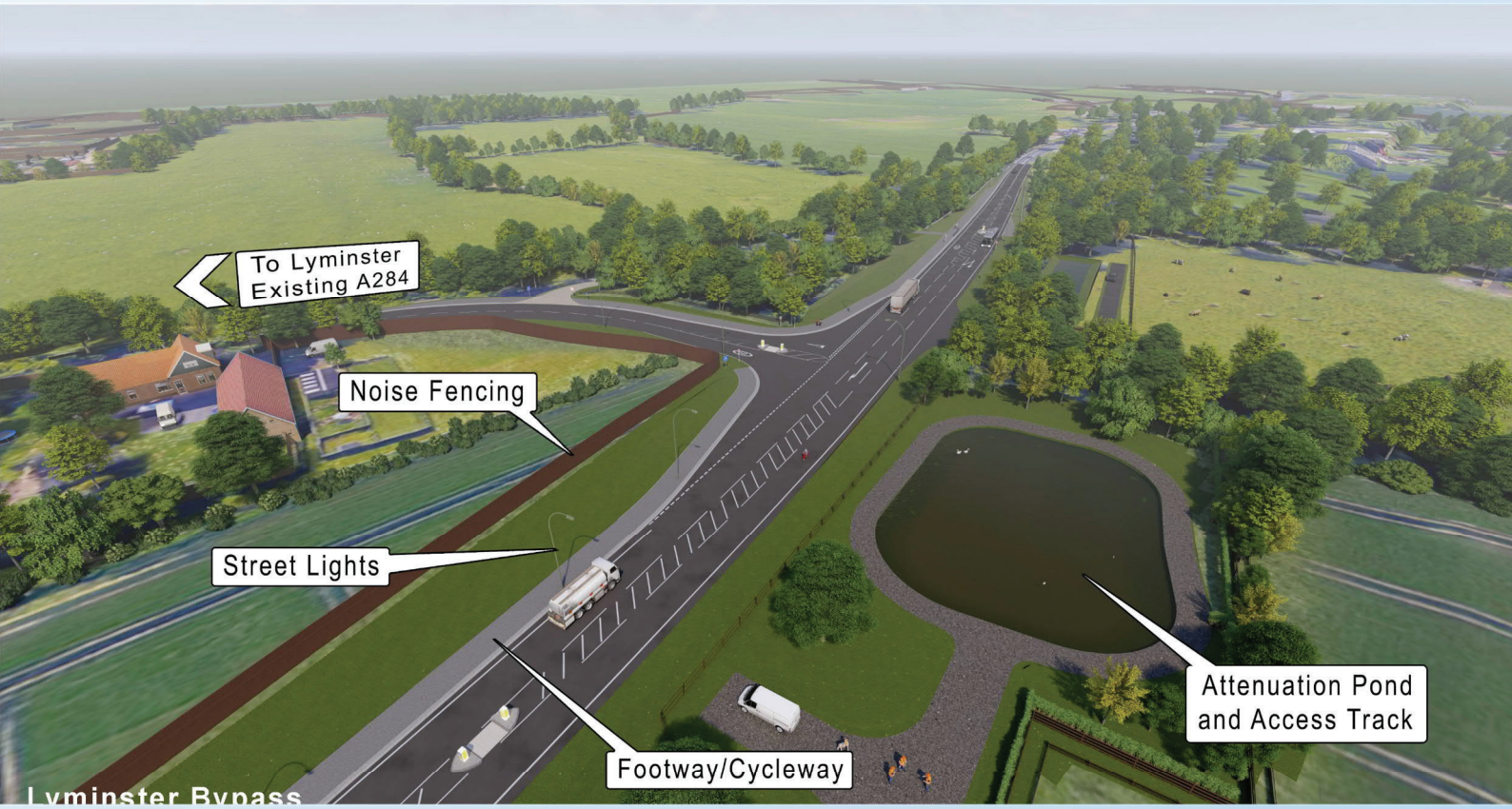
Appendix Y

Lyminster Bypass (North) Outline Transport Business Case January 2021

West Sussex County Council

LYMINSTER BYPASS (NORTH)

Outline Transport Business Case



JANUARY 2021

PUBLIC

West Sussex County Council

LYMINSTER BYPASS (NORTH)

Outline Transport Business Case

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CONTENTS

1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

1.1.1. This Outline Transport Business Case presents the evidence base in favour of the proposed Lyminster Bypass (North) near Littlehampton in West Sussex. The document has been prepared in accordance with the Department for Transport guidance on the five-business case model as published in April 2013. This requires the following five cases to be considered:

- Strategic Case
- Economic Case
- Financial Case
- Commercial Case
- Management Case

1.2 SCHEME DESCRIPTION

1.2.1. The primary north-south route between Littlehampton and the A27 is via the A284, which passes through the villages of Lyminster and Wick, crossing the West Coastway rail line at a level crossing. Delay caused by the level crossing leads to unreliable and long journey times for people using the route and poor air quality for local residents. The problems are compounded by the existing alignment, which has several tight bends and local accesses, making the route a significant constraint on future development in the area.

1.2.2. The Combined A284 Lyminster Bypass scheme will comprise a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

1.2.3. The Combined A284 Lyminster Bypass will be delivered in two parts. Lyminster Bypass (South), between A259 and Toddington Nurseries, is being funded and delivered by developers. Works began January 2020 and their current programme indicates the scheme being open to traffic winter 2021. This element is not the subject of this business case.

1.2.4. The remaining Lyminster Bypass (North), from Toddington Nurseries to the A284 north of Lyminster village, will be delivered by West Sussex County Council (WSCC), and is the subject of this business case.

1.2.5. Lyminster Bypass (North) has some funding from the Coast to Capital Local Enterprise Partnership (LEP), some Section 106 developer funding and match funding from the WSCC Capital Programme. However, following a significant increase in the Environment Agency's response to climate change during the detailed design phase, the scheme requires further funding. Works on Lyminster Bypass (North) are programmed to start in February 2022 with the scheme being opened to traffic in November 2023.

1.3 STRATEGIC CASE

The A284 Lyminster Bypass (North) will support the growth of one of the underperforming areas of the West Sussex economy and is essential for investment in Littlehampton so as not to constrain growth. It is necessary to achieve the full benefits from the delivery of 1,260 homes and 700 jobs at the North Littlehampton Strategic Development Location (SDL) This is shown in

1.3.1. Figure 2-1. The objectives align with the Department for Transport's objectives to create a safe, secure, efficient and reliable transport system that works for the people who depend on it; supporting a strong, productive economy and the jobs and homes people need.

1.3.2. The objective for this scheme is to build a bypass that will provide a direct link between Littlehampton and the A27. A series of objectives have been identified that align with the strategic aims of West Sussex County Council, Coast to Capital LEP and the Department for Transport (DfT). These are:

- Provide vehicles with a shorter and less congested route with reduced journey times, avoiding the level crossing.
- Support the North Littlehampton SDL and thus contribute directly to the delivery of 1,260 new homes and 700 new jobs.
- Improve local environmental quality.
- Improve local road safety.
- Fulfil the above criteria while providing good value for money for the taxpayer.

1.3.3. There are three principal interdependencies that affect the Lyminster Bypass (North). These are:

- **North Littlehampton Strategic Development Location (SDL)** – Lyminster Bypass (South) is being delivered as part of the North Littlehampton SDL scheme, so the timing of this is important for completing Lyminster Bypass (North) covered by this business case. The developer's current proposals are for the southern bypass to be open in winter 2021. Lyminster Bypass (North) is dependent on Lyminster Bypass (South) during its operational phase following construction, but it is not fully dependent for the construction phase. The current proposal is that construction materials for Lyminster Bypass (North) will be brought to site via Lyminster Bypass (South), although there are contingencies for alternative routes should there be any further delay to the developer programme.
- **Other Highway Schemes - A27 Improvements and A259 Corridor Improvements** – The existing A284 Lyminster Road joins with the A27 to the north on the southern arm of the junction at Crossbush. Lyminster Bypass (North) terminates some 600m south of this junction, thus there is no direct construction interdependency between Lyminster Bypass (North) and A27 Arundel Bypass. Lyminster Bypass (North) is considered to be a committed scheme in the Highway England traffic modelling and appraisal work and is included in their Do Minimum scenarios. Lyminster Bypass (North) does not rely on the completion of the A27 Arundel Bypass.
  The North Littlehampton SDL will be served by Lyminster Bypass (South) which will form a new junction with the A259 to the south via a four-arm roundabout. This new roundabout represents the western extent of the A259 Improvement scheme. The completed Lyminster Bypass (North) will re-route strategic traffic, relieving congestion at Wick roundabout. If the Lyminster Bypass (North) were not completed, this re-routing would not take place. The A259 Improvements would

still provide a benefit in this scenario, but Wick roundabout would remain a bottleneck. Lyminster Bypass (North) does not depend on either the A27 Arundel Bypass or the A259 Improvements to be completed to achieve a benefit.

1.4 ECONOMIC CASE

1.4.1. The Economic case sets out the assessment of the benefits that the scheme is forecast to deliver to society as a whole. The Value for Money (VfM) statement provides a summary of these benefits and is presented in Table 1-1 for the Core Growth Scenario.

