating tax revenue changes for transport projects based on economic welfare analysis
Level 2 - Adjusted BCR	Output change in imperfectly competitive markets	Monetised – A 10% uplift will be applied on top of business user benefits	TAG specifies this as an established method of capturing the welfare impacts of output change for a project
Level 3 – Non-monetised impacts	Environmental and social impacts felt by local communities	Qualitative – Qualitative TAG A3 method undertaken for the following impacts: air quality, noise, townscape, historic environment; biodiversity; water environment; physical activity; journey quality; security; affordability; severance; option and non-use values	This initial qualitative assessment would be enhanced at the OBC stage of the business case

ORWELL BRIDGE

2.6.6. When the Orwell Bridge is closed, significant additional delay is created within and around Ipswich with A14 traffic forced to route through the town. The introduction of the proposed project could therefore offer significant benefit to the local and strategic transport network and it is therefore important to capture the potential benefit of project in these circumstances.

2.7 COSTS

BASE COSTS

2.7.1. The cost of the project has been estimated by Quantity Surveyors / Cost consultants with inputs from discipline specialists (highway and structural engineers). Land costs have been provided by land agents – Ardent. The estimate includes

- Investment costs including construction costs, land and property costs, preparation and administration
- Operating, maintenance and renewal costs to estimate the whole life costs for the project

2.7.2. These costs provide the base cost estimate. Base costs and project maintenance costs for the three shortlisted options are presented in the tables below.

Table 2-3 – Project Base Costs (£k, 2019)

	Outer Route	Middle Route	Inner Route
Construction Contracts	176,316	195,983	203,842
Professional Fees[29]	52,898	58,793	61,152
Statutory Undertakers Works[30]	13,224	14,699	10,191
Land and Compensation	15,700	14,800	15,300
Total Project Base Costs	258,138	284,276	290,485

Table 2-4 - Project Maintenance Lifecycle Costs (£k, 2019)[31]

	Outer Route	Middle Route	Inner Route
Maintenance Lifecycle Costs	42,600	46,800	49,200

2.7.3. The costs presented in this Economic Case and throughout SOBC are in a different price base (and year) to those presented during the public consultation on the project. The costs in the public consultation were in 2027 prices whereas the costs in table above are in 2019 prices.

2.7.4. For use in economic appraisal the costs need to be expressed in 2010 real prices[32] using a consistent price base as other estimates in the economic case. The costs also need to be

[29] Project Management, Consulting engineers` fees, agent authorities fees, actual costs of pursuing alternative routes (if any) in the early stages of the scheme, Design costs, Public Consultation, Public Inquiry, gaining statutory powers or other licences and consents, compensation, the cost of any surveys carried out during scheme preparation, the costs associated with obtaining statutory orders, and on site Supervision and Testing (Table 1, TAG A1.2)

[30] Utilities - amenities e.g water, sewage, electricity, and natural gas etc.

[31] Over 60-year period

[32] All values should be expressed in real prices to stop the effects of inflation distorting the results. To convert nominal prices to real prices, a price base year and HMT's GDP deflator are used. The real price in

discounted[33] to 2010 to reflect the value of costs over the whole life of the project (assumed to be the standard 60-year appraisal. Finally, the costs must include an allowance for optimism bias[34] and be adjusted to market prices. These steps are to ensure consistency with the unit of account used for the other impacts in this economic case.

2.7.5. The above steps and the resulting changes to the costs are outlined below. Appendix E describes the detailed methodology to show how the project costs have been manipulated for use in the economic appraisal.

RISK ADJUSTMENT

2.7.6. A Quantified Risk Assessment (QRA), using Monte Carlo analysis, cannot been undertaken at SOBC stage of business case development, as it is not considered proportionate given the current stage of design. However, full QRA would be used in the risk-adjustment process at OBC stage. A risk register has already been prepared and risks have been quantified, which would facilitate this process. Risks adjustment have therefore been undertaken at a more general level of sophistication, using the application of an allowance against specific risks.

2.7.7. In lieu of a full QRA a risk allowance of 10% has been applied on top of construction costs. This is based on a notional dual carriageway route design, and it is to be considered robust at this early stage of the project. This will be considered in conjunction with the Stage 1 Optimism Bias value applied to calculate the Present Value of Costs.

Table 2-5 – Project Risk Adjustment (£k, 2019)

	Outer Route	Middle Route	Inner Route
Total Risk Adjustment	25,815	28,428	29,052

any given year is then the nominal price deflated by the change in the GDP deflator between that year and the base year. 2010 is the DfT's current price base year for all economic appraisal. (WebTAG Unit A1.1).

[33] A 'discount rate', represents the extent to which people prefer current over future consumption, is applied to convert future costs and benefits in to their 'present value', the equivalent value of a cost or benefit in the future occurring in 2010.

[34] There is a demonstrated, systematic, tendency for project promoters to be overly optimistic when estimating costs. To redress this tendency an adjustment has been made to the project's costs estimates.

ADJUSTMENT FOR CONSTRUCTION INFLATION

2.7.8. The 2019 price base investment costs are forecast to increase by 3% per annum over the duration of the project. It is currently estimated that maintenance costs remain unchanged in real terms over the appraisal period.

Table 2-6 – Adjustment of Project Costs for Inflation (£k, Nominal)

	Outer Route	Middle Route	Inner Route
Total Future Inflation	58,257	64,061	65,518

OPTIMISM BIAS ADJUSTMENT

2.7.9. Optimism bias has been applied to the project costs (after the application of the risk-adjustment) at 44%, in line with the guidance provided in TAG A1-2, given the project is:

- At SOBC stage (Stage 1), and
- A road project.

2.7.10. Optimism bias has been applied to the maintenance costs at 3%.

Table 2-7 – Project Costs with Adjustment for Inflation and Optimism Bias (£k, Nominal)

	Outer Route	Middle Route	Inner Route
Construction Contracts	312,341	347,180	361,103
Professional Fees	87,377	97,114	101,011
Statutory Undertakers Works	22,912	25,468	17,657
Land and Compensation	28,192	25,577	27,474
Risk Adjustment	45,084	49,635	50,730
Total Maintenance Lifecycle Costs	43,878	48,204	50,676
Total Project Costs	539,785	594,178	608,651

REBASING

2.7.11. The nominal costs are rebased to the Department's base year of 2010 using the latest available TAG Databook's (May 2019) GDP deflator factor.

Table 2-8 – Project Costs Deflated to Department's Base Year (£k, 2010)

	Outer Route	Middle Route	Inner Route
Construction Contracts	233,207	259,219	269,614
Professional Fees	68,574	76,216	79,274
Statutory Undertakers Works	17,389	19,328	13,401
Land and Compensation	20,439	19,644	20,308
Risk Adjustment	34,002	37,441	38,264
Total Maintenance Lifecycle Costs	37,753	41,476	43,603
Total Project Costs	411,764	453,325	464,464

DISCOUNTING

2.7.12. To present project costs in present values, project costs are discounted back to 2010 values. A discount rate of 3.5% is applied for the first 30 years with a 3% discount rate applied thereafter.

Table 2-9 – Present Value Project Costs (£k, Discounted to 2010)

	Outer Route (Outer Route)	Middle Route	Inner Route
Construction Contracts	134,518	149,522	155,518
Professional Fees	43,015	47,808	49,727
Statutory Undertakers Works	10,292	11,440	7,932
Land and Compensation	11,838	11,160	11,534
Risk Adjustment	19,967	21,993	22,474
Total Maintenance Lifecycle Costs	9,333	10,253	10,779
Total Project Costs	228,963	252,177	257,967

MARKET PRICE ADJUSTMENT

2.7.13. Costs are converted from factor costs to market prices using the indirect tax correction factor contained within the most recent TAG Databook (May 2019).

Table 2-10 – Present Value Project Costs in Market Price (£k, 2010)

	Outer Route	Middle Route	Inner Route
Construction Costs	160,076	177,932	185,067
Professional Fees	51,188	56,892	59,175
Stats	12,248	13,614	9,439
Land Costs	14,088	13,280	13,729
Risk Adjustment	23,761	26,173	26,744
Total Maintenance Lifecycle Costs	11,106	12,201	12,827
Present Value of Costs	272,466	300,091	306,980

2.8 IMPACTS

2.8.1. The benefits assessed are:

- Transport Economic Efficiency (user benefits)
- Environmental impacts (greenhouse gases)
- Wider public finances (indirect taxation revenues)

2.8.2. The assessment assumes that the opening year for the project would be 2027 with an appraisal period spanning 60 years from opening. The choice of appraisal period is informed by HM Treasury's Green Book and TAG which stipulates a 60-year appraisal for projects that are deemed to have an "indefinite life", including some major infrastructure schemes such as tunnels and bridges.

2.8.3. Annualisation factors for the three modelled time periods are based on values obtained from local traffic survey data.

2.8.4. The economic and environmental appraisal excludes the impacts as a result of construction. This is proportional to the analysis at the SOBC stage because a construction mitigation plan has not been developed yet. As a project progresses the construction programme would become more detailed allowing mitigation for construction impacts to be formulated.

TRANSPORT ECONOMIC EFFICIENCY

2.8.5. The Transport Economic Efficiency (TEE) benefits are derived from travel time and vehicle operating cost benefits as a result of the project.

2.8.6. TEE benefits for the project were assessed using the DfT's Transport Users Benefit Appraisal (TUBA) software. TUBA calculates the benefits associated with journey time savings and vehicle

operating cost savings using informaion taken from the traffic model, in accordance with the procedures and economic parameters in TAG Unit A1. The standard TUBA 1.9.12 economics file was used.

2.8.7. The full Transport Economic Efficiency (TEE) Table is included in Appendix F and summarised in Table 2-11.

Table 2-11 - Transport User Benefits (£k, 2010 prices discounted to 2010)

Transport Economic Efficiency (TEE) Benefits		Outer Route)	Middle Route	Inner Route
Consumer – commuting user benefits	Travel Time	139,516	217,263	241,904
	Vehicle operating costs	2,769	4,301	8,075
	Subtotal	142,285	221,564	249,979
Consumer – other user benefits	Travel Time	113,145	153,055	187,747
	Vehicle operating costs	2,246	3,030	6,268
	Subtotal	115,391	156,085	194,015
Business benefits	Travel Time	94,245	136,339	167,137
	Vehicle operating costs	1,871	2,699	5,580
	Subtotal	96,116	139,038	172,717
Total TEE benefit		353,793	516,686	616,711

2.8.8. The results show the Inner route option provides the highest transport user benefits; this reflects the geographical proximity of this option to the centre of Ipswich. The latter seems to be the most important driver of road user benefits: the further the proposed road is from Ipswich; the lower the overall road user benefit levels are. The travel time benefits corroborate this as they increase with the proposed route running closer to Ipswich.

GREENHOUSE GASES

2.8.9. Greenhouse gas impacts depend upon changes in traffic flows, composition, speeds and distance travelled as a result of the project. As such, the proposed project is expected to have an impact on levels of greenhouse gas emissions.

2.8.10. As defined by the Intergovernmental Panel on Climate Change, GHG emissions are expressed as tonnes of carbon dioxide equivalent (tCO2e) for the purposes of this appraisal.

2.8.11. The UK is legally bound by the Climate Change Act 2008 to achieve a target to reduce GHG emissions to at least 80% below base year (1990) levels by 2050.

2.8.12. For the purposes of the SOBC, the Transport User Benefit Appraisal (TUBA) software program was used to assess the impacts of the project over a 60 year appraisal period (2027 - 2086). TUBA calculates and evaluates the discounted present value of changes in CO2e for non-traded (i.e. petrol, diesel, fuel oil) and traded (e.g. electricity) fuel consumption.

2.8.13. The project is expected to reduce greenhouse gas emissions for all options. The forecast reduction in non-traded emissions equates to the following NPV's:

- Outer Route - £1,410,000
- Middle route - £2,300,000
- Inner Route - £4,815,000.

INITIAL BENEFIT COST RATIO (BCR)

2.8.14. The Benefit-Cost Ratio (BCR) is calculated by dividing the Present Value of Benefits (PVB) by the Present Value of Costs (PVC).

2.8.15. Based on the Analysis of Monetised Costs and Benefits (AMCB) the total monetised benefits exceed the costs for all options. The initial BCR ranges from 1.3:1 to 2.0:1 for the options considered. This means that the initial value for money category ranges from Low for the Outer route option to High for the Inner route option.

The initial value of BCR includes monetised benefits of greenhouse gas reductions and indirect taxation impacts, but does not include benefits accruing from wider economic impacts. The calculation of the initial BCR is set out in Table 2-12.