Table 1-1 - Value for Money Statement

	Assessment	Detail
Initial Benefit Cost Ratio (BCR)	3.7	Calculated using TAG guidance
Adjusted BCR	3.8	Includes wider impacts
Qualitative assessment	Largely beneficial	Key improvements in journey quality and community severance
Key risks, sensitivities	Risk pot of £1,892,671	Risk allowance quantified to an appropriate level for this stage of scheme design
Value for money category	High	Initial and Adjusted BCRs are in Very High category, which is supported by qualitative assessment

1.4.2. The information presented in the economic case indicates that Lyminster Bypass (North) has an adjusted BCR of 3.8, which is considered **High** value for money.

1.5 FINANCIAL CASE

1.5.1. The Financial case provides a detailed cost estimate and a breakdown of how the scheme will be funded. The total scheme cost is expected to be £21.63m. This comprises £3.00m from Coast to Capital LEP, £3.76m from S106 developer contributions £3.08m funded by WSCC and the remaining £11.79m is sought from the Department for Transport. The cost breakdown is set out in Table 1-2.

1.5.2. £2.29m of the S106 funding has been received and is available to be spent on the scheme. Legal agreements are in place to receive the remaining £1.58m of S106 funding from the developers, which will be due once the 'triggers' in the payment mechanism have been reached. However, to ensure timely delivery of the scheme, WSCC has decided to provide forward funding for the remaining £1.58m S106 contributions and this is included in the Council's Capital Programme approved by the County Council.

1.5.3. The transport analysis guidance (TAG) requires that the costs incurred on schemes by Central or Local Government bodies are differentiated from costs incurred by developers and other contributors. Therefore, the economic appraisal for the business case is based on the assumption that the total S106 contributions amounting to £3.76m will be received and this is reflected in the programme and funding profile below.

Table 1-2 - Scheme Cost

Cost Element	Cost
Design Costs	£2,293,250
Construction Costs	£15,529,306
Additional Consultant Fees	£294,337
Cost Consultants	£136,149
WSCC Overheads	£320,488
Land Acquisition	£605,030
Utilities Diversions	£95,696
Risk	£1,892,671
Inflation	£467,082
TOTAL	**£21,634,009**

1.6 COMMERCIAL CASE

1.6.1. The Commercial case relates to the procurement of the scheme. West Sussex County Council has established a Design and Build (D&B) Framework following a procedure that accords with the EU procurement regulations. Tenders were received from 9 contractors on 5th October 2015 and were assessed by WSCC to provide a list of four suppliers who can provide a D&B function for WSCC's programme of major highways schemes over a 6-year period. The preferred suppliers were determined through a 60% quality / 40% price split, which was deemed best practice and offered better value for West Sussex. Award of a D&B Contract for Lyminster Bypass (North) was made in April 2016 to Jackson Civil Engineering.

1.7 MANAGEMENT CASE

1.7.1. The Management case sets out the proposed project management procedures to be adopted throughout the life cycle of the project. A Project Board has been set up to oversee the project. The responsibilities of the Project Board include:

- Ensuring the project is, and remains, aligned with its objectives and other strategic policies.
- Monitoring progress, timescales and costs at a strategic level
- Contributing to, and signing off of key project management documents and project level plans
- Reviewing each completed stage and approving progress to the next
- Approving Exception Reports including authorizing any major deviation from the agreed Project (or Stage) Plans
- Arbitrating on any conflicts within the project including negotiating a solution to any problems between the project and any third parties
- Ensuring the Project Benefits can be, and are, delivered by the project.
- Approving Project Closure

1.7.2. Owing to project constraints, a three-stage approach is proposed for the delivery of the scheme as follows:

Stage One

- Complete preliminary designs and non-statutory environmental statement. This has been completed.
- Complete Transport Business Case and obtain approval for further funding from the Department for Transport (DfT).
- Obtain planning consent for the scheme. This was granted on 26th March 2019, with the decision published 9th May 2019 following confirmation that the scheme would not be called in by the Secretary of State.

Stage Two

- Undertake land acquisition by negotiation and Compulsory Purchase Order (CPO.) This process has started.
- Undertake detailed design, which was completed in April 2019. Obtain and agree target cost following completion of the CPO process

Stage Three

- Proceed to construction by February 2022 subject to funding and land acquisition. The timelines are detailed in the scheme programme in **Appendix E**.

1.7.3. The scheme will be subject to Gateway Reviews in accordance with the WSCC Gateway Review Process by the Project Board at key decision points. These reviews would, among others:

- Enable the Project Board to assess the viability of the scheme at regular intervals, rather than let it run on in an uncontrolled manner.
- Ensure that key decisions are made prior to the detailed work needed to implement them.
- Clarify the impact of any identified external influences on the scheme
- Provide the LEP with the opportunity to undertake independent assurance

1.7.4. A strategy has been developed to establish how the performance of the scheme against objectives for project success will be monitored and assessed, to demonstrate the value for money for the funding of the scheme. These objectives relate to changes in traffic flows, reductions in journey times and in the variability of travel times, changes in noise and air quality levels at key locations, highway safety and wider economic indicators.

2 PROJECT BACKGROUND

2.1 OVERVIEW

2.1.1. Littlehampton is in Arun District, which is one of the coastal districts in West Sussex. The town has merged with the settlements of Rustington and East Preston to create an urban area with a combined population of 48,200. This makes Littlehampton the second largest built-up area in Arun District and provides 46% of the jobs available in Arun. The Arun Local Plan (adopted July 2018) has allocations for regeneration, development and sustainable urban extensions, including the North of Littlehampton SDL.

2.1.2. The primary north-south route between Littlehampton and the A27 is via the A284, which passes through the villages of Lyminster and Wick, crossing the West Coastway rail line at a level crossing. Delay caused by the level crossing leads to unreliable and long journey times for people using the route and poor air quality for local residents. The problems are compounded by the existing alignment, which has several tight bends and local accesses, making the route a significant constraint on future development in the area.

2.2 PROPOSALS

2.2.1. Lyminster Bypass (as shown in Figure 2-1) comprises a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington. The existing bus stop on the A284 will be relocated into Lyminster village as a result of the proposals, and consultation is underway with the bus operators on any changes to routes.

2.2.2. The A284 Lyminster Bypass will be delivered in two parts. Lyminster Bypass (South), between A259 and Toddington Nurseries, is being funded and delivered by developers. Works began January 2020 and their current programme indicates the scheme being open to traffic winter 2021. This element is not the subject of this business case.

2.2.3. Approximately 0.92km of highway is being built by Persimmon Homes between a new roundabout on the A259 Worthing Road at Highdown Drive, connecting to the existing access road (Fitzalan Road) serving Littlehampton Academy It is currently under construction with a planned completion date between July and December 2021 dependent on the mitigation of Covid-19 delays. This is independent of A284 Lyminster Bypass (North)

2.2.4. The remaining Lyminster Bypass (North), Toddington Nurseries to the A284 north of Lyminster village, will be delivered by West Sussex County Council (WSCC), and is the subject of this business case.