Table 2-12 - Analysis of Monetised Costs and Benefits (£k, 2010 prices discounted to 2010)

Analysis of monetised costs and benefits (Initial BCR)	Outer Route	Middle Route	Inner Route
Greenhouse Gases	1,410	2,300	4,815
Economic Efficiency: Consumer Users (Commuting)	142,285	221,563	249,979
Economic Efficiency: Consumer Users (Other)	115,391	156,085	194,015
Economic Efficiency: Business Users and Providers	96,117	139,037	172,717
Wider Public Finances (Indirect Taxation Revenues)	2,768	4,930	10,742
Present Value of Benefits (PVB)	352,480	514,274	611,425
Investment cost	261,360	287,890	294,153
Operating costs	11,106	12,201	12,827
Present Value of Costs (PVC)	272,446	300,091	306,980
Net Present Value (NPV)	80,013	214,183	304,445
Initial BCR	1.3:1	1.7:1	2.0:1

WIDER IMPACTS

2.8.16. Wider Economic Impacts (WEI) include additional benefits (or disbenefits) that arise as the impact of transport improvements is transmitted into the wider economy. In case of the project, the following impacts are considered to be important:

- Labour supply impacts
- Dependent development
- Output change in imperfectly competitive markets
- Move to more/less productive jobs
- Agglomeration impacts

2.8.17. Both the strategic case and economic narrative have demonstrated that the project would result in impacts that are additional to the typical transport user benefits from journey time savings.

2.8.18. The valuation of additional benefits is important to determine the full extent of the project's impact; however, a full wider economic impact appraisal has not been undertaken at this SOBC stage of business case development. This is in line with TAG guidance, and reflects the complexity and proportionality of the benefit assessments required at the SOBC stage. However, it is recognised that the inclusion of these other benefits could increase the potential value of benefits associated with the project.

2.8.19. Reducing transport costs to businesses encourages them to increase their production of goods and services, known as 'output change in imperfectly competitive markets'. A 10% uplift to business user benefits has been applied to represent 'output change in imperfectly competitive markets' as per TAG unit A2.2. This represents the additional consumer surplus associated with increased output in imperfectly competitive markets.

2.8.20. It is considered proportionate to only include the increase output change at SOBC stage while the project is still in its infancy. As a project develops the inclusion of other wider economic impact such as agglomeration and labour market impact would be considered.

2.8.21. The table below shows the wider economic impacts calculated for the three appraised options. Having the highest level of business user benefits, the Inner route generates the largest level of additional economic benefits. The middle route option generates the second largest, while the outer route option generates the lowest level of additional benefits.

Table 2-13 – Wider Economic Impacts per Option (£k, 2010)

	Outer Route	Middle Route	Inner Route
Wider Economic Impacts	9,612	13,904	17,272

ADJUSTED BENEFIT COST RATIO (BCR)

The results of the adjusted BCRs are set out in Table 2-14.

Table 2-14 - Adjusted BCR Calculation (£k, 2010 prices discounted to 2010)

Adjusted BCR	Outer Route	Middle Route	Inner Route
Initial Present Value of Benefits (PVB)	352,480	514,274	611,425
Present Value of Costs (PVC)	272,446	300,091	306,980
Initial Net Present Value (NPV)	80,013	214,183	304,445
Initial BCR	1.3:1	1.7:1	2.0:1
Output Change in Imperfectly Competitive Markets	9,612	13,904	17,272
Adjusted Present Value of Benefits (PVB)	362,091	527,177	628,697
Adjusted Net Present Value (NPV)	89,625	228,086	321,717
Adjusted BCR	1.3:1	1.8:1	2.1:1

2.8.22. With the adjustment, the BCR increases slightly but overall remains in the same range, strengthening the case for the Inner Option. With regards to the remaining two options, the adjustment does not result in a significant uplift in observed benefits. The project therefore remains in the Low (Outer Route) to High (Inner Route) value for money categories.

ENVIRONMENTAL IMPACTS

2.8.23. The environmental appraisal has been conducted on three corridors which are shown in Figure 1 in the Appendix G - Environmental Impact Note[35]. These are as follows.

[35] The environmental constraint map (Figure 1 in Appendix G) shows variants for the Highway Route options (i.e. Outer Route variant north of Coddenham; western junction tie into the A14 for the Middle Route and the Inner Route; and eastern junction tie into the A12 for the Inner Route, north of Junction A12/A1214) which

- Outer Route;
- Middle Route;
- Inner Route.

2.8.24. The environmental appraisal has drawn on the methodology and criteria set out in the TAG unit A3 'Environmental Impact Appraisal' and Volume 11 of the Design Manual for Roads and Bridges (DMRB)[36]. It has also drawn on professional judgement based on its experience for similar highway projects.

2.8.25. This qualitative appraisal supports the development of the SOBC to seek funding for the INR Project. The following sub-impact areas were appraised qualitatively for the environmental topics defined in the TAG unit A3 guidance. These are:

- Air Quality;
- Greenhouse gases;
- Noise;
- Historic Environment;
- Landscape;
- Biodiversity; and
- Water Environment.

2.8.26. The Townscape topic was scoped out from further appraisal as the landscape character of the Study Area (shown in Figure 1-6) is primarily rural. However, the potential impacts on settlements/towns located within close proximity to the Highway Route options have been considered in the Landscape topic.

2.8.27. A buffer from the centreline of each Highway Route option has been defined for each environmental topic to undertake the environmental appraisal.

2.8.28. The qualitative appraisal is preliminary and will not provide a monetised assessment to support the derivation of the BCR. This desk-based exercise used readily available data and did not involve the completion of surveys, site visits or modelling. SCC would undertake a more rigorous assessment of environmental impacts and provide a monetised benefits/impacts at OBC-stage.

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have not been assessed in the environmental appraisal but may be considered further at the OBC-stage. These were identified for consultation to reflect options being explored by the design team for the tie-in of the route options to the A12 and the A14. These considered environmental and engineering constraints.

[36] Highways England (2008) Design Manual for Roads and Bridges Volume 11 Section 2 Parts 5 and 6 – Assessment and Management of Environmental Effects. Available online at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section2.htm. [Accessed 25/03/2019].

2.8.29. TAG worksheets for each topic have been completed (see Appendix G) to provide evidence for the overall score incorporated into the Appraisal Summary Table, which support the determination of the BCR for each option as detailed further in Section 2.8 of the SOBC.

2.8.30. The sections below present a summary of the findings of the TAG appraisal of the three route corridors for each environmental topic. A summary of the key findings of each topic is also provided with key recommendations for the OBC. A more detailed breakdown of the expected environmental impacts is presented in Appendix G.

Table 2-15 - Environmental Impact Summary

Option	Noise*	Air Quality*	Greenhouse Gases*	Landscape	Historic Environment	Biodiversity	Water Environment
Outer Route	Slight Adverse	Slight Adverse	Neutral	Moderate Adverse	Large Adverse	Large adverse	Slight Adverse
Middle Route	Slight Adverse	Slight Adverse	Neutral	Moderate Adverse	Moderate Adverse	Large adverse	Moderate Adverse
Inner Route	Slight Adverse	Slight Adverse	Neutral	Moderate Adverse	Moderate Adverse	Large adverse	Moderate Adverse

** TAG does not give scores for these topics, these are estimates only, based on a 7-point scale in order to give some proportion to the appraisal.*

The scoring guide used to conduct the environmental option appraisal is presented below:

- Beneficial (Slight, Moderate and Large): The proposed option is expected to have a positive impact.
- Neutral effects: The proposed option is not expected to have noticeable change on the environment.
- Slight Adverse (negative) effect: This may require additional standard mitigation measures.
- Moderate Adverse (negative) effect: This may require a change in design or the implementation of additional specific mitigation measures.
- Large Adverse (negative) effect: The proposed option is very likely to require a change in design in addition to the implementation of standard mitigation measures

2.9 VALUE FOR MONEY STATEMENT

2.9.1. The analysis of the monetised benefits demonstrates that, depending on the modelled option, the project offers a 'Low' to 'High' initial and adjusted benefit-cost ratios. Overall, the case is strongest for the Inner Route, in terms of the overall value for money category.

PRESENT VALUE OF COSTS AND BENEFITS

The monetised costs and benefits assessed are set out in Table 2-16.

Table 2-16 - Present Value of Costs and Benefits Assessed (£, 2010 prices discounted to 2010 values)

Analysis of Monetised Costs and Benefits	Outer Route	Middle Route	Inner Route
Greenhouse Gases	1,410	2,300	4,815
Economic Efficiency: Consumer Users (Commuting)	142,285	221,563	249,979
Economic Efficiency: Consumer Users (Other)	115,391	156,085	194,015
Economic Efficiency: Business Users and Providers	96,117	139,037	172,717
Wider Public Finances (Indirect Taxation Revenues)	2,768	4,930	10,742
Initial Present Value of Benefits (PVB)	352,480	514,274	611,425
Investment cost	261,360	287,890	294,153
Operating costs	11,106	12,201	12,827
Present Value of Costs (PVC)	272,446	300,091	306,980
Initial Net Present Value (NPV)	80,013	214,183	304,445
Initial BCR	1.3:1	1.7:1	2.0:1
Output Change in Imperfectly Competitive Markets	362,047	527,960	628,056
Adjusted Present Value of Benefits (PVB)	362,091	528,177	628,697

Adjusted Net Present Value (NPV)	89,625	228,086	321,717
Adjusted BCR	1.3:1	1.8:1	2.1:1

2.9.2. Based on the Analysis of Monetised Costs and Benefits (AMCB) the total monetised benefits exceed the costs for all options. The adjusted BCR ranges from 1.3:1 to 2.1:1 for the options considered. This means that the initial value for money category ranges from Low for the Outer route option to High for the Inner route option.

BENEFIT COST RATIO (BCR)

2.9.3. The value for money category is based on the Benefit Cost Ratio (BCR). The appraisal shows that the highest calculated BCR is for the Inner Route, with an initial BCR of 2.0:1, which increases to 2.1:1 after the inclusion of wider economic benefits.

2.9.4. The higher value for money of the Inner Route stems from the route's closeness to Ipswich town centre and the existing A14 bypass to the south of Ipswich and the resultant shorter trips for road users wishing to make local east/west trips. As identified in the Economic Narrative (supplied in Appendix D), the Suffolk labour market exhibits a high degree of insularity, i.e. the highway network accommodates a large share of regional and local vehicular traffic.

2.9.5. The relative benefit of the Inner Route to the Middle and Outer routes is the proximity of a high capacity road link is close to Ipswich and the strategic road network, allowing a more direct route for Ipswich bound and regional commuting and business traffic, as well as long distance transit traffic. Overall, business would benefit from reduced congestion, faster journeys and improved journey time reliability, with reduced costs and better access to markets, whilst commuters would similarly benefit from shorter, more reliable, journeys to work. These benefits, which are included in the BCR calculations would support local development and economic growth within Ipswich.

2.9.6. The project, excluding construction impacts, is expected to lead to a reduction in greenhouse gas emissions; these have been monetised and included in the BCR.

2.10 SENSITIVITY TESTING

2.10.1. Sensitivity analyses examine the effect of changes in key input variables and the degree of sensitivity in expected outcomes. HM Treasury's Green Book recommends that scenarios are chosen to explore technical, economic, and political uncertainties which can affect the success of an intervention, and that, at a minimum, 'switching value analysis' is undertaken.

2.10.2. In reaching the final VfM category for the project, consideration should be given to the impact on the project's VfM categorisation if these impacts could be fully captured, monetised and assured. This can be considered through application of the concept of 'switching values' as defined in the DfT's VfM Framework. This indicates the required change in project costs or benefits for the project to shift into an adjacent VfM category. In this instance, only this sensitivity scenario has been

modelled – this is proportionate to the current stage of business case development. Comprehensive sensitivity testing would be undertaken on key inputs to project costs and benefits at the OBC stage.

2.10.3. The core scenario for the analysis is the adjusted BCR, which comprises initial present value costs and benefits and wider economic impacts (estimated at 10% of business user benefits). In each scenario, the degree of change is determined by the value to 'switch' to either the next higher or lower VfM category compared to the core scenario. Table 2-17 presents the switching value analysis for all three options.

Table 2-17 – Switching Value Analysis Results

		Outer Route	Middle Route	Inner Route
Scenario 1: Core	Initial VfM Category	Low	Medium	High
Scenario 2: Switch to next Higher VfM category	Cost Adjustment (%)	-11%	-13%	-49%
	Cost Adjustment (£k, 2010)	-31,072	-36,002	-149,806
	Benefit Adjustment (%)	13%	14%	95%
	Benefit Adjustment (£k, 2010)	46,608	72,005	599,223
	New (Target) VfM Category	Medium	High	Very High
Scenario 3: Switch to next Lower VfM category	Cost Adjustment (%)	33%	17%	2%
	Cost Adjustment (£k, 2010)	89,625	52,027	7,368
	Benefit Adjustment (%)	-25%	-15%	-2%

	Benefit Adjustment (£k, 2010)	-89,625	-78,041	-14,737
	New (Target) VfM Category	Poor	Low	Medium

2.10.4. In the switch to higher value for money scenario, Middle route option presents the smallest margin towards upper bands where a 13% reduction in costs or similar increase in benefits (14%) can push the project upwards into 'High' value for money. In monetary terms, this is a £36m PV and £72m PV change, respectively.

2.10.5. Based on the appraisal at this stage the Middle route option is unlikely to switch to a higher value for money category if wider economic benefits such as agglomeration and labour supply changes are monetised and included in the appraisal. The monetisation of these impacts would be considered at the OBC stage.

2.10.6. In the second scenario, where a switch to a lower value for money band was modelled, the value for money category for 2 out of the 3 options are unlikely to change due to the magnitude of the necessary change in costs and benefits. However, it can be argued that the Inner route (presenting the highest BCR in the baseline scenario) could realistically fall to 'Medium' value for money, should a marginal change in costs (2% increase) and benefits (2% fall) occur. In monetary terms, the required change is £7m PV and £14m PV, respectively.

2.10.7. The analysis of results indicates that the options with the highest benefit-cost ratios, Middle and Inner routes, have the highest chance of changing value for money due to a change in key inputs. The margin by which Inner route is in the 'High' VfM category is small, and this option is sensitive to changes in key inputs, which could lead to a reduction in value for money. The remaining options show a high level of resilience to a fall in value for money due to the scale of the required increase in costs or fall in benefits.

2.10.8. Overall, the analysis shows that that the project has a strong likelihood of achieving 'Medium' value for money regardless of the option selected, with the potential for this to achieve 'High' for the Inner route. As the project progresses, consideration would be given to the inclusion of agglomeration and labour market impacts in the appraisal, which could be significant for a project such as this one. These impacts could lead to the value for money category remaining at or increasing to 'High.

2.11 APPRAISAL SUMMARY TABLE (AST)

2.11.1. The AST presents in a single table all the evidence from the economic appraisal. It records all the impacts which have been assessed and described above – economic, fiscal, social distributional and environmental impacts – assessed using monetised, quantitative or qualitative information as appropriate. The AST for the project, in line with TAG requirements, is included in Appendix H.

2.12 SUMMARY OF THE ECONOMIC CASE

2.12.1. The Economic Case identifies and assesses all the impacts of the project to determine its overall value for money. It takes account of the costs of developing, building, operating and maintaining the project, and a full range of its impacts, including those impacts which can be monetised.

BENEFIT - COST RATIO

2.12.2. It has been shown that the project's benefit-cost ratio is expected to be in the 'Low' to 'High' category depending on the modelled option. Due to the small difference in investment and operating costs, the individual BCRs are influenced by the shortlisted options' proposed benefit levels. This favours the Inner and Middle route options with shorter link lengths and higher traffic flows as the travel time benefits (regardless of user class) are considerable larger in these scenarios. Overall, the appraisal concludes that the 'Inner Route' is expected to realise the highest value for money benefits both with and without including wider economic benefits.

2.12.3. The table below provides a summary of the expected benefit-cost ratios both pre and post adjustment for wider economic impacts.

Table 2-18 – Summary of Benefit-Cost Ratios per Shortlisted Option

	Outer Route	Middle Route	Inner Route
Initial BCR	1.3:1	1.7:1	2.0:1
Adjusted BCR	1.3:1	1.8:1	2.1:1

VALUE FOR MONEY CATEGORY

2.12.4. Overall the INR should deliver value for money as depending on the option considered the value for money category is either 'Low', 'Medium', or 'High'. The addition of wider economic impacts only has a marginal effect on benefit levels as business user efficiency gains (of which WEIs are derived in the current methodology) are the smallest of the three user benefit categories modelled.

SENSITIVITY TESTING

2.12.5. As demonstrated in section 2.10, in the core scenario, it is likely that the project would achieve at least ‘Medium’ value for money. The Outer and Middle route options show high resilience in value for money, while Inner continues to present the best case for investment in the current scenario. However, due to marginal switching values for the Inner route, changes in key inputs could have a significant effect on value for money. With the inclusion of agglomeration and labour market impact, the ‘High’ value for money designation for the Inner route would be strengthened however value for money would likely not increase for the other two options. This would be tested if the project progresses to the OBC stage.

3 THE FINANCIAL CASE

3.1 INTRODUCTION

3.1.1. This chapter sets out the financial case for the proposed project to demonstrate its affordability. It describes:

- How much the proposed options are expected to cost, and how this has been calculated;
- Risks that could affect the cost of the project;
- How the project would be paid for and by whom; and
- The anticipated profile of expenditure over time (whole life costs).

3.1.2. This chapter deals with costs and accounting issues. The question of value for money is dealt with separately in the Economic Case.

3.2 COSTS

3.2.1. The estimated costs of the project for three options from the Option Assessment process, and taken to consultation, at out-turn prices excluding non-recoverable VAT, are as follows:

- Outer route £342,210,000
- Middle route £376,764,000
- Inner route £385,055,000

3.2.2. The financial case describes how these costs have been estimated.

OUT-TURN PRICE ADJUSTMENT

3.2.3. The cost estimates assume a price base of 2019 Q2. An allowance has been made for expected inflation between the date of the estimate and the date when the expenditure is expected to occur. Construction inflation has been used to inflate the project costs, 3% per annum between 2020/21 and 2028/29[37].

3.2.4. The build-up of the cost estimates for each option is provided in Table 3-1 to Table 3-3 below.

Table 3-1 – Summary of project costs for Outer route

[37] The project could be open by the end of 2027 however the project will likely incur some land and compensation costs following project opening.

Project Elements	Total in £000's
Construction Contracts	176,316
Design Investigations, Surveys, Procurement, Supervision and Client Costs	52,898
Statutory Undertakers Works	13,224
Land and Compensation	15,700
Total Cost (Excluding quantified risk and optimum bias)	258,138
Risk (10%)	25,815
Total Cost (Excluding optimum bias)	283,953
Adjustment to out-turn (inflation)	58,257
Project Cost (out-turn prices)	342,210

Table 3-2 - Summary of project costs for Middle route

Project Elements	Total in £000's
Construction Contracts	195,983
Design Investigations, Surveys, Procurement, Supervision and Client Costs	58,793
Statutory Undertakers Works	14,699
Land and Compensation	14,800
Total Cost (Excluding quantified risk and optimum bias)	284,275
Risk (10%)	28,428
Total Cost (Excluding optimum bias)	312,703
Adjustment to out-turn (inflation)	64,061
Project Cost (out-turn prices)	376,764

Table 3-3 - Summary of project costs for Inner route

Project Elements	Total in £000's
Construction Contracts	203,842
Design Investigations, Surveys, Procurement, Supervision and Client Costs	61,152
Statutory Undertakers Works	10,191
Land and Compensation	15,300
Total Cost (Excluding quantified risk and optimum bias)	290,485
Risk (10%)	29,052
Total Cost (Excluding optimum bias)	319,537
Adjustment to out-turn (inflation)	65,518
Project Cost (out-turn prices)	385,055

PROJECT PREPARATION AND CONSTRUCTION

3.2.5. The cost of project preparation and construction has been estimated by Quantity Surveyors / Cost consultants with inputs from discipline specialists (highway and structural engineers). Land costs have been provided by land agents – Ardent. Some of the land costs could be incurred after the project opens by, earliest at the end of 2027, so the cost profiles in section 0 look at costs from 2020/21 Financial Year (FY) to 2028/29 FY.

RISK ALLOWANCE / RISK COST ADJUSTMENT

3.2.6. The actual cost of delivering the project would not be known until the preferred route option has been selected, detailed design had been completed, a greater understanding of risks had been determined, land purchased, and tender prices had been received. To reflect the uncertainty associated with an incomplete understanding of risk and other project "unknowns", a risk allowance of 10% has been included to obtain a risk-adjusted cost.

3.2.7. A Quantified Risk Assessment (QRA), using Monte Carlo analysis, cannot be undertaken at the SOBC stage of business case development, as it is not considered proportionate given the current stage of design. However, full QRA would be used in the risk-adjustment process at OBC stage.

3.3 SPEND PROFILE

3.3.1. The assumed annual profile of expenditure is shown in Table 3-4 to Table 3-6.

Table 3-4 - Breakdown of project costs for Outer route

Project Elements	Cost in £000's									
	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Total
Construction Contracts	-	-	-	-	-	70,526	70,526	35,263	-	**176,316**
Design Investigations, Surveys, Procurement, Supervision and Client Costs	5,290	5,290	5,290	10,579	13,224	5,290	5,290	2,645	-	**52,898**
Statutory Undertakers Works	-	-	-	-	2,645	7,934	2,645	-	-	**13,224**
Land and Compensation	-	-	-	-	-	4,710	5,495	3,140	2,355	**15,700**
Total Cost (Excluding quantified risk and optimum bias)	5,290	5,290	5,290	10,579	15,869	88,460	83,956	41,048	2,355	**258,138**
Risk (10%)	529	529	529	1,058	1,587	8,846	8,396	4,105	236	**25,815**
Total Cost (Excluding optimum bias)	5,819	5,819	5,819	11,637	17,456	97,306	92,352	45,153	2,591	**283,953**
Adjustment to out-turn (inflation)	175	354	540	1,461	2,780	18,882	21,230	12,045	790	**58,257**
Project Cost (out-turn prices)	**5,994**	**6,173**	**6,359**	**13,098**	**20,236**	**116,188**	**113,582**	**57,198**	**3,381**	**342,210**

Table 3-5 - Breakdown of project costs for Middle route

Project Elements	Cost in £000's									
	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Total
Construction Contracts	-	-	-	-	-	78,393	78,393	39,197	-	**195,983**
Design Investigations, Surveys, Procurement, Supervision and Client Costs	5,879	5,879	5,879	11,759	14,699	5,879	5,879	2,940	-	**58,793**
Statutory Undertakers Works	-	-	-	-	2,940	8,819	2,940	-	-	**14,699**
Land and Compensation	-	-	-	-	-	4,440	5,180	2,960	2,220	**14,800**
Total Cost (Excluding quantified risk and optimum bias)	5,879	5,879	5,879	11,759	17,639	97,531	92,392	45,097	2,220	**284,275**
Risk (10%)	588	588	588	1,176	1,764	9,753	9,239	4,510	222	**28,428**
Total Cost @ 2019 Q2 prices (Excluding optimum bias)	6,467	6,467	6,467	12,935	19,403	107,284	101,631	49,607	2,442	**312,703**
Adjustment to out-turn (inflation)	194	394	600	1,623	3,090	20,819	23,363	13,234	744	**64,061**
Project Cost (out-turn prices)	**6,661**	**6,861**	**7,067**	**14,558**	**22,493**	**128,103**	**124,994**	**62,841**	**3,186**	**376,764**

Table 3-6 - Breakdown of project costs for Inner route

Project Elements	Cost in £000's									
	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Total
Construction Contracts	-	-	-	-	-	81,537	81,537	40,768	-	**203,842**
Design Investigations, Surveys, Procurement, Supervision and Client Costs	6,115	6,115	6,115	12,231	15,288	6,115	6,115	3,058	-	**61,152**
Statutory Undertakers Works	-	-	-	-	2,038	6,115	2,038	-	-	**10,191**
Land and Compensation	-	-	-	-	-	4,590	5,355	3,060	2,295	**15,300**
Total Cost (Excluding quantified risk and optimum bias)	6,115	6,115	6,115	12,231	17,326	98,357	95,045	46,886	2,295	**290,485**
Risk (10%)	612	612	612	1,223	1,733	9,836	9,505	4,689	230	**29,052**
Total Cost @ 2019 Q2 prices (Excluding optimum bias)	6,727	6,727	6,727	13,454	19,059	108,193	104,550	51,575	2,525	**319,537**
Adjustment to out-turn (inflation)	202	410	624	1,689	3,036	20,995	24,033	13,759	770	**65,518**
Project Cost (out-turn prices)	**6,929**	**7,137**	**7,351**	**15,143**	**22,095**	**129,188**	**128,583**	**65,334**	**3,295**	**385,055**

3.4 BUDGETS / FUNDING COVER

3.4.1. There are four potential avenues of support to fund the project:

- Government funds
- Local sources
- Private finance
- Borrowing

3.4.2. The primary source of funding (85%) identified to deliver this project would be the Department for Transport's (DfT) Local Large Majors (LLM) Fund, as the project cost exceeds the £50m threshold for the Major Road Network Programme specified with the Investment Planning Guidance: For the Major Road Network and Large Local Majors Programmes (2018).

3.4.3. The local contribution would comprise of funding from be funded locally from a combination of sources. It is anticipated that local funding would account for 15% of project costs although this could be higher. The assumed overall funding package for the project is summarised in Table 3-7.