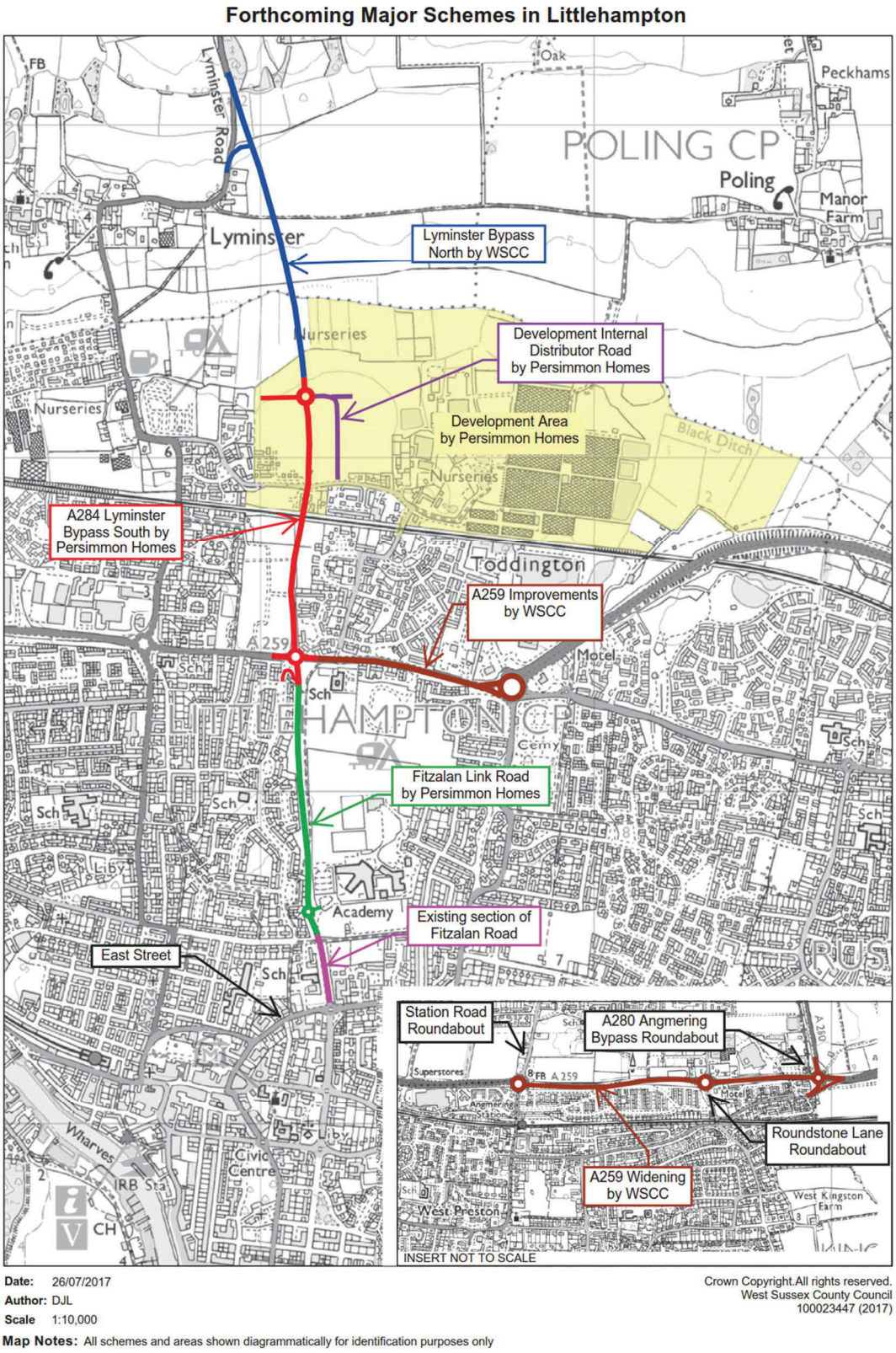

Figure 2-1 - Lyminster Bypass and Key Schemes

2.2.5. Lyminster Bypass (North) has some funding from the Coast to Capital Local Enterprise Partnership (LEP), some Section 106 developer funding and match funding from the WSCC Capital Programme. However, following a significant increase in the Environment Agency's response to climate change during the detailed design phase, the scheme requires further funding. Works on Lyminster Bypass (North) are programmed to start in February 2022 with the scheme being opened to traffic in November 2023.

2.3 PURPOSE OF REPORT

2.3.1. The purpose of this report is to set out the Transport Business Case (TBC) for the scheme, thereby forming the primary evidence base for the Lyminster Bypass (North) funding bid. The TBC has been completed in accordance with the Department for Transport's guidance document, "The Transport Business Cases" as published in April 2013. The TBC contains an assessment of the scheme in sufficient detail to allow an investment decision to be made.

2.4 REPORT STRUCTURE

2.4.1. This Transport Business Case has been structured in accordance with the DfT's best practice five case model approach, with arguments set out in each of the following areas:

- **Strategic case** which sets out the case for change, demonstrating a need for future investment
- **Economic case** which identifies impacts of the scheme and demonstrates the resulting value for money, in accordance with the requirements of HM Treasury.
- **Financial case** which identifies the cost of the proposals, potential funding sources, financial risk and sustainability
- **Commercial case** which identifies the proposed strategy for procurement and management of the commercial risks
- **Management case** which demonstrates how the proposal will be delivered, setting out information relating to project planning, governance structure and stakeholder management

3 STRATEGIC CASE

3.1 INTRODUCTION

3.1.1. The information presented in the Strategic case sets out the need for the project and how the scheme meets this need and aligns with the aims and objectives of West Sussex County Council, Coast to Capital Local Enterprise Partnership (LEP) and Department for Transport (DfT). Information has been obtained from liaison with key stakeholders. Information is presented on the following elements:

- Business strategy
- Problem identified
- Impact of not changing
- Objectives
- Measures for success
- Scope
- Constraints
- Interdependencies
- Stakeholders
- Alternatives

3.2 BUSINESS STRATEGY

3.2.1. The A284 Lyminster Bypass (North)will support the growth of one of the underperforming areas of the West Sussex economy and is necessary for investment in Littlehampton so as not to constrain growth. It is necessary to achieve the full benefits from the delivery of 1,260 homes and 700 jobs at the North Littlehampton Strategic Development Location (SDL). The objectives align with the Department for Transport's objectives to create a safe, secure, efficient and reliable transport system that works for the people who depend on it; supporting a strong, productive economy and the jobs and homes people need.

3.2.2. Lyminster Bypass (North) will support local objectives within the adopted Arun Local Plan (2018) to strengthen the north-south links between Littlehampton and A27 as well as continuing to be safeguarded as a committed scheme under Policy T SP3. It supports an aim in the West Sussex Transport Plan 2011–2026 for the delivery of the Lyminster Bypass for Arun. It will support economic growth, create safer roads, move towards climate change resilience and provide access to housing, employment and services.

3.3 PROBLEM IDENTIFIED

3.3.1. The area of interest is shown in Figure 3-1.

Figure 3-1 - Area of Interest

Infrastructure

3.3.2. The key problem which Lyminster Bypass (North) seeks to address is one of inadequate access to Littlehampton from the national Strategic Road Network (SRN). The existing A284 is characterised by a tortuous, narrow and slow route into the town centre, employment areas and the A259 from the A27 at Crossbush, with a railway level crossing at Lyminster Road, Wick. This leads to delays and congestion, causing unreliable journey times, notably at the level crossing and at the junction with the A259.

3.3.3. Lyminster Bypass (South), being delivered by Persimmon Homes, provides a new bridge over the railway. Access to the bridge from the north without Lyminster Bypass (North)would be inadequate for the strategic traffic, as it would be required to use the existing A284 and Mill Lane before joining the Lyminster Bypass (South). Mill Lane is a very narrow, D class road with discontinuous footways. This is also a longer route with a series of 90 degree turns and is inadequate for strategic traffic.

3.3.4. The residential development at North Littlehampton provides infrastructure in the town and across the rail line but leaves increased traffic pressure on the gap which is left through the village of Lyminster and north to the A27 at Crossbush.

3.3.5. The proposed Lyminster Bypass (North) scheme would bypass and relieve the village of Lyminster and join with the developer funded alignment enabling relief of the remainder of the A284 south into Littlehampton, notably including the railway level crossing and the congested A259 Wick roundabout.

Economy

3.3.6. Littlehampton's local economy performs poorly in comparison to other areas of West Sussex and the wider south east region. The poor access from the A27 Crossbush Interchange into Littlehampton is seen as a significant disincentive for businesses, especially higher value businesses, to locate in the Littlehampton area and makes it harder for existing businesses to attract and retain qualified and skilled staff.

3.3.7. Wards in Littlehampton have higher levels of unemployment and deprivation in income and employment than the average for West Sussex, as shown below. The poor transport links and lack of attractiveness for business are likely to be contributory factors to this situation. River and Ham wards in Littlehampton feature in the 10% most deprived wards nationally from the indices of multiple deprivation.

Table 3-1 - Economic Indicators for Littlehampton Wards

Area	% Unemployed (2011 census)	% People Income Deprived (2010)	% Working Age People Employment Deprived (2010)
West Sussex	3.2	9.5	6.9
Beach ward	3.6	10.5	9.3
Brookfield ward	4.1	11.1	6.8
Ham ward	4.7	24.0	13.8
River ward	5.6	21.1	18.1
Wick with Toddington ward	3.6	12.1	8.0

Environment, Community and Road Safety

3.3.8. The A284 passes through the centre of the village of Lyminster, passing through a Conservation Area and adjacent or close to six of the nine Grade 2 Listed Buildings in the village. The section of the A284 through the village contains four 90° bends which have a relatively poor road traffic collision record. The environment of the village is marred by the through traffic and the safety signing to encourage slow vehicle speeds around these bends.

3.3.9. In 2018 the Average Annual Daily Traffic (AADT) 24-hour two-way flow on the A284 through Lyminster was 12,523 vehicles (10.8% LGV, 4.3% HGV), with the Average Annual Weekday Traffic (AAWT) 24-hour two-way flow being 13,289 vehicles (11.7% LGV, 5.2% HGV). Weekday peak hour two-way flows were 916vph (14.5% LGV, 7.3% HGV) in the AM peak (08:00-09:00) and 1,078vph (10.7% LGV, 5.7% HGV) in the PM peak (17:00-18:00). Traffic flows are expected to increase significantly once planned development is complete.

3.3.10. For much of the route, there is a footway on the west side of the road only, which is variable in width from adequate to substandard. This causes some severance to pedestrian movement, notably for vulnerable groups and for properties on the eastern side of the road. The road also fails to provide a cycle friendly environment, despite being within easy cycling distance of Littlehampton town centre.

3.3.11. Between 2013 and 2017, there were two fatal, six serious and 27 slight Personal Injury collisions on the A284 between the A27 and the A259.

3.3.12. The scheme crosses the Black Ditch and its associated flood plain, and the proposed viaduct ensures that even for the critical flood event plus climate change, and considering the undefended scenario for the River Arun, there is no increase in flood risk as a result of the scheme.

3.4 IMPACT OF NOT CHANGING

3.4.1. To inform the scheme design, a traffic model of the East Arun areas has been created in accordance with the principles set out in TAG and the Design Manual for Roads and Bridges (DMRB). The East Arun Traffic Model (EATM) has been built to assess the scheme, and development of the EATM is documented in the Local Model Validation Report and the Traffic Forecasting Report. The original forecasts were built for an opening year of 2019 and 2034. Although the programme has been updated since the model was created, the forecast models have not been changed, as there is unlikely to be a significant difference in flows in this period.

3.4.2. The impact of not changing is best evidenced by considering:

- Link flows
- Journey times
- Air quality
- Noise

3.4.3. The key points for each set of data are presented in the following paragraphs.

Link Flows

3.4.4. Forecast weekday traffic flows are presented in Table 3-2 for key links.

Table 3-2 - Forecast Average Annual Daily Total (AADT)

Link	2019		2034	
	Cars	HGVs	Cars	HGVs
A284 through Lyminster	14,218	574	16,858	668
A27 east of Crossbush	31,840	2,297	37,090	2,695
A27 north of Crossbush	34,385	2,379	39,279	2,729
A259 east of Wick	29,777	1,030	34,378	1,149
A259 west of Wick	21,750	1,040	26,015	1,196

3.4.5. There is a considerable volume of traffic using the A284 passing through Lyminster village. In the 2019 model, this is forecast to be nearly 15,000 vehicles per day, 4% of which are HGVs. By 2034, this is forecast to have increased by 18% to over 17,500 vehicles per day. This volume of traffic in

the heart of the village will exacerbate problems associated with noise and air quality and increase severance of the community.

Journey Times

3.4.6. Critical to this scheme is the variability of journey times on the A284, compounded by the operation of the level crossing at Wick. Journey time surveys were conducted in a series of locations in 2013 to assist with validation of the traffic model. Summary results are shown in Table 3-3 with the routes shown in Figure 3-2. Route 2 is the key route on the A284.

Table 3-3 - Observed Journey Time Summary Results

Route	Length (km)	AM Peak		Inter Peak		PM Peak	
		Mean JT(s)	Coefficient of Variation	Mean JT(s)	Coefficient of Variation	Mean JT(s)	Coefficient of Variation
Route 1 - EB	3.8	275	13%	255	9%	292	15%
Route 1 - WB	3.9	459	16%	293	8%	305	10%
Route 2 - NB	4.3	722	28%	441	17%	466	21%
Route 2 - SB	4.3	506	23%	435	15%	539	20%
Route 3 – Anti-clockwise	5.9	592	11%	565	8%	649	18%
Route 3 – Clockwise	6.1	558	11%	565	15%	625	22%
Route 4 – NB	6.8	571	12%	644	10%	701	21%
Route 4 – SB	6.8	574	12%	556	31%	617	26%
Route 5	11.5	882	9%	822	6%	776	4%
Route 6 – EB	4.4	493	27%	294	8%	362	17%
Route 6 - WB	4.4	369	17%	307	7%	378	6%
Route 7 – NB	3.9	484	29%	345	13%	391	12%
Route 7 – SB	3.9	403	19%	316	8%	430	33%
Route 8 – Anti-clockwise	15.5	1424	13%	1147	5%	1552	6%
Route 8 – Clockwise	15.5	2241	7%	1102	4%	1693	12%
Route 9 – NB	7.0	1081	4%	1082	8%	1035	8%
Route 9 - SB	6.7	641	10%	701	8%	658	6%

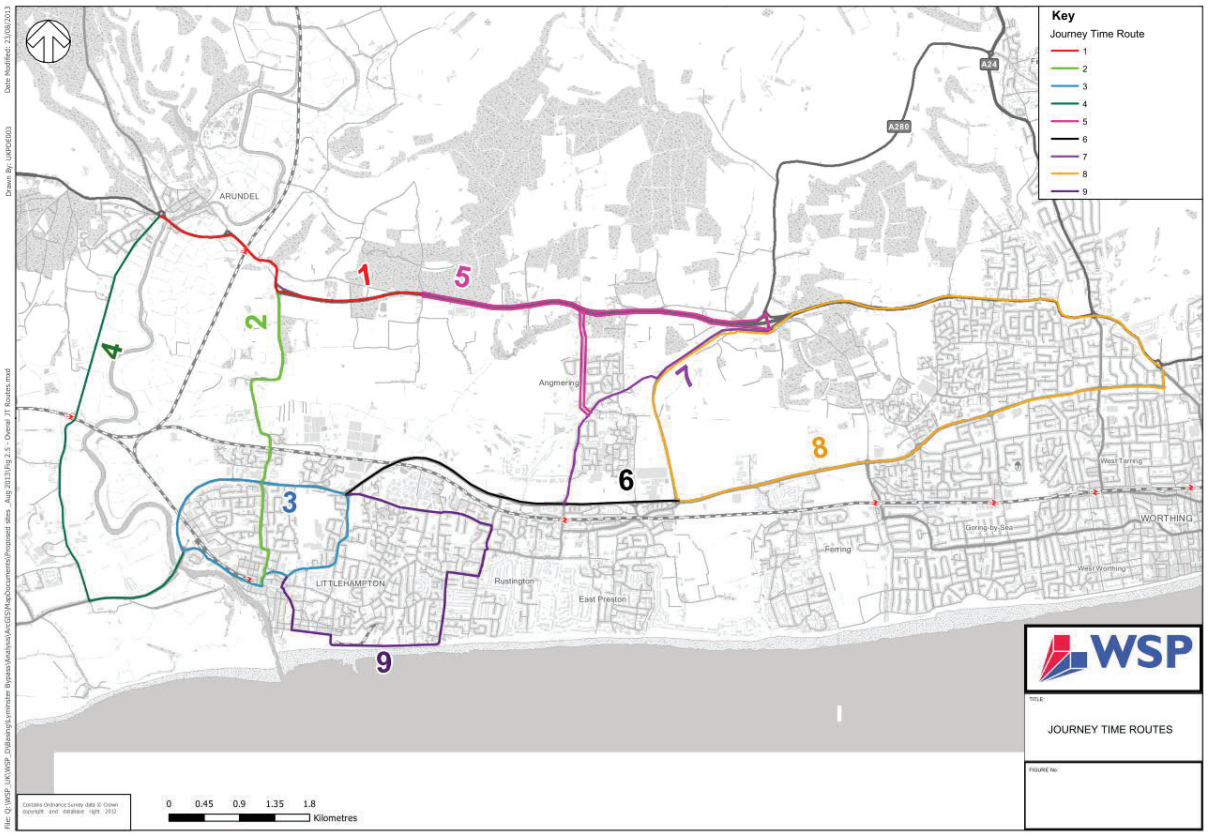

Figure 3-2 - Journey Time Routes

3.4.7. Variability is represented by considering the coefficient of variation (the standard deviation of observed journey times divided by the mean journey time). For Route 2 along the A284, in the peak hours, this is generally 20-28%, whereas for most other routes this is generally less than 15%. This indicates significant variation, due primarily to the level crossing.

3.4.8. Journey times on Route 2 through the village are predicted to increase in the future, as shown in Table 3-4.

Table 3-4 - Modelled Journey Times on the A284

Time	Direction	2016	2019		2034	
		Time (s)	Time (s)	% Change	Time (s)	% Change
AM	NB	380	383	1%	406	7%
	SB	386	391	1%	407	5%
IP	NB	372	375	1%	385	3%
	SB	375	380	1%	389	4%
PM	NB	339	342	1%	349	3%
	SB	349	357	2%	400	5%

3.4.9. The forecasts demonstrate that the A284 corridor is expected to experience increases in the peak hours in the future, particularly northbound in the AM peak and southbound in the PM peak.

3.4.10. Lyminster Bypass (North) will reduce this journey time, making the route into Littlehampton more attractive and improving access for local residents. Table 3-5 compares the travel time on the existing A284 between the A27 and B2187 to a route encompassing the bypass and Fitzalan Link Road between the A27 and B2187. The bypass route typically reduces travel time in both directions by between 20-30%.

Table 3-5 - Modelled Journey Times on the A284 Compared to Bypass

		A284 2019 DM	Bypass 2019 DS		A284 2034 DM	Bypass 2034 DS	
Time	Direction	Time (s)	Time (s)	% Change	Time (s)	Time (s)	% Change
AM	NB	383	269	-30%	406	296	-27%
	SB	391	273	-30%	407	314	-23%
IP	NB	375	266	-29%	385	284	-26%
	SB	380	264	-30%	389	278	-29%
PM	NB	342	265	-23%	349	284	-19%
	SB	357	282	-21%	400	386	-4%

3.5 OBJECTIVES

3.5.1. The objective for this scheme is to build a bypass that will provide a direct link between Littlehampton town centre and the A27 at Crossbush. Highways England is currently developing the A27 Arundel Bypass scheme which will connect to the Crossbush junction. This scheme is still in development; the Preferred Route Announcement on the 15th October 2020, but it is not yet sufficiently advanced to be considered a committed scheme. Lyminster Bypass is a committed scheme and is therefore included in the Do Minimum scenario when Highways England assesses the A27 Arundel Bypass.

3.5.2. The scheme meets a series of objectives that align with the strategic aims of West Sussex County Council, their funding partner Coast to Capital LEP and DfT. These are:

- Provide vehicles with a shorter and less congested route with reduced journey times, avoiding the level crossing
- Support the North Littlehampton SDL and thus contribute directly to the delivery of 1,260 new homes and 700 new jobs
- Improve local environmental quality
- Improve local road safety
- Fulfil the above criteria while providing good value for money for the taxpayer

3.6 MEASURES FOR SUCCESS

3.6.1. In order to measure whether the scheme objectives set out above have been met, a series of specific; measurable; achievable; realistic and time-bound targets have been derived.

Table 3-6 - Measures for Success

Objective	Target
Provide shorter route with reduced journey times	Forecast journey times between the A27 and Littlehampton lower in Do Something scenario compared to Do Minimum scenario
Support North Littlehampton SDL	Full quantum of development at North Littlehampton is completed by 2031.
Improve local environmental quality	Air and noise assessments produced in support of the planning application (and reported on the Appraisal Summary Table) demonstrate beneficial impact
Improve local road safety	Accident assessment completed as part of this business case demonstrates a net benefit
Achieve good value for money	Benefit to Cost Ratio greater than 2

3.7 SCOPE

3.7.1. The combined Lyminster Bypass scheme comprises a new 1.8km bypass of the A284 between Lyminster village and the A259 Worthing Road as shown in Figure 3-3. This includes a viaduct over Black Ditch and its associated floodplain and a bridge over the railway line at Toddington.