Table 3-7 - Budgetary Impact Summary

	Budgetary Impact Summary (£000's)		
	Outer route	Middle route	Inner route
Government/ DfT Funding (85%)	290,879	320,249	327,297
Local Contribution (15%)	51,332	56,515	57,758
Total	**342,210**	**376,764**	**385,055**

3.4.4. The government contribution would be significant, therefore each of the four avenues identified above have been explored further to consider. The following range of potential funding options have been identified:

- **Local Growth Fund** – There is a potential investment opportunity through a future New Anglia LEP Growth Deal. SCC and the supporting councils could submit a bid to the LEP to try to secure additional funding for the project.
- **Highways England Road Investment Strategy** – The project would provide significant benefit to the Strategic Road Network. A contribution to the project or, for the inner and middle route options, delivery of the western junction tie into the A14 could be provided through a future RIS process.
- **Pooled business rates** – The Business Rate Supplements Act 2009 makes provision for authorities to levy a supplement on the business rate. Authorities are able to use the proceeds to fund additional investment aimed at promoting the economic development. Levies could be raised within a defined geographical area in Suffolk and could be extended to residential council taxpayers. This could be used to raise capital and revenue funding and would enables hypothecation of revenues for the INR.

- **Section 106** - Legally binding commitment made by landowners/developers under section 106 of the Town & Country Planning Act in conjunction with the granting of planning permission. This requires developers to secure the improvement of, or contribute towards, transport infrastructure such as the INR, to meet the needs of new development. The planning authorities for future sites brought forward by the INR could require developers provide S106 contributions towards the INR project costs.
- **Community Infrastructure Levy (CIL)** - CIL is a planning charge, introduced as a tool for local authorities to help deliver infrastructure to support the development of their area. Local Planning Authorities can decide how to use the Levy in their area, which is normally payable when development commences and is a one-off charge calculated according to a formula normally based on floorspace, with some exceptions. The INR is not included on any authority's Regulation 123 list as they were produced before work started on the project , however, this does not preclude CIL being used in future.
- **"Roof Tax**" - A tax could be applied to developers/landowners in Suffolk when properties are built. This could be applied to specific sites identified in Local Plans t.
- **Council tax** – The potential to raise funding through council tax for countywide major infrastructure projects, that could include the INR. The benefits would derive from an increase in the council tax base.
- **Capital receipts** – Opportunity for all partners to utilise county/district/borough-wide capital receipts,
- **Private Borrowing** - The Local Government Act 2003 allows a local authority to borrow for any purpose relevant to its functions or for "the prudent management of its financial affairs". Local authorities may borrow money from several different sources. These include borrowing on the markets; using the Public Works Loan Board; or through municipal bonds. This form of funding would have to be set in the context of local authorities overall capital budget and any existing borrowing commitments, in order not to exceed declared borrowing limits.
- **Land Value Capture** – Tax Increment Financing (TIF) permits local authorities to borrow money for infrastructure projects against the anticipated increase in tax receipts resulting from infrastructure. This enables the capture of some of the increase in land value produced because of rising land values resulting from infrastructure development. It involves the designation of a zone around the transport infrastructure, with an enhanced rate of value (tax) applied to properties within the zone, relative to outside. It allows the capture of all properties within the project area of benefit, either business, residential or both. This could be used as a direct contribution to the project costs, or a revenue stream against which borrowing can be secured.

3.4.5. It is likely that any additional funding would have to be sourced from a combination of these and not a singular source. As the project develops these potential funding routes would be explored further and the most suitable options chosen.

3.5 WHOLE LIFE COSTS

3.5.1. The INR would be a major route which would give rise to additional revenue liabilities for capital renewals and maintenance, when compared to a future scenario in which the INR does not exist. All maintenance obligations would fall under the purview of SCC, as the Highway Authority, and, as such, would be fulfilled as part of the maintenance regime operated by the council.

3.5.2. For this SOBC, an average annual life-cycle of cost per annum has been calculated based on 0.4% of construction costs, an industry standard assumption. Therefore, the average annual LLC[38] per annum will be circa £710,000 based on 2Q2019 estimated costs.

3.6 SUMMARY OF THE FINANCIAL CASE

3.6.1. The estimated costs of the project for the three options, at out-turn prices and including 10% risk allowance are as follows:

- Outer route £342,210,000
- Middle route £376,764,000
- Inner route £385,055,000

3.6.2. For this project 85% of the expected outturn costs would be sought from the DfT's Large Local Majors Fund. The rest of the balance, 15%, would be funded through local contributions. The local contribution could also rise if SCC additional funding could be obtained from other sources. SCC and the supporting district and borough councils would be willing to explore alternative funding methods with the Department to increase the contributions of funding locally, privately and via borrowing.

[38] operation and maintenance costs- upkeep of infrastructure

4 THE COMMERCIAL CASE

4.1 INTRODUCTION

4.1.1. This chapter outlines the commercial viability of the project, and the procurement strategy that would be used to engage the market. It provides the intended approach to risk allocation and transfer, contract and implementation timescales, as well as how the capability and technical expertise of the team delivering the project would be secured.

4.1.2. The main objective is to ensure the project is delivered within budget and to maximise the objectives of the project.

4.1.3. The following are the key objectives against which the method of procurement can be defined:

- Affordability within the available budget including all risks
- Optimised whole-life cost
- Meeting funding timescales for delivery
- Optimised apportionment of risk
- Meeting stakeholders' requirements
- Incentivising innovation and added value through the procurement and during construction.

4.1.4. The success criteria for the project would be measured over time through the future economic prosperity of Ipswich and Suffolk. Outturn costs and delivery within the required timeframes would also be measurable outputs. Further details on the project objectives can be found in the Strategic Case.

4.2 PROCUREMENT STRATEGY

AVAILABLE PROCUREMENT PROCEDURES

4.2.1. The Official Journal of the European Union (OJEU) is the publication in which all public-sector tenders valued above £4,551,413 (for infrastructure projects) must be advertised.

4.2.2. There are several procurement procedures available to schemes to which the OJEU values apply. These each have particular benefits and challenges, as follows.

OPEN PROCEDURE

4.2.3. This procedure allows an unlimited number of interested parties to tender against defined parameters. There are no restrictions (e.g. pre-qualification) on the parties who are permitted to tender, meaning that some parties may not be suitable to carry out the work. This procedure is straightforward and transparent but can attract a large number of potential bidders (which will require a greater degree of assessment and resource requirements). This route is not usually recommended for construction projects due to the high number of tenders that could be expected and the particular skills and experience that may be required of potential bidders.

RESTRICTED PROCEDURE

4.2.4. This is a two-stage procedure. The first stage allows the contracting authority to set the minimum criteria relating to technical, economic and financial capabilities that the potential bidders have to satisfy. Following evaluation of the responses to the first stage a minimum of five bidders (unless

fewer qualify) are invited to tender in the second stage. This process is typically used to appoint consultants or contractors on traditionally procured projects.

ACCELERATED RESTRICTED PROCEDURE

4.2.5. This procedure is only intended for use where, for reasons of urgency, the contracting authority must procure the contract in a reduced time frame. Any contracting authority wishing to use this procedure must be able to demonstrate the reasons of urgency that necessitate its use. It is identical to the Restricted Procedure except that the timescales for each stage are reduced.

COMPETITIVE DIALOGUE PROCEDURE

4.2.6. This procedure is appropriate for complex contracts where contracting authorities:

- Are not objectively able to define the technical means capable of satisfying their needs or objectives, and / or
- Are not objectively able to specify the legal and/or financial make-up of a project.

4.2.7. This is a multi-stage procedure. The first stage is a pre-qualification to select the potential bidders to participate in the dialogue. In the second stage, the contracting authority enters into a dialogue with the potential bidders to identify and define the means best suited to satisfying their needs. Any aspect of the contract may be discussed, including technical requirements for the works to be delivered and the commercial / contractual arrangements to be used. The dialogue may be conducted in successive phases with the remaining bidders being invited to tender. By the end of the dialogue phase the contracting authority's requirements would have been determined such that the project can be tendered. In the final stage, the remaining bidders from the dialogue phase are invited to tender for the project.

COMPETITIVE PROCEDURE WITH NEGOTIATION

4.2.8. This procedure is intended to be used where minimum requirements are able to be specified but negotiations with bidders may be needed to improve the initial tenders. The grounds for using this procedure are as follows:

- Where needs cannot be met without adaptation of readily available solutions
- Where the contract includes design or innovative solutions
- Where the requirement is complex in nature, in its legal and financial make-up or because of its risks
- Where the technical specifications cannot be established with sufficient precision
- In the case of unacceptable/irregular tenders

4.2.9. Within this procedure, bidders initially submit tenders based on the information issued by the contracting authority. The contracting authority is then able to review the tenders it has received and negotiate with the bidders, following which the tenders would be resubmitted. This procedure may therefore be useful where the requirements are well developed initially and full tender documents can be produced, but it is felt that there may be advantage in retaining the ability to hold negotiations if there are certain aspects which bidders raise.

PREFERRED PROCUREMENT PROCEDURE

4.2.10. This project would likely be procured using the Restricted Procedure as it would be possible to publish a well-defined tender package for bidders to price against. Variant tenders would be accepted in order to allow bidders to propose alternative solutions. The Restricted Procedure also

has defined timescales for each stage which would allow the Council to ensure that the tenders can be received by the dates required by the overall project programme.

4.2.11. The Council currently uses the Restricted Procedure for procuring highway engineering projects and is well-practised in its use. The Council would also consider the use of the Competitive Procedure with Negotiation as it may offer benefits, such as being able to discuss initial tenders with the bidders if they identify elements of the project that could be improved if carried out differently from the tender proposals.

4.2.12. The information required from the bidders during the PQQ and ITT stages would ensure that the objectives set out within the Strategic and Economic Cases are achieved, particularly the timely completion of the works in order to realise the economic benefits to the public arising from the provision of the project.

4.3 PROCUREMENT METHOD

4.3.1. SCC, with the services of consultants WSP, has developed the project to date. If the project continues it would be developed further up until submission of the OBC.

PROCUREMENT OPTIONS CONSIDERED

Traditional Procurement

4.3.2. The traditional procurement method involves the employer employing their own design team or consultants to prepare a design and to issue this to a number of contractors to tender for the works. The employer remains responsible for the delivery of the design to the contractor through his team or consultants.

Design and Build

4.3.3. The design would be developed to a stage suitable to provide pricing information and the Design & Build Contractor would be appointed to undertake technical design, produce construction information and deliver the project. For this option there is trade-off between the development of the design informing pricing and how early the D&B contractor is appointed to be involved with the design process to maximise the benefits of this route.

Two Stage Tendering with Early Contractor Involvement (ECI)

4.3.4. The aim of this option is to appoint a contractor and any subcontractors to deliver Stage 1, to develop the project design, costing, construction programme, risk identification and management. Stage 2 is the construction and delivery of the project. Contractors would be likely to have met predefined criteria from Stage 1 to continue to Stage 2.

4.3.5. The selection of the Contractor would be based on its own capability and its supply chain, a tendered fee value (which includes for profits and overheads). The first stage is typically managed on a cost plus basis and prior to Stage 1 finishing, the Contractor and employer would agree a target cost for Stage 2.

Chosen Method

4.3.6. Considering that the detailed design would have been completed in order for the construction contract to be tendered, allowing determination of the costs required for inclusion in the OBC, this project is anticipated to be procured using a Two Stage with ECI approach. The UK Government

Construction 2025 strategy39 document recommends this approach as efficiencies can be achieved. Other benefits of the approach include improved quality of design, project planning, risk management and problem resolution.

4.4 FORM OF CONTRACT

TWO SEPARATE CONTRACTS FOR STAGE 1 / STAGE 2: NEC4 PSC / ECC

4.4.1. An NEC4 Professional Services Contract (PSC) was used for Stage 1 of the recently completed two-stage procurement of the Lake Lothing Third Crossing. An Engineering and Construction Contract (ECC) would be used for the second stage. Such a combination of contracts (a separate contract for each stage) creates advantages for the project's commercial development including:

- straightforward delivery due to SCC's familiarity with this arrangement
- flexibility for the client in the method of payment; and
- this arrangement may give the client more power to negotiate the price for the works contract.

4.4.2. This contract strategy however, is not without its disadvantages. If additional works are required during the first contract phase, the original PSC agreement may need to be amended to change the scope accordingly. Additionally, a two-stage procurement requires two sets of contracts resulting in additional resource in preparing these agreements and all associated documents.

A SINGLE CONTRACT FOR STAGE 1 / STAGE 2: NEC4 ECC WITH X22

4.4.3. This contractual arrangement includes an NEC4 ECC contract with an X22 ECI. As opposed to a two-tier delivery, this approach provides an easy transition between the two contract stages, as the liability for project delivery remains with the Stage 1 contractor. It can be argued that this leads to a higher level of commitment from the contractor, as well as potentially improved long-term collaboration between the parties. Another important benefit of this contract type is that project budgets are set at the outset, which encourages efficient delivery. With a single agreement, additional works during Stage 1 are also easier to accommodate than with a two-tier, two-contract arrangement.

CHOSEN FORM OF CONTRACT

4.4.4. A procurement strategy has not been selected yet; this is commensurate to the current stage of the business case development. As project development progresses, SCC would determine the most suitable commercial strategy to ensure the project is delivered on time and in budget and to mitigate risks associated with project delivery.