3.7.2. The 0.7km section crossing the railway line and connecting to the A259 Worthing Road (Lyminster Bypass (South)) is being delivered as part of the North Littlehampton development, so is not considered part of this scheme. The Transport Business Case covers the 1.1km section from the A284 approximately 600m south of Crossbush junction to approximately 180m north of the new access to the North Littlehampton SDL.

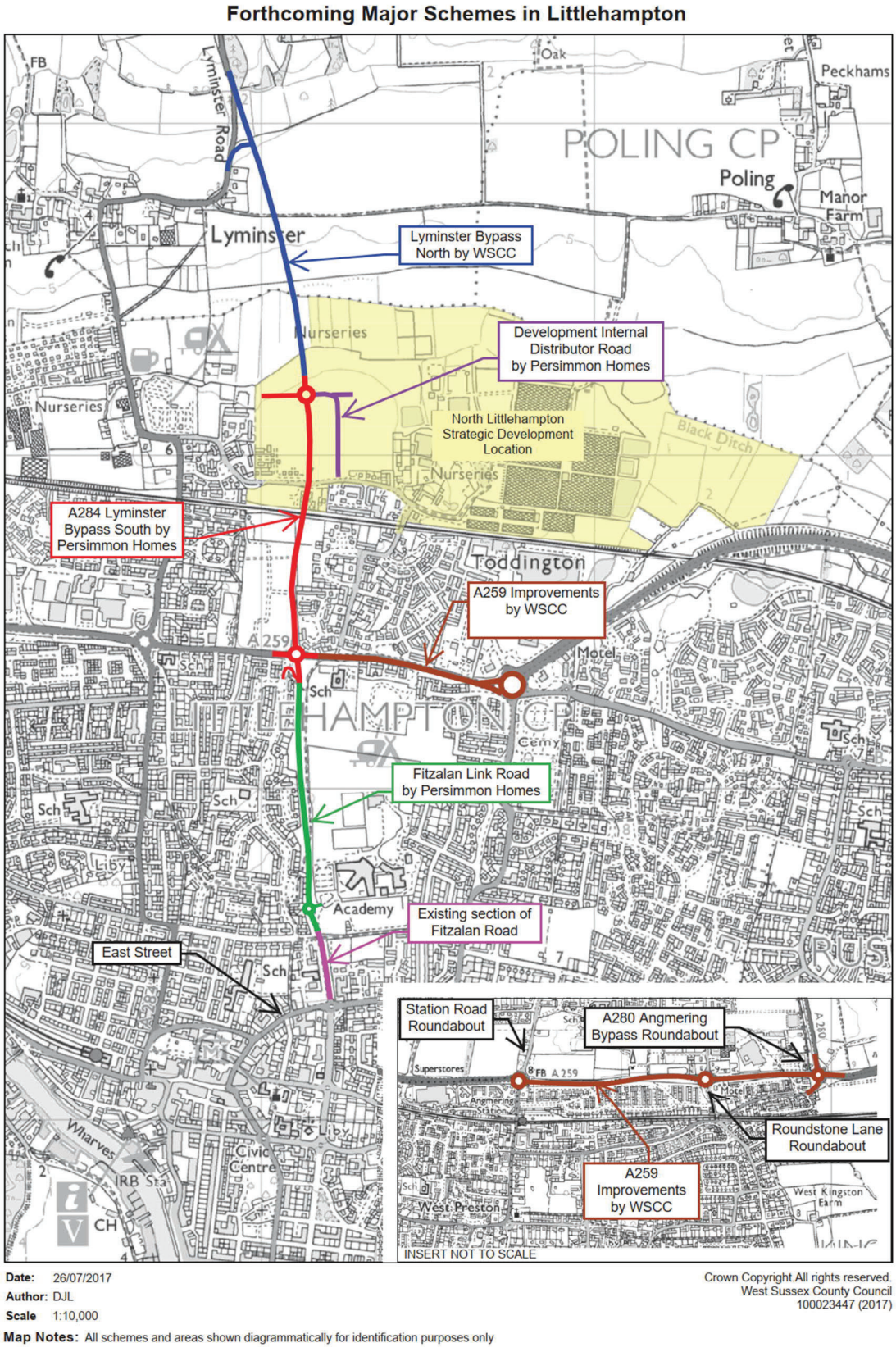

Figure 3-3 - Scope of Scheme

3.8 CONSTRAINTS

The following is a summary of the high-level constraints on the scheme:

- **Connection to the existing network** – The tie-in points to the north and south of the scheme are fixed, so are instrumental in determining the alignment of the bypass scheme
- **Lyminster Bypass (South)** – The section of the bypass being delivered as part of the North Littlehampton SDL scheme has been granted planning consent and construction has commenced, so Lyminster Bypass (North), for which the TBC has been developed, must follow a consistent design

3.9 INTERDEPENDENCIES

3.9.1. There are four principal interdependencies that affect the delivery of Lyminster Bypass (North). These are as follows.

North Littlehampton SDL

3.9.2. Lyminster Bypass (South) is being delivered as part of the North Littlehampton SDL scheme, so the timing of this is important for completing Lyminster Bypass (North) covered by this business case. The developers' current proposals are for the southern bypass to be open in winter 2021. Lyminster Bypass (North) is dependent on Lyminster Bypass (South) during its operational phase following construction, but it is not fully dependent for the construction phase. The current proposal is that construction materials for Lyminster Bypass (North) will be brought to site via Lyminster Bypass (South), although there are contingencies for alternative routes should there be any further delay to the developer programme.

3.9.3. This scheme is required to provide access to the North Littlehampton strategic development location. Without the scheme, the cumulative impact on the transport system of development in the Arun Local Plan would be severe. However, it would not be viable for the north Littlehampton development to deliver the scheme in full, so permission has been granted for the development with a temporary access arrangement via Mill Lane, completion of Lyminster Bypass (South) and a substantial financial contribution towards the completion of the scheme.

3.9.4. The scheme is needed to provide a long-term access solution for the North Littlehampton site, replacing the temporary access arrangement via Mill Lane. Therefore, the benefits of the development form part of the strategic case for the scheme and form part of the Arun Local Plan which seeks to deliver 4,695 jobs, 2,600 homes and 27,370sqm net employment floor space in east Arun as outlined in the LEP's 2014 Strategic Economic Plan.

3.9.5. If Lyminster Bypass (North) were not completed, it is likely that the North Littlehampton site would become considerably less attractive as the temporary access arrangement at Mill Lane would be unsuitable for a development of this type. This would particularly impact the commercial value and potential employment within the site since access to the SRN would be poor. Public consultation for the site and the granting of outline consent has been undertaken on the understanding that the full bypass would be completed.

3.9.6. The following quotes from relevant sections of the Transport Assessment accompanying the planning application for the North Littlehampton development (Mayer Brown 2011), set out the relationship between the development and Lyminster Bypass (North) from the perspective of the applicant:

3.9.7. **"3.6** The authorities have a long-term ambition to create a bypass route to the town from the north in order to remove the congestion caused by the Lyminster Road level crossing… The bypass would become the main route into Littlehampton from the north, essentially superseding the stretch of the A284 through Lyminster."

3.9.8. **"3.11** It is not feasible for the development to provide the complete bypass and it has been agreed that the key element is the Southern Section, which bridges the rail line, connecting the site to the town and Fitzalan Link."

3.9.9. **"3.13** In addition, a link will be created from Lyminster Road through to the bypass (Southern Section). This will largely follow the existing route of Mill Lane/Toddington Lane. This link has been discussed and agreed with WSCC and is seen as a temporary route, which will be downgraded or removed once the northern section of the bypass is implemented."

3.9.10. **"2.21 (Appendix A of TA)** It is anticipated that the North Littlehampton site will be proposed as a strategic development allocation in the draft Local Plan next year… Provision of the Lyminster by-pass from the A27 at Crossbush to the edge of the town centre and seafront, bridging the railway line, is key to this; and for this reason the development of the North Littlehampton site (which includes delivery of the section of the Lyminster bypass from the site over the railway line to the A259) is embedded in the District Council's spatial strategy which will underpin the forthcoming Local Plan."

3.9.11. **"3.6 (Appendix A of TA)** The completion of the Lyminster Bypass is considered important and will be delivered through a new local planning policy that will require new development in the area to "make Section 106 financial contributions towards the cost of the design and implementation of the northern section of the bypass."

Other Highway Schemes - A27 Improvements and A259 Corridor Improvements

3.9.12. Although there has been some progress with regard to the identification of an alignment for the A27 Arundel Bypass, details of the Government's commitment to this scheme and further improvements to the A27 at Worthing and Lancing are not currently available and therefore cannot be taken into account in this TBC. A27 improvements at Arundel, Worthing and Lancing will need to take account of this scheme as these proposals are developed.

3.9.13. The A27 at Arundel is a significant constraint on the operation of the trunk road network in this area, as it comprises a short section of single carriageway with three at-grade junctions on a route that is otherwise dual carriageway with some grade-separated junctions. This generates significant congestion, particularly at the signalised junction with the A284 at Crossbush, immediately to the north of Lyminster Bypass (North). Highway improvements at Crossbush or Arundel could be expected to significantly enhance the benefits for Lyminster Bypass (North), with the degree of enhancement dependant on the final design for any A27 improvements.

3.9.14. The existing A284 Lyminster Road joins with the A27 to the north on the southern arm of the junction at Crossbush. Lyminster Bypass (North) terminates some 600m south of this junction, thus there is no direct construction interdependency between Lyminster Bypass (North) and A27 Arundel Bypass. Lyminster Bypass (North) is considered to be a committed scheme in the Highway England traffic modelling and appraisal work and is included in their Do Minimum scenarios. Lyminster Bypass (North) does not rely on the completion of the A27 Arundel Bypass.

3.9.15. The A259 Corridor Improvements Scheme, also being promoted by WSCC, is a committed scheme in Arun District Council's Local Plan associated with the delivery of local economic growth. The North Littlehampton Development Area will be served by Lyminster Bypass (South) which will form a new junction with the A259 to the south via a four-arm roundabout. This new roundabout represents the western extent of the A259 Improvement scheme. The completed Lyminster Bypass (North) will re-route strategic traffic, relieving congestion at Wick roundabout. If the Lyminster Bypass (North) were not completed, this re-routing would not take place. The A259 Improvements would still provide a benefit in this scenario, but Wick roundabout would remain a bottleneck.

3.9.16. Although both serve as east-west corridors, the A27 is a fast-strategic route catering primarily for long-distance traffic, and the A259 is a slower route serving traffic with an origin or destination within the local area. As such, the two corridors are not considered as competing routes. The proposed improvement schemes on these corridors have different timescales for implementation, and both are intended to relieve congestion for existing users. There is no expectation for significant transfer of traffic between the corridors, regardless of the status of the improvement schemes.

3.9.17. Completion of the A27 and A259 improvement schemes would ease distribution of traffic towards and away from Lyminster Bypass (North). In the absence of Lyminster Bypass (North), this could place additional pressure on the existing A284 through Lyminster village, leading to negative impacts on environment and safety which would be averted by Lyminster Bypass (North). The A27 improvements included in the DfT Roads Investment Strategy at Arundel, Worthing and Lancing are expected to improve transport connectivity and efficiency along the Sussex Coast. Lyminster Bypass (North) can be expected to put Littlehampton in a position to maximise its potential economic advantage from the A27 improvements, rather than these benefits possibly bypassing the town. This potential wider economic benefit would be over and above the wider impacts identified in this appraisal, which do not include A27 improvements.

3.9.18. The A284 is considered the principal north-south access between Littlehampton and the strategic route of the A27, with alternative accesses at Ford Road to the west and the A280 at Angmering to the east. Ford Road is especially constrained by the presence of a level crossing at Ford, but both routes would involve the significant transfer of additional traffic onto the A259 to access Littlehampton if they were the preferred access, leading to additional congestion for all road users.

3.9.19. Lyminster Bypass (North), therefore, enhances the A284 as the principal route into and out of Littlehampton, reducing the pressures on the A259 and other local roads and allowing a shorter and more direct journey into Littlehampton. Lyminster Bypass (North) does not depend on either the A27 Arundel Bypass or the A259 Improvements to be completed to achieve a benefit.

3.10 STAKEHOLDERS

3.10.1. The following are key stakeholders in the scheme:

- **West Sussex County Council** – Scheme promoter, concerned with the strategic movement of people across the highway network and economic regeneration of Littlehampton
- **Highways England** – Responsible for operation and maintenance of the A27 immediately to the north of the scheme, with particular interest in the operation of the Crossbush junction. There is a clear interaction between the operation of the A27 at Crossbush and Lyminster Bypass (North),

so support from HE is crucial. There is an ongoing dialogue between the parties and in their response to the Detailed Planning Application, HE has supported the scheme.

- **Coast to Capital** – Local Enterprise Partnership (LEP) responsible for delivering economic growth and job creation in areas including West Sussex
- **Arun District Council** – Local Authority for Lyminster Bypass (North). Supporter of the scheme, as bypass will improve quality of life for Lyminster residents, facilitate the delivery of the North Littlehampton SDL and reduce journey times into the district
- **Persimmon Homes** – Private developer delivering the housing at North Littlehampton SDL. Full consent has been granted for proposals
- **T&L Crawley No. 2** – owner of part of the North Littlehampton SDL, currently with consent for commercial development.
- **North Littlehampton Members Steering Group** – Members of West Sussex County Council, Arun District Council and Littlehampton Town Council, with other service providers including, Network Rail advising on the North Littlehampton SDL. Members have been consulted on an on-going basis since the inception of the scheme.
- **Network Rail** – Affected due to change of traffic flows at Wick level crossing. They have expressed support for the scheme in principle
- **Environment Agency** – Responsible for maintenance of Black Ditch, which is bridged by the Lyminster Bypass (North). They have been involved in technical review of the flood modelling undertaken to date and assisting in the preparation of the required permits
- **Affected Landowners** – Range of opinions - they have been consulted directly
- **Lyminster and Crossbush Parish Council** – Broadly supportive of the scheme, but they have some concerns about lack of relief to some residential properties on A284 to the north of the scheme tie-in to the existing road and impact on congestion at the A284/A27 Crossbush junction.
- **Littlehampton Town Council** – Supporter of the scheme
- **Joint Eastern Arun Area Committee (JEAAC) Highways and Transport Sub-Group** – The committee is regularly provided with updates on the scheme and is supportive.

3.10.2. The approach for engaging these stakeholders is set out in section 7.7.

3.11 OPTIONS AND ALTERNATIVES

3.11.1. The following options have been assessed:

- **Do Minimum**: Committed schemes are progressed, but Lyminster Bypass (North) is not completed. Lyminster Bypass (South) is completed by the developers
- **Do Something**: Completed Lyminster Bypass (North) with Wick level crossing remaining open.

3.11.2. Primary risks associated with the Do Something option are as follows:

- Developers are delayed completing construction of Lyminster Bypass (South)
- Scheme's planning permission expires due to funding delays
- Adverse changes in Government policy
- Programming problems with statutory undertakers
- Ground conditions adversely impacting design
- Further delays arising from Covid-19

4 ECONOMIC CASE

4.1 INTRODUCTION

4.1.1. The economic assessment is undertaken to ensure that the scheme fulfils the Treasury's requirements for appraisal and demonstrating value for money.

4.1.2. To enable the scheme value for money to be calculated, and to inform the scheme design and environmental assessments of the scheme, a traffic model of the East Arun areas has been created in accordance with the principles set out in TAG and the Design Manual for Roads and Bridges (DMRB). Development of the East Arun Traffic Model (EATM) is documented in the Local Model Validation Report and the Traffic Forecasting Report.

4.1.3. Information is presented below on the following:

- Options appraised
- Assumptions
- Results
- Sensitivity and risk profile
- Appraisal Summary Table
- Value for Money statement

4.2 OPTIONS APPRAISED

4.2.1. In developing the economic case, the Do Something option which includes the completed Lyminster Bypass (North) with Wick level crossing remaining open has been tested against a Do Minimum option that includes Lyminster Bypass (South). The benefits have been assessed for two assessment periods as follows:

- **AM, IP, PM:** the modelled (AM peak, Interpeak and PM peak) periods only
- **AM, IP, PM, OP, WE**: the modelled periods and additional benefits for off peak (OP) and weekend (WE) periods

4.2.2. Both of the above assessments have been carried out for the following two options:

- **2017 TUBA runs (1.7):** The economic analysis uses TUBA version 1.9.9 and TAG data book March-2017-release-v1-7 that were used in the model assignments. These have been run for the core growth, high growth and low growth scenarios
- **OBR Sensitivity Test (1.14)**: This run uses TUBA version 1.9.14 based on updated Office of Budget Responsibility (OBR) economic projection and fleet data (using TAG Data Book v1.14 (July 2020)) as a result of the Covid-19 pandemic, also run for the core growth, high growth and low growth scenarios.

4.2.3. The details presented in the Economic Case are based on the Do Something option.

4.3 ASSUMPTIONS

4.3.1. The economic case has been compiled in accordance with the guidance set out in TAG. However, there are some assumptions that have been made in relation to some specific areas of the assessment, and these are discussed below.

Costs

4.3.2. An optimism bias of 15% has been assumed in accordance with TAG guidance for a scheme at this stage of development. This is considered appropriate, as most of the risks are known and costed separately in the risk allowance. Risk has been appropriately quantified through Ground Investigations, Site Topographical Surveys and Flood Studies.

4.3.3. The scheme cost is explored in more detail in the Financial Case. In line with TAG guidance, money already spent on scheme development has been excluded from the calculations, since it is non-recoverable. The adjusted scheme cost for the Economic Case is shown below.

Table 4-1 - Adjusted Scheme Cost (2020 Q3 prices)

Element	Cost
Total Scheme Cost	£19,741,338
Spend to Date	£3,165,969
Remaining Scheme Cost	£16,575,368
Risk	£1,892,671
Optimism Bias (15% of Remaining)	£2,411,710
Adjusted Scheme Cost (Economic Case)	**£20,879,749**

User Benefits

4.3.4. Scheme benefits have been assessed using the Department for Transport's TUBA (Transport Users Benefit Appraisal) software. This is an industry-standard tool for undertaking economic appraisal in accordance with guidelines published in TAG Unit A1 (July 2020). The full economic assessment methodology adopted including choice of parameters, definition of inputs, discounting, and reporting is compliant with TAG Unit A1.