4.5 SOURCING OPTIONS

4.5.1. As described in Section 4.1.4, the project would be sourced through advertisement in the Official Journal of the European Union (OJEU) due to its value. This would allow companies from across the EU to bid for the work.

[39] HM Government (2013): Industrial Strategy: government and industry in partnership

4.6 PAYMENT MECHANISMS

4.6.1. Payment would be made to the contractor by monthly valuation with a BACS payment within 30 days of issue of the initial valuation.

PRICING FRAMEWORK AND CHARGING MECHANISMS

4.6.2. The Council would use the NEC4 Engineering and Construction Contract (ECC), which is becoming the standard form of contract used for construction works in the UK. The NEC4 ECC consists of a set of Core Clauses to which is added one of the following Options A to F:

- Option A: Priced with activity schedule
- Option B: Priced with bill of quantities
- Option C: Target cost with activity schedule
- Option D: Target cost with bill of quantities
- Option E: Cost reimbursable
- Option F: Management contract

4.6.3. A charging mechanism has not been selected to date; this would be determined at a later stage as certain contractual agreement types only allow specific pricing frameworks to be used.

4.7 RISK ALLOCATION AND TRANSFER

4.7.1. The construction contract would include clauses to facilitate the transfer of appropriate risks from the Council to the contractor, such as risks associated with construction costs increasing above those predicted in the financial case.

4.7.2. The project costs currently include a risk allowance. The risk of costs being higher than currently estimated remains until the tendering process is complete, at which point this risk can be transferred to the contractor.

4.7.3. The indicative allocation of risks resulting from the contractual and procurement arrangements is summarised in Table 4-1. At this SOBC stage, an indication has been provided to indicate where each risk type rests: with the public sector (the Council / Government Treasury) or the private sector (the consultants and contractors), or whether these risks are shared between the two. At OBC stage, once the procurement and contractual arrangements have been finalised, the risks would be quantified.

Table 4-1 - Indicative Risk Allocation Table

Risk Category	Public	Private	Shared
Design risk		✓	
Construction risk		✓	
Transition and implementation risk			✓
Operating risk	✓		
Termination risks			✓
Financing risks	✓		
Legislative risks	✓		

4.8 CONTRACT LENGTH

4.8.1. The tender invitations would assume a construction period of approximately 36 to 40 months.

4.8.2. The contract programme is considered in further detail within the Management Case. The key contract dates are set out in Table 4-2.

Table 4-2 - Key Indicative Contract Dates

Programme Activity	Date
Pre-qualification period	TBC
Award of Contract	Q1 2024
Construction period (including mobilisation and commissioning/handover)	Q4 2024
Project open to public	Q4 2027

4.9 HUMAN RESOURCE ISSUES

4.9.1. It is not anticipated that there would be any personnel/people management/trade union implications, including TUPE regulations associated with the project.

4.10 CONTRACT MANAGEMENT

4.10.1. The contract chosen would provide the Council with a suitable contract at construction to minimise risk, but with increased ability to bring forward the detailed design process in the programme. The Council would also provide officers to perform the role of contract manager and create a site supervision team.

4.11 SUMMARY OF COMMERCIAL CASE

4.11.1. Currently the preferred procurement option is Restricted Procedure as it would be possible to publish a well-defined tender package for bidders to price against. It also has defined timescales

for each stage which would allow SCC to ensure that tenders can be received by the dates as set out in the project programme.

4.11.2. The form of contract and preferred payment mechanisms has not been selected yet; this is proportionate to the SOBC. As the project development progresses, SCC would determine the most suitable commercial strategy to deliver the INR.

5 THE MANAGEMENT CASE

5.1 INTRODUCTION

5.1.1. This chapter forms the Management Case for the Ipswich Northern Route project. It describes how the project would be delivered through project management best practice, confirms that the timescales are realistic, and demonstrates that an appropriate governance structure is in place to oversee the project.

5.1.2. Specifically, the section provides and sets out:

- Evidence of similar projects
- Programme and project dependencies
- The governance structure (management framework)
- The project scheduling (i.e. the development of the project programme, and the process for monitoring progress against the milestones within the programme)
- The stakeholder management process (how stakeholders have been identified, and their influence on the project management
- The risk management process.

5.2 EVIDENCE OF SIMILAR PROJECTS

5.2.1. The delivery of the project would build upon SCC's experience gained from the delivery of a number of major highway and transport schemes.

5.2.2. A selection of key projects have been listed in Table 5-1, summarising the scope of works, capital costs, timescales for implementation and the procurement strategy employed. Opportunities will be taken, wherever possible, to improve delivery processes, through acting upon lessons learnt.

Table 5-1 - Evidence of similar projects

Location	Scheme	Cost (£m)	ProjectType	Year Built	Funding Sources	Form of Contract
Bury St Edmunds	Eastern Relief Road	19.8	Highways	2017	DfT, New Anglia LEP, SEBC, SCC	Full Tender, NEC3
Bury St Edmunds	Suffolk Highways Services Contract – Pedestrian and cycle bridge over the A14	1.5	Highways	2014	DfT, SCC	Support Services Contract, NEC
Blythburgh	Suffolk Highways Services Contract – Flood alleviation on the A12	0.8	Highways	2014	DfT, SCC	Support Services Contract, NEC
Lowestoft	Northern Spine Road	6.6	Highways	2015	DfT, New Anglia LEP, SCC	Eastern Highways Alliance, NEC3
Lowestoft	Southern Relief Road	31	Highways	2007	DfT, SCC	Full Tender, NEC
Ipswich	Travel Ipswich	21.6	Highways	2015	DfT, SCC	Full Tender/SHC, NEC3
Beccles	Southern Relief Road	11.3	Highways	2018	DfT, New Anglia LEP, SCC	Eastern Highways Alliance, NEC3
Eye	A140 Eye Airfield Link Road and Junction Improvements	5.4	Highways	2020	DfT, New Anglia LEP, SCC	Eastern Highways Alliance, NEC3
Lowestoft	Lake Lothing Third Crossing	91.7	Highways	2022	DfT, New Anglia LEP, SCC	Full Tender, NEC3

CONSULTANT EXPERIENCE

5.2.3. SCC is being advised by WSP, the Council's consultant, and a major provider of highway consultancy services to local authorities.

5.2.4. WSP has experience and expertise in business case proposals, optioneering for cost benefit analysis, planning applications and detailed design for major infrastructure projects for central and local government clients. Recent projects include the M4 Smart Motorway for Highways England, the A5 Western Transport Corridor for Transport Northern Ireland, the Lowestoft Lake Lothing Third Crossing, for SCC, and the Great Yarmouth 3rd River Crossing, for Norfolk County Council. WSP is also one of the UK's leading providers of support services to the statutory procedures required to plan, deliver and maintain infrastructure projects, providing land referencing, stakeholder engagement and consultation service, and order management.

CONTRACTOR EXPERIENCE

5.2.5. It would be essential to appoint a contractor with significant experience in delivering similar large-scale bridge and highway projects. The selection and procurement of the contractor is summarised in the Commercial Case, and the management of the contractor is considered in the project governance section below.

5.3 PROGRAMME AND PROJECT DEPENDENCIES

5.3.1. Ipswich Northern Route is a 'stand-alone' project, which can be delivered as designed and costed independently, with no other future projects or commissions dependent upon it.

5.3.2. The project is, however, dependent upon a number of other activities (outlined within the Project Programme), stakeholders and is subject to risks (as set out in the Risk Register).

5.4 PROJECT GOVERNANCE, ORGANISATIONAL STRUCTURE AND ROLES

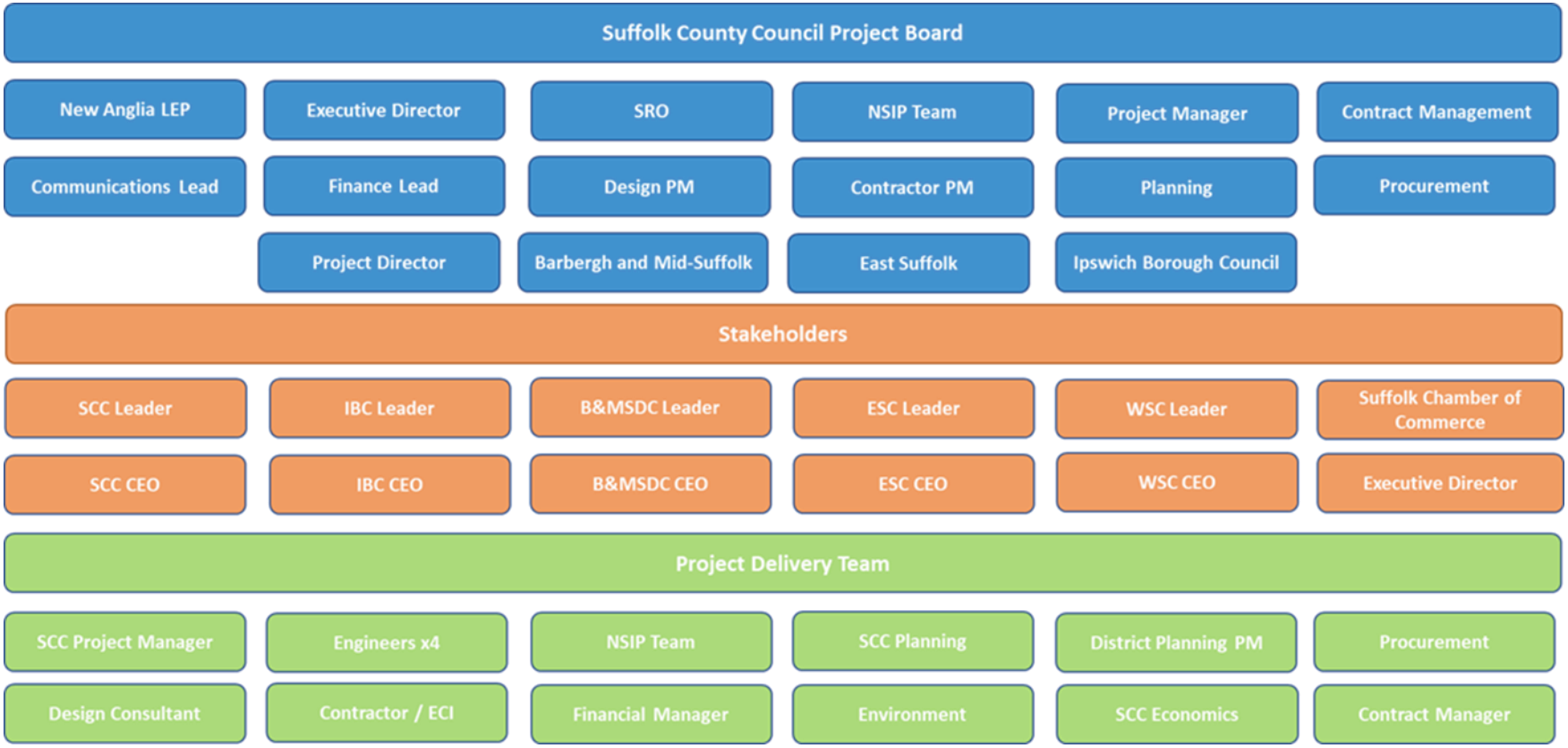
5.4.1. An appropriate governance structure is essential to the successful delivery of the project. SCC would therefore establish a Project Board, a Project Delivery Team and a Stakeholder Group to work together to deliver the project. This organisational and governance structure is illustrated in Figure 5-1.

PROJECT BOARD

5.4.2. The Project Board's primary function is decision-making and review, and it would provide strategic governance, as opposed to the technical input of the Delivery Team. The Board would be responsible for:

- Managing the project and ensuring its successful delivery;
- Keeping track of the contractor's adherence to the project programme and completion of milestones, ensuring the project is delivered within the constraints of time and budget;
- Providing guidance and support to the Project Manager;
- Authorising necessary funds and spending (to the Contractor);
- Stakeholder management; and
- Managing risks (a shared responsibility with the contractor).

Figure 5-1 - High Level Governance structure



5.4.3. The Senior Responsible Officer (SRO) would be responsible for chairing meetings and providing guidance and support to the Project Manager as required. The SRO would ensure that the project is progressing in line with the project programme and that key deliverables and milestones agreed by the Project Board are achieved. Other members of the Project Board include the SCC Project Director and Project Manager, the contractor's Project Manager, local authority partners representatives and representatives of the LEP. Board Membership is set out in Table 5-2.

Table 5-2 – The Project Board

Individual	Role
TBC	Senior Responsible Officer
TBC	Project Director
TBC	Project Manager
TBC	Executive Director
TBC	New Anglia LEP Representative
TBC	Communications Officer
TBC	Finance Lead
TBC	NSIP Team Representative
TBC	Head of Planning
TBC	Head of Procurement
TBC	Contractor Project Manager
TBC	Design Project Manager
TBC	Kier Group
TBC	Contract Management
TBC	Representatives from East Suffolk, Babergh and Mid-Suffolk and Ipswich Borough Councils.

PROJECT DELIVERY

5.4.4. The Project Delivery Team responsible for the delivery of this project is set out in Table 5-3 and contains Officers from SCC. Some members of this group would overlap with the Project Board to provide efficient communication.

Table 5-3 - Project Delivery Team

Individual	Role
TBC	SCC Project Manager
TBC	Engineers from Suffolk County Council
TBC	SCC Planning
TBC	SCC Economic Development lead
TBC	SCC Procurement lead
TBC	NSIP Team Representative
TBC	SCC Environment lead
TBC	Financial Manager
TBC	District Planning PM
TBC	Contract Manager
TBC	Contractor/ ECI
TBC	Design Consultant

5.4.5. Additional discipline specialist expertise would be requested to attend the Delivery Team as and when required.

5.5 THE PROJECT PLAN

5.5.1. The Association of Project Managers (APM) defines the Project Plan as the “plan of plans”. It is a series of plans setting out the objectives, methods, deliverables, programme and resources of a project. The purpose of the Project Plan is to document the outcomes of the entire planning process and to provide the reference document for managing the project. It would include the following plans:

- The organisational structure / resource plan
- The project programme
- Assurance and approvals plans
- A communication plan (strategy)
- A risk management plan (strategy)

5.6 PROJECT PROGRAMME

5.6.1. A detailed project programme would be established if the project continues to the OBC stage, which outlines all the key project tasks and their duration, the interdependencies between each of the tasks, with key milestones and gateways also recorded. Certain elements of the programme

would have built in tolerance/contingency to account for risks identified within the risk register (which could have an impact upon the programme).

5.6.2. The programme would be a live document, with progress on planned task completion being monitored against actual progress on a weekly basis by the project manager. The Project Manager would report progress against plan to the Project Board.

5.6.3. A greater level of detail would be introduced into the programme during the Outline Business Case production, as detailed design of the project progresses and as risk quantification and impacts change.

5.6.4. Table 5-4 outlines key project milestones and dates.

Table 5-4 – SOBC Indicative Key Programme Dates / Milestones

Key Milestones	Dates
Submission of evidence base to Transport East	Q2 2019
Confirmation project made Transport East prioritised list	Q2 2019
Submission of Strategic Outline Business Case (SOBC) to DfT	Q3 2019
Development of Outline Business Case (OBC)	Q1 2020
Submission of OBC	Q2 2021
Submission of Direction 35 to Secretary of State – assumed DCO planning route	Q3 2021
DfT OBC approval / Programme Entry	Q4 2021
Preparation of DCO documents	Q4 2021
Submission of DCO	Q2 2022
Acceptance stage	Q2 2022
Pre-Examination stage	Q3 2022
Examination stage	Q4 2022
ExA consideration	Q4 2022
Decision	Q1 2023
Judicial Review period (Legal Challenge)	Q1 2023
Legal Challenge Period Concludes	Q1 2023
Discharge of DCO conditions	Q3 2023
Procurement tasks and activities	Q3 2023
Prepare to Procure	Q3 2023
Produce Tender Specification	Q3 2023
Issue Contract Notice	Q4 2023
30 Day PQQ Response Period	Q4 2023
Issue Tender to Shortlisted Suppliers	Q4 2024
59 Day Tender Period	Q1 2024
Tender Responses received and evaluated	Q1 2024
Award Stage	Q2 2024
Mobilisation / Contract Operation and Management	Q2 2024
Full Business Case submitted to DfT.	Q2 2024
Start of Construction	Q4 2024
Project open to public.	Q4 2027

5.7 ASSURANCE AND APPROVALS PLAN

5.7.1. Responsibility for the assurance of the SOBC rests initially with the DfT, who would assess the technical content of the business case in order to confirm that the project represents value for money to the taxpayer and should proceed to OBC stage. The DfT would then advise Transport Ministers whether or not to approve the Business Case and project.

5.7.2. The DfT typically follow a three-staged gateway process of funding approval:

- **Programme Entry** SCC has produced this SOBC for the Government to review which would act as the programme entry agreement.
- **Conditional Approval** would occur following the DfT's acceptance / approval of the SOBC to develop an OBC (including its value for money). It is the gateway to proceed to the development of the OBC but does not guarantee full funding or commitment to the project. It does provide the mandate for SCC to begin the process of obtaining the requisite statutory powers to construct the project (including the NSIP / DCO / planning consents / compulsory purchase, etc). At this stage of the project, it is considered that the project would follow the Nationally Significant Infrastructure Project route and follow the Development Consent Order planning process.
- **Full Approval** occurs after the selection of a preferred contractor following the procurement process, which would achieve a fixed project cost and increased project cost certainty; and once planning consent had been received. The Full Business Case (FBC) would be submitted at this point and if approved, SCC would be able to start drawing down funding and begin construction.

5.7.3. The promoter would liaise with the DfT to develop and agree the Assurance and Approvals plan during the development of the OBC and FBC. This would comprise of a series of project gateways at which point the development of the project is measured against set criteria. Gateways are likely to be:

- At end of Preliminary Design;
- Post Public Consultation;
- Pre Planning;
- At Submission of DCO;
- Pre Tender, Post Tender;
- Planning Consent;
- Award of Contract.
- Completion of highway and infrastructure contract
- 12 months after road opening.

5.8 COMMUNICATIONS AND STAKEHOLDER MANAGEMENT PLAN

5.8.1. As part of the preparation for the informal public consultation in summer 2019, a mandate for consultation was developed to outline how Suffolk County Council, Babergh and Mid Suffolk District Councils, East Suffolk Council, West Suffolk Council and Ipswich Borough Council would work together to undertake the consultation to ascertain the views on the need for an Ipswich Northern Route and the indicative route options.

5.8.2. The partners committed to the mandate below:

"We, Suffolk County Council, Babergh & Mid Suffolk District Councils, East Suffolk Council West Suffolk Council and Ipswich Borough Council want to understand the views of residents, community groups, businesses, land owners, local councillors and environmental organisations, concerning the

need for a new route north of Ipswich and the level of potential growth that this would enable. This will allow a Strategic Outline Business Case to be completed and shared with government with a view to seek funding to progress this project to an Outline Business Case stage, when preferred route option(s) will be identified."

5.8.3. The consultation and engagement activities were delivered in line with this mandate. The Consultation Report (2019), which supports the SOBC, outlines how the consultation strategy was met and a summary of feedback received.

5.8.4. A full Communications and Stakeholder plan would be developed for the next stage of the project.

STAKEHOLDER IDENTIFICATION

5.8.5. The following key stakeholders are affected by the project or have the potential to influence the outcome of the project, the project programme or project costs. The list shown below is not exhaustive but it is expected that the following key stakeholders would be consulted to help guide option development, if the study progressesDepartment for Transport

- Suffolk County Council
- Ipswich Borough Council
- Babergh and Mid Suffolk District Councils
- East Suffolk Council
- West Suffolk Council
- Highways England
- Network Rail
- Freight Transport Association
- New Anglia Local Enterprise Partnership
- Greater Anglia LEP
- Local MPs
- Parish & Town Councils
- The Port of Felixstowe
- Landowners, residents and businesses that may potentially be impacted by the possible route corridors
- Wider business community
- Residents across Suffolk
- Stakeholders including elected councillors, relevant environment, transport, economic and community stakeholders.
- A broader range of community members including workers, road users, pedestrians and cyclists.
- Minority and seldom heard groups
- Other developers such as EDF Energy's Sizewell C
- Affected utilities companies

BRANDING

5.8.6. As a jointly promoted project by the county and district councils, it was decided to develop a brand, linked but separate from the partner local authorities. This branding was used on consultation materials and for the independently hosted website www.ipswichnortherroute.org.uk. A link to the website was provided on the county, district and borough websites.

5.8.7. The website was set-up in order to provide current and up-to-date information relating to the progress of the project, this went live in July 2019. All consultation material was hosted on the website. There is also a mechanism to sign up for email updates on the project. The website and updates will ensure that all stakeholders and local residents are kept aware of the latest developments relating to the project.

PUBLIC CONSULTATION

5.8.8. The public consultation was the first step in the process to present emerging options to the local community and allow them to provide feedback on the project. The consultation ran from Friday 5 July to Friday 13 September 2019. A range of methods were used to inform the public of the consultation as detailed in Table 2-1.

5.8.9. The level of detail in the consultation reflected the early stage of the work. The consultation materials, aimed to provide an overview of the routes and junctions, and environment and traffic assessment work.

5.8.10. The public were encouraged to submit their views using an online questionnaire located on the project website. A paper copy of the questionnaire was also available.

5.8.11. This Consultation Report (appendix I) provides details on what was consulted on, who was consulted, how the consultation was conducted and the feedback received.

5.8.12. Eleven consultation events were conducted in the first four weeks of the consultation period. The events adopted a ‘drop-in’ style and were held in community buildings across the wider Ipswich area. The events attracted a total footfall of 2,206 people.

5.8.13. The events gave members of the public an opportunity to view information and plans and speak to members of the project team.

Table 5-5 – Outline of consultation activities

Channel	Activity
Website	All consultation material and historic material was uploaded to the website. It also included a link to the online survey.
Social media	The consultation was widely promoted on the INR Twitter account and using partners Facebook pages.
Public exhibitions	2,206 people attended the 11 public events. Staff were on hand to talk to members of the public.
Additional briefings	Presentations were given to South East, South West, North West, North East and Central Area Committees which members of the public could attend. Presentations were also given to Ipswich Chamber of Commerce and Chamber of Commerce.
Deposit locations	Consultation brochures and questionnaires were left at five locations in the vicinity of the project. This was advertised on the website and via Twitter.
Unmanned exhibition	The banners shown at the public exhibitions were put up for a week at a time at six locations in the vicinity of the project. The locations and dates for this were advertised in a poster – distributed to local locations, put on the website and information emailed to all those who had registered to receive email updates.
Consultation materials	A consultation brochure, questionnaire and Q&A document was created. Materials were made available online and at consultation events.
Posters	Posters were created about the public exhibitions and unmanned exhibitions. These were sent to parish councils, local libraries and community buildings for putting up.
Press releases and media event	A series of press releases were released to maintain coverage in the location media through the consultation.
Councillor briefing (county, District and Parish)	Local councillor briefings were held on 4, 5 and 8 July.
Land owner briefing	Letters were sent to identified land owners. Three landowners specific days for appointments were held.
Easy-read format of materials	Following a request from the Suffolk Learning Disability Partnership Board, an easy- read form of the brochure and questionnaire was produced. This material was added to the website on 21 August 2019. Suffolk Learning Disability Partnership distributed this around their networks and were given an extended deadline Friday 20 September 2019 to provide comments on the project.
Third party communications channels	Stakeholders, such as parish councils, were encouraged to help promote the consultation on their communication channels.

RESULTS OF PUBLIC CONSULTATION

5.8.14. In total, 4,547 responses to the consultation were received. The majority of these (4,286 responses) were from people completing the questionnaire which was available online and in hard copy. In addition, 253 letters and emails were received by members of the public and stakeholders. The table below shows the overview of responses received.

Table 5-6 Responses to Public Consultation

Method of responses	Number
Questionnaires completed online	3,753
Questionnaires hard copied	533
Other Responses received	253
Petitions	3
Late responses	5
Total	4,547

5.8.15. Three petitions were received during the consultation, as outlined below:

- Swilland and Witnesham Grouped Parish Councils sent in a petition with 254 signatures.
- Stop! Campaign: 4,500 signatures (not yet received or verified, it has been requested that this be debated at SCC full council)
- Orwell Ahead: 719 signatures 552 signatures after verification

5.8.16. The Stop! campaign was created during the consultation by concerned residents who then campaigned against the project. They were endorsed by local MP Daniel Poulter MP for Central Suffolk and North Ipswich. As well as organising a petition, the group attended most of the consultation events, undertook media engagement and created a guide to completing the INR questionnaire, available on their website (https://stopipswichnorthernbypass.co.uk/).

5.8.17. The Stop! Campaign, has opposed the project in its entirety due to the impact on the countryside, environment and rural way of life. The group has raised concerns in its literature about the case for the project, the value for money and benefits realisation (namely the evidence that road building leads to growth). They also believe the road will allow for a new town north of Ipswich.

5.8.18. The number of signatures on these petitions have not been included in our total of responses received. However, the petitions, where received, have been included in the analysis of the consultation and the issues raised are addressed in this Consultation Report. In addition, Suffolk County Council's Democratic Services team are processing the petitions through the councils agreed approach to petitions, https://www.suffolk.gov.uk/council-and-democracy/consultations-petitions-and-elections/starting-a-petition/ .

KEY STAKEHOLDERS' RESPONSES

5.8.19. At the beginning of the consultation, the project wrote to a number of organisations inviting them to take part in the consultation. These organisations included parish councils, public services and interest groups. During the consultation period, responses were received by a range of

organisations either directly in the form or letters and emails or they answered the questionnaire and indicated they were writing on behalf of an organisation. Table 2-3 provides a breakdown of the 117 responses received from organisations and businesses.