4.3.5. Lyminster Bypass (North), like most road projects, is considered an asset with an indefinite life, with maintenance and renewal taking place as required. Scheme appraisal has therefore been undertaken for a 60-year period in accordance with HM Treasury's Green Book.

4.3.6. Annualisation factors for the three modelled time periods have been derived based on values obtained from the traffic survey data, as set out in section 8.3 of the Data Collection Report. The derived annualisation factors are given in Table 4-2, with further details provided in the Economic Assessment Report.

Table 4-2 - Annualisation Factors

Period	Peak Hour to Peak Period Factor	Number per Year	Annualisation Factor
AM (07:00-10:00)	2.329	253	589
IP (10:00-16:00)	6.075	253	1537
PM (16:00-19:00)	2.454	253	621
Off-peak (19:00-07:00 weekdays)	2.70	253	683
Weekend (Sat 07:00-Mon 07:00)	25.60	56	1444

4.3.7. Off-peak and weekend periods use the interpeak model as a proxy, with suitable factors applied based on observed traffic flows over these periods. Bank holidays are represented by weekend factors. There are 8 bank holidays per year, which can be amalgamated into four 2-day blocks equivalent to a weekend. Thus, there are 56 “weekend” periods in a year. The calculated benefits have therefore been derived for all 8,760 hours in the year.

4.3.8. User classes have been defined as shown in Table 4-3 so that the definitions used in model development have been applied to the TUBA assessment.

Table 4-3 - User Class Definitions

UC	Model Definition	TUBA Parameter		
		Vehicle Type	Purpose	Person Type
1	Car: Commuting	Car	Commuting	All
2	Car: Employer’s Business	Car	Business	All
3	Car: Other	Car	Other	All
4	LGV	LGV Freight	Business	All
5	OGV1	OGV1	Business	Driver
6	OGV2	OGV2	Business	Driver

4.3.9. TUBA requires that the trip matrices be entered as total trips, but SATURN defines trips in Passenger Car Units (PCU), as set out in the Local Model Validation Report (February 2014). It is, therefore, necessary to apply adjustment factors to convert the PCU matrices into total trips. These are set out in Table 4-4.

Table 4-4 - PCU to Vehicle Adjustment Factors

UC	Model Definition	PCU Factor	TUBA Factor
1	Car: Commuting	1.0	1.00000
2	Car: Employer’s Business	1.0	1.00000
3	Car: Other	1.0	1.00000
4	LGV	1.0	1.00000
5	OGV1	1.9	0.52632
6	OGV2	2.9	0.34483

4.3.10. The derivation of the PCU factors is set out in section 2.7 of Deliverable D7 - Forecasting Report (August 2018).

4.3.11. Model skims were extracted from the 2019 and 2034 forecast models as proxies for 2022 and 2037. The TUBA default assumption on growth has been applied, with no additional growth assumed beyond the final modelled year of 2037. The default assumptions on growth in the values of impacts have also been applied, meaning that the per unit benefits of the scheme decline over time.

4.3.12. The model forecasts have been completed in accordance with TAG principles, as set out in the Lyminster Bypass (North) Forecasting Report. TAG requires that forecasts for fixed trip models should include increases to account for fuel and income growth, resulting in relatively large growth forecasts. While this is sufficient growth to generate a robust assessment, it is reasonable to assume that such growth forecasts will not continue indefinitely. There is no further evidence to indicate the likely direction of traffic growth beyond this point, so the default assumption of zero growth beyond the final modelled year has been adopted.

4.3.13. Analysis undertaken on the high and low growth scenarios provides a sufficiently robust evidence base to assess the scheme benefits under possible alternative growth scenarios.

Wider Impacts

4.3.14. The wider economic impacts of the proposed scheme have been assessed in accordance with guidance set out in TAG Unit A2-1. The guidance considers the following impacts:

- **WI1: Agglomeration**: changes in economic production as a result of changes in connectedness and accessibility
- **WI2: Output change in imperfectly competitive markets**: a reduction in transport costs to businesses allows for an increase in output of goods and services that use transport
- **WI3: Tax revenues arising from labour market impacts**: changes in labour supply or a move to more or less productive jobs due to a change in commuting cost

4.3.15. TAG indicates that the output change in imperfectly competitive markets and tax revenues from changes in the labour supply will be relevant to most schemes, but the agglomeration element may not be relevant. Critical to this determination is whether the scheme is in close proximity to an economic centre or large employment centre. TAG defines such locations as Functional Urban Regions (FUR), and the plan included in Appendix A of the guidance indicates that Lyminster Bypass (North) does not lie within a FUR.

4.3.16. It is considered that the impact on the labour supply due to changes in transport costs will be beneficial, as congestion will be reduced, but the impact will be small in relation to the typical length of commuting trips. The data collection and analysis required for a detailed quantitative study is considered disproportionate for a scheme of this size. It should be noted that this impact is different to releasing highway capacity to facilitate the development of employment sites, which is a direct benefit of this scheme.

4.3.17. Consequently, only the output change in imperfectly competitive markets (WI2) has been assessed.

Accident Assessment

4.3.18. Assessment of the costs and benefits associated with accidents has been undertaken using the DfT's CoBALT (Cost – Benefit-Analysis Light Touch) software. Input parameters are those published December 2018, as this analysis has not been updated for this version of the OBC. The analysis will be refreshed for the Full Business Case.

4.3.19. CoBALT uses information derived from the SATURN model, so a network has been built that replicates the EATM network. Traffic flows have been obtained from the SATURN model, for the following years:

- Base Year (2013)
- Opening year (2022)

- Design year with Scheme (2037)

4.3.20. Accident data for a period of five years from 2013 to 2017 has been obtained from WSCC in order to provide accident rates for existing links in CoBALT. The accidents have been geocoded to correspond to the selected highway network.

4.3.21. CoBALT provides three options for assessment:

- Link only
- Junction only
- Link and junction combined

4.3.22. The analysis for Lyminster Bypass (North) has been carried out using the 'combined' method. This requires considerably less analysis than separate link and junction analysis, so is the appropriate proportional assessment for this scheme. TAG Unit A4-1 2.3.9 indicates that this is acceptable when local data is hard to distinguish between links and junctions.

Air Quality Assessment

- The Air Quality Assessment has been undertaken following up to date guidance (LAQM) and methodologies (ADMS Roads) to provide a robust assessment of the potential impacts upon air quality.

Noise Assessment

- Noise has been assessed in line with the Noise and Vibration Assessment (November 2018)

4.4 RESULTS

4.4.1. Results are presented for the "AM, IP and PM" peak period assessment as well as the "AM IP, PM, OP and WE" assessment which includes additional benefits in the off peak and weekend period. These assessments are presented for both the 2017 TUBA ("1.7") analysis and OBR sensitivity test ("1.14") for the core growth, high growth and low growth scenarios, in Table 4-5 to Table 4-7 below.

Table 4-5 – User Benefits for the Core Growth Scenario (2010 Prices Discounted to 2010)

Benefit		Core Growth Run (1.7)		Core Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Consumer - commuting user benefits	Travel time	£10,270,000	£12,801,000	£8,710,000	£10,850,000
	Vehicle operating costs	£823,000	£1,015,000	£745,000	£928,000
	Subtotal	£11,093,000	£13,816,000	£9,455,000	£11,778,000
Consumer - other user benefits	Travel time	£18,343,000	£35,469,000	£15,505,000	£29,986,000
	Vehicle operating costs	£2,531,000	£4,763,000	£2,266,000	£4,326,000
	Subtotal	£20,874,000	£40,232,000	£17,771,000	£34,312,000
Business benefits	Travel time	£9,662,000	£17,935,000	£8,362,000	£15,503,000
	Vehicle operating costs	£2,099,000	£3,607,000	£1,909,000	£3,343,000
	Subtotal	£11,761,000	£21,542,000	£10,271,000	£18,846,000
Present Value of Benefits (PVB)		**£43,728,000**	**£75,590,000**	**£37,497,000**	**£64,936,000**

4.4.2. The Core Growth Scenario run generates benefits £43.7m for the AM, IP and PM periods and £75.6m for the AM, IP, PM, OP and WE periods. The OBR sensitivity run generates benefits of £37.5m for the AM, IP and PM periods and £64.9m for the AM, IP, PM, OP and WE periods

Table 4-6 – User Benefits for the High Growth Scenario (2010 Prices Discounted to 2010)

Benefit		High Growth Run (1.7)		High Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Consumer - commuting user benefits	Travel time	£11,092,000	£13,706,000	£9,412,000	£11,621,000
	Vehicle operating costs	£1,007,000	£1,179,000	£903,000	£1,063,000
	Subtotal	£12,099,000	£14,885,000	£10,315,000	£12,684,000
Consumer - other user benefits	Travel time	£19,230,000	£36,591,000	£16,261,000	£30,940,000
	Vehicle operating costs	£2,731,000	£5,167,000	£2,428,000	£4,646,000
	Subtotal	£21,961,000	£41,758,000	£18,689,000	£35,586,000
Business benefits	Travel time	£10,177,000	£18,467,000	£8,802,000	£15,952,000
	Vehicle operating costs	£2,254,000	£3,811,000	£2,036,000	£3,524,000
	Subtotal	£12,431,000	£22,278,000	£10,838,000	£19,476,000
Present Value of Benefits (PVB)		**£46,491,000**	**£78,921,000**	**£39,842,000**	**£67,746,000**

4.4.3. The High Growth Scenario run generates benefits £46.5m for the AM, IP and PM periods and £78.9m for the AM, IP, PM, OP and WE periods. The OBR sensitivity run generates benefits of £39.8m for the AM, IP and PM periods and £67.7m for the AM, IP, PM, OP and WE periods.