Table 5-7 Stakeholder consultation responses

	Letters or emails	Questionnaire	Total
Local authorities	1	0	1
Parish and Town Council	25	12	37
MPs and politicians	3	0	3
Other organisations	22	54	76
			117

5.8.20. These responses included ones from:

- Ipswich Borough Council
- Members of Parliament for the Ipswich Constituency (Sandy Martin MP), Central Suffolk and North Ipswich (Dr Daniel Poulter MP) and Suffolk Coastal (Dr Thérèse Coffey MP); Ian Fisher IBC leader of the conservative group.
- Statutory parties (Environment Agency, Historic England and Natural England)
- Transport bodies, businesses and organisations (British International Freight Association (eastern region), Freight Transport Association, Ipswich Buses,
- Cycling and walking interest groups (CTC Suffolk (Cycling UK), Sustrans)
- Ipswich and East Suffolk Clinical Commissioning Group CG
- New Anglia LEP
- Suffolk Chamber of Commerce
- Environmental groups (including Suffolk Coastal Friends of the Earth, Suffolk Preservation Society, Suffolk Wildlife Trust, Woodland Trust)

RESULTS OF PUBLIC CONSULTATION: QUESTIONNAIRES

5.8.21. The Consultation Report (Appendix I) provides information on consultation feedback and a full analysis of the results.

5.8.22. Respondents were given the option to provide postcode information, which has been shown geographically in Figure 5-2 and Figure 5-3.

5.8.23. Figure 5-2 shows that responses were spread in the greater Ipswich area, specifically those in proximity to the route options or near potential connecting roads, as well as the town itself. This is as expected as responses have come from those largely impacted (positively and negatively) by the project.

5.8.24. Figure 5-3 shows that whilst the majority of respondents were in the Ipswich area, there were also a number of responses from those throughout Suffolk, with a particular concentration in Felixstowe.

Figure 5-2 - Geographic distribution of respondents with route options

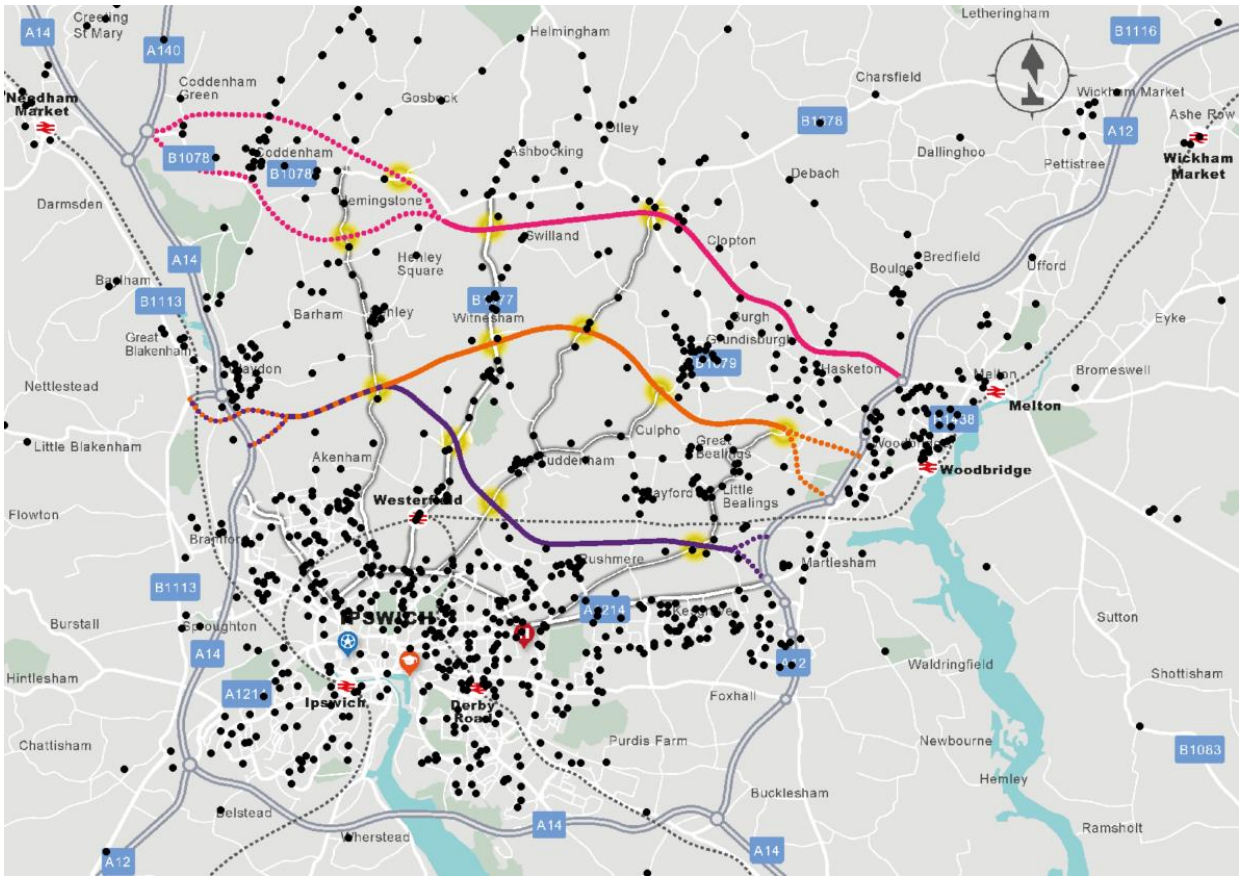
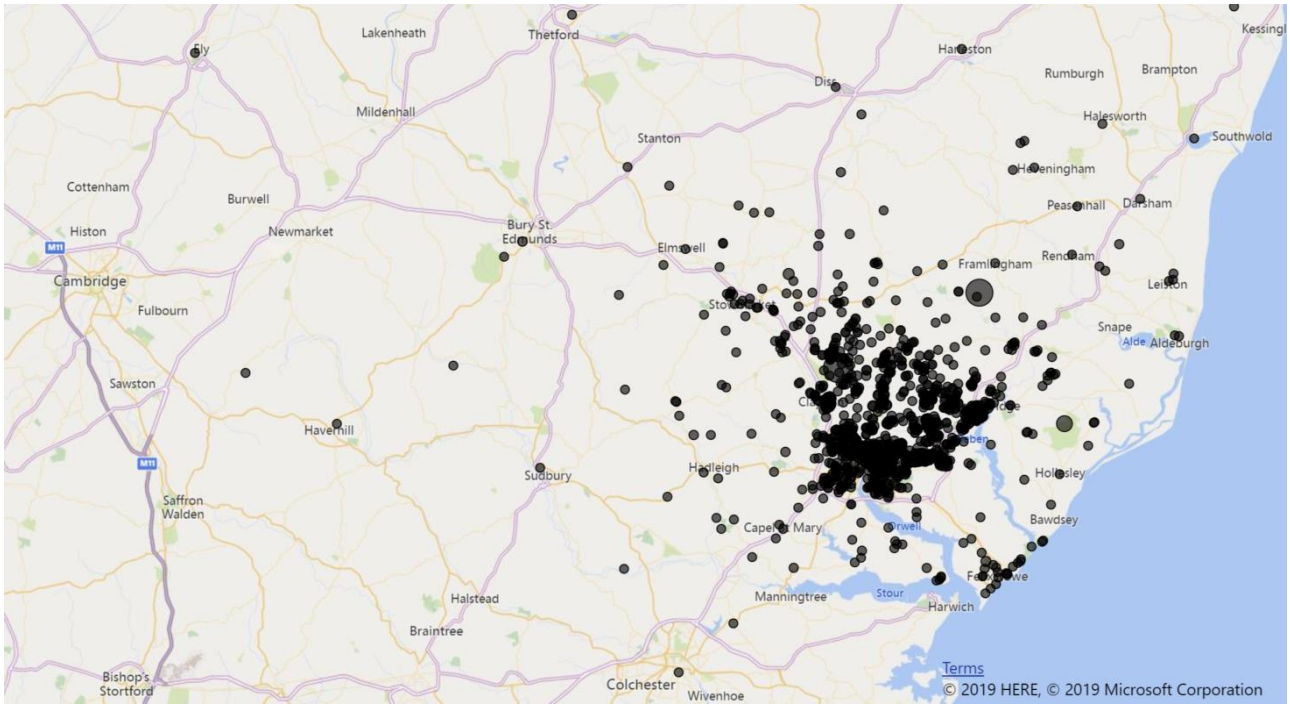


Figure 5-3 - Geographic distribution of respondents in Suffolk

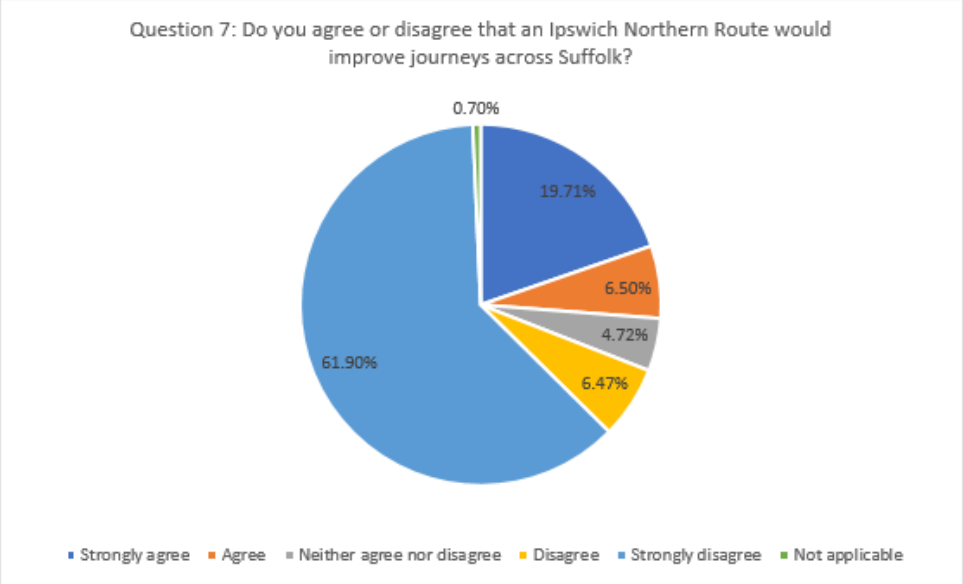


5.8.25. As part of the questionnaire, people were asked to what extent the respondent agrees or disagrees that an Ipswich Northern Route would improve journeys across Suffolk.

5.8.26. Respondents were asked to respond using a fixed five-point scale (from strongly agree to strongly disagree) plus 'not applicable'. A total of 4,171 respondents chose to answer this question.

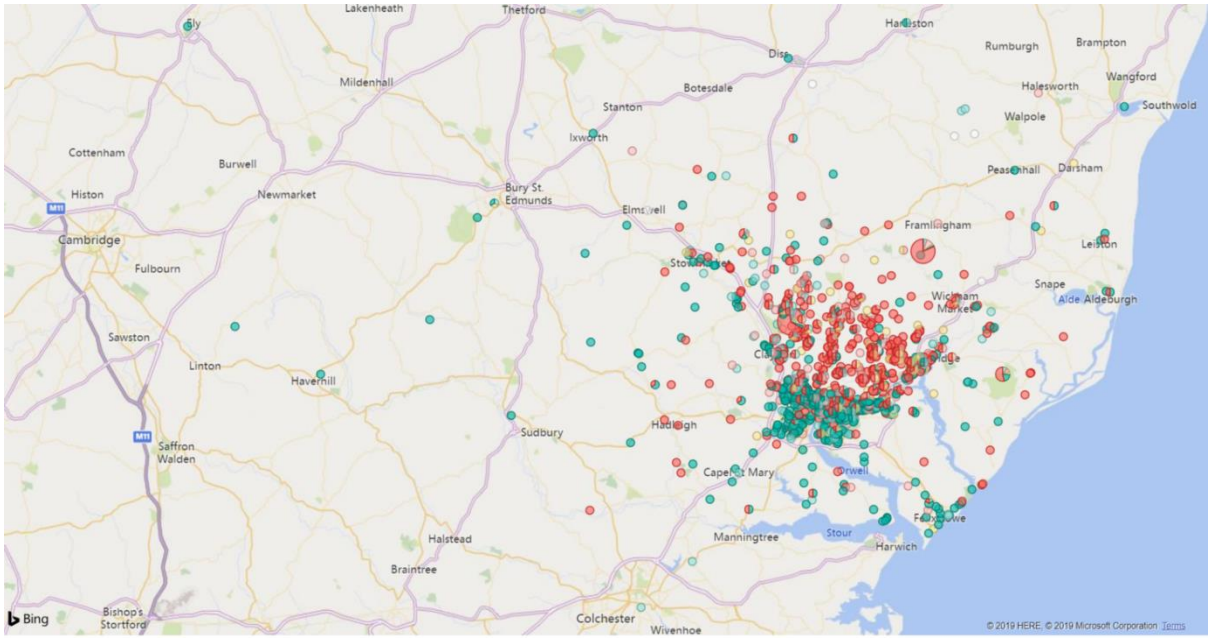
5.8.27. As shown in Figure 5-4, 61.9% strongly disagreed that an Ipswich Northern Route would improve journeys across Suffolk, with a further 6.5% selecting disagree. In comparison over a quarter (26.2%) agreed or strongly agreed the project would improve journeys across Suffolk.

Figure 5-4 Views on how the project would improve journeys across Suffolk



5.8.28. Figure 5-5 shows respondents' views to question 7 geographically, based on the post code information they provided. It should be noted not all people provided postcode information, so this graphic does not represent all the responses to question 7. This shows that in general those located near the proposed new route are against the potential of it improving journeys, whilst those in Ipswich and places further afield on the network, like Felixstowe, believe the project would improve journeys across Suffolk.

Figure 5-5 - How respondents view the INR will improve journeys by area



5.9 PROGRAMME AND PROJECT REPORTING

5.9.1. Ipswich Northern Route will be delivered in line with the Council's existing effective programme and project management procedures. The Project Manager will be responsible for co-ordinating the delivery of the project elements, identifying key interdependencies and ensuring that the overall project is delivered to programme, quality and budget. The Project Manager will report directly to the SRO. The Project Board will oversee the development and delivery of the project.

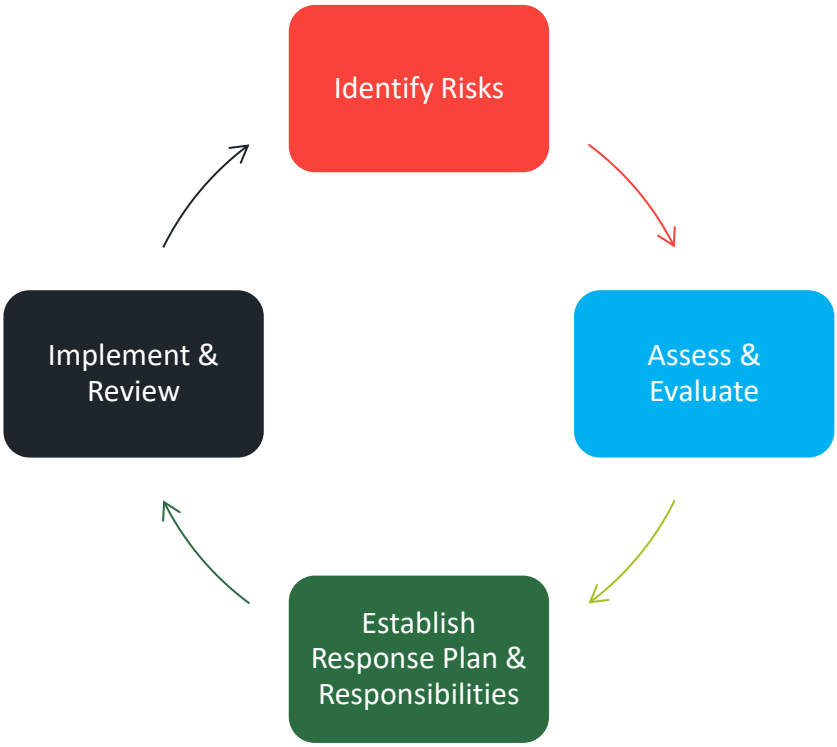
5.9.2. The Delivery Team leads will report to the Project Manager monthly in advance of the Project Board meeting and hold "weekly calls" to discuss progress and issues.

5.10 RISK MANAGEMENT STRATEGY

5.10.1. Risk management is the methodical approach to identifying, quantifying and managing risks that occur during the lifecycle of a project. The key to effectively mitigating risks is to develop a series of well-defined steps to support better decision-making through an in-depth understanding of the potential risks inherent in a project and their likely impact. Annex 4 of the HM Treasury Green Book emphasises that "effective risk management helps the achievement of wider aims, such as: effective change management; the efficient use of resources; better project management; minimising waste and fraud; and supporting innovation".

5.10.2. The Green Book recommends a four-stage process which is broadly cyclical (plan-do-review) requiring on-going review and update of risks to ensure that effective controls are implemented during project development and delivery. The risk management strategy is illustrated in Figure 5-6.

Figure 5-6 - Risk Management Strategy



Risk management Process

5.10.3. Risk management is seen as a key process underpinning good project governance and achievement of project objectives in a cost-effective manner.

5.10.4. The risk assessment has been undertaken using the following four-stage process:

- Risk identification;
- Risk quantification;
  - Assessing the impacts of risk;
  - Assessing the likelihood of risk; and
- Managing risk.

5.10.5. This process is described below.

Risk identification

5.10.6. For this project, risks have been identified during multi-disciplinary discussions, including inputs from technical experts in highway and structural engineering, geotechnical, planning, transport planning, quantity surveyors and environmental disciplines. Accordingly, a project risk register has been produced, which is contained within Appendix J.

5.10.7. The project risks can largely be grouped into the following categories:

- Risks to the project programme;
- Political risks;
- Risks to project cost;
- Risks to project funding;
- Risks to the operation of the transport network;

- Design and information risks;
- Health and safety risks;
- Reputational risks; and
- The risk to impact on existing highway network.

QUANTIFICATION OF RISKS

5.10.8. Each risk has been evaluated in terms of the cost outcomes of the risk. Whilst DfT recommends the use of empirical evidence to estimate a range of cost outcomes, wherever possible, it is noted that 'common sense approximations' should be used when such empirical data is not available, rather than aiming for unrealistic levels of accuracy.

5.10.9. Having estimated the likely impact, the likelihood (probability) of the risk occurring also needs to be estimated. Once the 'impacts' and 'probabilities' have been estimated, the risks were mapped onto a 5-point risk matrix (see Table 5-8) to generate an overall 'risk score'.

5.10.10. At this stage, risks are quantified in two ways, by assessing the likelihood (or probability) of them occurring, denoted as 'P', and the severity of impact on the project, denoted as 'I'. These are scored using a 5-scale point system from 1 (low) to 5 (high). These scores are then multiplied by each other (P x I) to determine the total risk score, which ranges from 0-25.

Table 5-8 - Impact / Probability Matrix

Project Risk Impact Criteria Model

Likelihood of risk occurring

Likelihood	Definition	Value
Almost Certain	The event is expected to occur in most circumstances	5
Likely	The event will probably occur in most circumstances	4
Possible	The event might occur at some time	3
Unlikely	The event is not expected to occur	2
Rare	The event may occur only in exceptional circumstances	1

Impact

Likelihood \ Impact	5	4	3	2	1
5	25	20	15	10	5
4	20	16	12	8	4
3	15	12	9	6	3
2	10	8	6	4	2
1	5	4	3	2	1

Impact if risk occurs

Schedule	Costs	Performance / Quality	Value
<2 weeks delay	<1% of budget	Cosmetic impact only	1 Insignificant
2 weeks– 1 month	1%-<2%	Some minor elements of objectives affected	2 Minor
1 month-<2 months	2%-<8%	Significant areas of some objectives affected	3 Moderate
2 months-<4 months	8%-<12%	Wide area impact on some objectives	4 Major
>4 months delay	>12% of budget	Significant failure resulting in the project not meeting its objectives	5 Extreme

Risk Level Tolerances

Band	Risk Treatment
High 20-25 (Red Risks)	Risks analysed at this level are so significant that risk treatment is mandatory
Medium 6-16 (Amber Risks)	Risks analysed at this level require a cost/benefit analysis to take place to determine the most appropriate treatment
Low 1-5 (Green Risks)	Risks analysed at this level can be regarded as negligible, or so small that no risk treatment is required

5.10.11. The top five initial risks are provided in Table 5-9 including the initial probability, severity and risk rating and the resultant probability, severity and risk rating in line with the risk control measures.

Table 5-9 - Top Five Initial Risks

Risk No / Type	Risks Identified	Impact	Risk without Control			Control Measure (Preventative Measures)	Risk with Control Measures		
			Prob	Sev	Risk Rating		Prob	Sev	Risk Rating
1. Funding / Third Parties	The Project may fail to secure funding in line with expectations to commence the OBC stage	Delays to programme whilst priority is agreed (risk to overall delivery due to delay / delivery confidence). Potential curtailment of the project, preventing the project moving to the OBC phase.	4	4	16	Consider and investigate external funding options. Prepare SOBC to understand and demonstrate emerging business case. Identify and track bid opportunities. Seek support of LEPs and City Deal. Explore option to progress SCC funding options to progress to OBC.	3	4	12
2. Funding / Third Parties	The project may fail to secure LLM funding to progress the project	Potential showstopper for the project unless alternative funding stream comes along.	4	5	20	Consider and investigate alternative funding options.	3	4	12
3. Funding / Third Parties	The DfT may raise concerns over project meeting funding criteria	DfT don't progress funding for the project at the OBC stage.	4	5	20	The project is being progressed at SOBC as a Transport project that enables growth with a sensitivity test on dependent development. Dependent development test to be considered at OBC stage.	3	4	12

Risk No / Type	Risks Identified	Impact	Risk without Control			Control Measure (Preventative Measures)	Risk with Control Measures		
			Prob	Sev	Risk Rating		Prob	Sev	Risk Rating
4. Environmental Risk	The project may receive an environmental challenge for the proposed solutions around the multiple River tributaries	There could be a challenge to proposed options which impacts the planning process. More conservative designs to manage potential impact on water quality.	3	4	12	Seek to demonstrate that impact is not significant for preferred option. Develop in parallel 1-2 less intrusive options. Prepare robust case for ruling out other competing options. Consult early with statutory consultees. Work openly with landowners to seeking to reduce objection risk. Seek legal Advice. Liaise with EA and BAU engagement.	3	3	9
5. Funding / Third Parties	The project may see objections raised from key statutory, non-statutory and land owner stakeholders	Objections raised during planning/statutory process leads to increased cost and time impact to address the concerns. This could lead to delays to programme. It may also lead to loss of support for the project from local MPs.	3	4	12	Keep stakeholders appraised of progress and engaged with the project. Treat all stakeholders fairly and equitably. Stakeholder management plan. Balance needed between journeys and growth to keep good.	3	3	9

Managing Risks

5.10.12. Following the initial assessment of project risks, a systematic approach has been adopted to respond to risks and allocate responsibility to the most appropriate party. One of the following four strategies is being adopted for each risk when developing a suitable response plan:

- Accept or tolerate – In the event that a) the cost of taking any action exceeds the potential benefit gained; or b) there are no alternative courses of action available;
- Treating the risk – Continuing with the activity that caused the risk by employing four different types of control including preventative, corrective, directive and detective controls;
- Transferring the risk – Risks could be transferred to a third party e.g. insurer or contractor; and
- Terminating the activity that gives rise to the risk.

5.10.13. Following the implementation of these strategies, if a risk can be treated and its effects mitigated, the risks are 're-scored', and this new score is added to the risk register.

Implementation and Review

5.10.14. Effectiveness of the response plan is dependent on the proper implementation and review of the residual risk (including any secondary risk associated with implementation). Reviews of the status of the project risk register (as part of project reporting) would be an integral part of progress meetings (and at the Project Board) during progression of the project. All key risks would be formally reviewed at key decision points in the project lifecycle.

5.11 SUMMARY OF THE MANAGEMENT CASE

5.11.1. An appropriate governance structure is essential to the delivery the project. SCC has therefore established a Project Board aligned with best practice guidance on project management. The Project Board's primary function is decision-making and review. A Project Delivery Team would be established to deal with day to day planning and delivery of the project.

5.11.2. A detailed project programme would be developed for the project setting out all the key project tasks and their duration and interdependencies, key milestones and gateways. It would act as a live document, with progress being monitored on a weekly basis by the project manager. The earliest that construction could be programmed to commence is 2024 with estimated completion in 2027.

5.11.3. Project risks have been identified during multi-disciplinary discussions and risk register has been produced. A QRA cannot been undertaken at SOBC stage of business case development, it would be undertaken at OBC stage.

5.11.4. Key stakeholders have been identified and a stakeholder management plan would be adopted, following the practice used in previous projects. Details of recent experience with the delivery of similar projects are set out.

Appendix A

OPTIONS ASSESSMENT REPORT

Appendix B

LOCAL MODEL VALIDATION REPORT (LMVR)

Appendix C

FORECASTING REPORT

Appendix D

ECONOMIC NARRATIVE

Appendix E

ECONOMIC CASE COSTS METHODOLOGY AND CALCULATIONS

Appendix F

TEE, PA AND AMCB TABLES

Appendix G

ENVIRONMENTAL IMPACTS NOTE

Appendix H

APPRAISAL SUMMARY TABLES

Appendix I

CONSULTATION REPORT

Appendix J

RISK REGISTER

Appendix K

GLOSSARY AND ABBREVIATIONS

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