Table 4-7 – User Benefits for the Low Growth Scenario (2010 Prices Discounted to 2010)

Benefit		Low Growth Run (1.7)		Low Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Consumer - commuting user benefits	Travel time	£9,102,000	£11,567,000	£7,766,000	£9,853,000
	Vehicle operating costs	£873,000	£1,041,000	£811,000	£970,000
	Subtotal	£9,975,000	£12,608,000	£8,577,000	£10,823,000
Consumer - other user benefits	Travel time	£15,915,000	£32,236,000	£13,501,000	£27,319,000
	Vehicle operating costs	£2,248,000	£4,304,000	£2,063,000	£3,957,000
	Subtotal	£18,163,000	£36,540,000	£15,564,000	£31,276,000
Business benefits	Travel time	£9,374,000	£17,703,000	£8,121,000	£15,305,000
	Vehicle operating costs	£1,853,000	£3,251,000	£1,745,000	£3,094,000
	Subtotal	£11,227,000	£20,954,000	£9,866,000	£18,399,000
Present Value of Benefits (PVB)		**£39,365,000**	**£70,102,000**	**£34,007,000**	**£60,498,000**

4.4.4. The Low Growth Scenario run generates benefits £39.4m for the AM, IP and PM periods and £70.1m for the AM, IP, PM, OP and WE periods. The OBR sensitivity run generates benefits of £34m for the AM, IP and PM periods and £60.5m for the AM, IP, PM, OP and WE periods.

Wider Impacts

4.4.5. The results of the analysis described above are summarised in Table 4-8, Table 4-9 and Table 4-10. TAG indicates impact WI2 should be estimated at 10% of the total business benefits arising from the scheme.

Table 4-8 - Wider Economic Impacts Results for the Core Growth Scenario (2010 Prices Discounted to 2010)

Impact	Scenario	Total Business Benefits	NPV of WI2
WI2 – Output in Imperfectly Competitive Markets (Core Growth Run (1.7))	AM, IP and PM	£11,761,000	£1,176,000
	AM, IP, PM, OP and WE	£21,542,000	£2,154,000
WI2 – Output in Imperfectly Competitive Markets (Core Growth OBR Sensitivity Run (1.14))	AM, IP and PM	£10,271,000	£1,027,000
	AM, IP, PM, OP and WE	£18,846,000	£1,885,000

Table 4-9 - Wider Economic Impacts Results for the High Growth Scenario (2010 Prices Discounted to 2010)

Impact	Scenario	Total Business Benefits	NPV of WI2
WI2 – Output in Imperfectly Competitive Markets (High Growth Run (1.7))	AM, IP and PM	£12,431,000	£1,243,000
	AM, IP, PM, OP and WE	£22,278,000	£2,228,000
WI2 – Output in Imperfectly Competitive Markets (High Growth OBR Sensitivity Run (1.14))	AM, IP and PM	£10,838,000	£1,084,000
	AM, IP, PM, OP and WE	£19,476,000	£1,948,000

Table 4-10 - Wider Economic Impacts Results for the Low Growth Scenario (2010 Prices Discounted to 2010)

Impact	Scenario	Total Business Benefits	NPV of WI2
WI2 – Output in Imperfectly Competitive Markets (Low Growth Run (1.7))	AM, IP and PM	£11,227,000	£1,123,000
	AM, IP, PM, OP and WE	£20,954,000	£2,095,000
WI2 – Output in Imperfectly Competitive Markets (Low Growth OBR Sensitivity Run (1.14))	AM, IP and PM	£9,866,000	£987,000
	AM, IP, PM, OP and WE	£18,399,000	£1,840,000

Accident Assessment

4.4.6. Costs per casualty and per accident are as set out in the TAG data book (December 2018). All monetary values are in pounds, in 2010 prices, discounted to 2010.

4.4.7. The results of the accident analysis are shown in Table 4-11. The appraisal period is 2019 – 2078, which will be updated for the Full Business Case.

Table 4-11 - Accident Analysis Results (2010 Prices Discounted to 2010)

Benefit		Value
Total accidents saved by scheme		223
Casualties saved by scheme	Fatal	1
	Serious	28
	Slight	265
	TOTAL	294
Total value of accident savings		**£9,714,000**

4.4.8. The scheme generates nearly £10m worth of safety benefits arising from a reduction in accidents and casualties. Therefore, there are high safety benefits associated with the scheme.

Delays During Construction

4.4.9. Construction plans are still in production, but since Lyminster Bypass (North) will be built off-line, it is not anticipated that there will be any construction delays bar a very small number of overnight closures to tie in the scheme at the northern end. This would have a very low cost and would not affect the Benefit to Cost Ratio (BCR) in a meaningful way.

Distributional Impact Assessment

4.4.10. The Distributional Impact Assessment has not been updated for this business case, but it will be provided in the Full Business Case.

Air Quality Assessment

4.4.11. Given the relatively low background concentrations within the study area, according to the EPUK significance criteria, the effects of the operation phase are considered to be a permanent direct long term slight adverse to slight beneficial for NO2 and negligible effects for PM10. The qualitative assessment shows a total Air Quality benefit of £1,086,496. Full results are provided in the Economic Assessment Report.

Noise Assessment

4.4.12. The Noise assessment shows that most receptors will experience an impact of negligible magnitude. During the short-term, moderate and major adverse impacts are predicted to the south of the scheme. In the long term, the same area would receive a minor or moderate adverse impact.

4.4.13. The assessment shows that noise sensitive receptors near Lyminster Bypass (South) at the intersection with the A259, which does not form part of this scheme, are likely to receive an increase in noise levels. Mitigation in the form of a 3m high noise barrier is committed and therefore some of these areas will experience a noise impact lower than presented.

4.4.14. Beneficial impacts will be experienced at noise sensitive receptors along the existing A284 over both short and long-term. The qualitative assessment shows a total Noise benefit of -£185,588. Full results are given in the Economic Assessment Report.

4.5 SENSITIVITY AND RISK PROFILE

4.5.1. Risks that have the potential to affect the scheme cost are included in the project risk register, which also includes potential mitigation measures. Risks have been assessed on a full Quantified Cost Risk Assessment basis. The project risk register and QCRA output is included in Appendix C.

4.5.2. The sum of unmitigated risk costs is £1,892,671.

4.6 APPRAISAL SUMMARY TABLE

4.6.1. The Appraisal Summary Table (AST) is a single-page summary of the key aspects of the economic case, focusing on five key appraisal areas, in accordance with guidance presented in TAG:

- Economy
- Environmental
- Social
- Safety
- Public Accounts

4.6.2. The AST for Lyminster Bypass (North) has been completed and is presented in **Appendix A**. Supporting worksheets are presented in **Appendix B**.

4.7 VALUE FOR MONEY STATEMENT

4.7.1. The value for money assessment has been prepared in accordance with the DfT's "Value for money assessment: advice note for local transport decision makers".

4.7.2. Guidance indicates a range of value for money categories that vary according to the Benefit to Cost Ratio (BCR) of the scheme. These value for money categories are as follows:

Table 4-12 - DfT Value for Money Categories

BCR Range	Value for Money Category
< 1.0	Poor
1.0 – 1.5	Low
1.5 – 2.0	Medium
2.0 – 4.0	High
> 4.0	Very High

4.7.3. Initial monetised impacts of the scheme have been extracted from the AST and reported in the Economic Efficiency of the Transport System (TEE) table, Public Accounts (PA) table and Analysis of Monetised Costs and Benefits (AMCB) table, which are included in **Appendix B** and repeated in Table 4-13 to The information in Table 4-20 shows that the Initial BCR of the High Growth Scenario (v1.7) of the scheme, based on standard monetised values, is **3.9** for the "AM, IP and PM" and **6.1** for the "AM, IP, PM, OP and WE" assessment, which is considered **High** and **Very High** value for money respectively according to DfT guidance.

4.7.4. The Initial BCR of the High Growth Scenario (OBR sensitivity) of the scheme, based on standard monetised values, is **3.5** for the "AM, IP and PM" and **5.4** for the "AM, IP, PM, OP and WE"

assessment, which represents **High** and **Very High** value for money respectively according to DfT guidance.

4.7.5. Table 4-21. In compiling the value for money statement, the impacts of accidents and delays during construction were included. All monetary values are in 2010 prices, discounted to 2010.

Table 4-13 - Economic Efficiency of the Transport System (TEE) for the Core Growth Scenario

User	Item	Core Growth Run (1.7)		Core Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Non-business: Commuting	Travel time	£10,270,000	£12,801,000	£8,710,000	£10,850,000
	Vehicles operating costs	£823,000	£1,015,000	£745,000	£928,000
	Net Commuting	£11,093,000	£13,816,000	£9,455,000	£11,778,000
Non-business: Other	Travel time	£18,343,000	£35,469,000	£15,505,000	£29,986,000
	Vehicles operating costs	£2,531,000	£4,763,000	£2,266,000	£4,326,000
	Net Other	£20,874,000	£40,232,000	£17,771,000	£34,312,000
Business	Travel time	£9,662,000	£17,935,000	£8,362,000	£15,503,000
	Vehicles operating costs	£2,099,000	£3,607,000	£1,909,000	£3,343,000
	Net Business	£11,761,000	£21,542,000	£10,271,000	£18,846,000
	TOTAL	**£43,728,000**	**£75,590,000**	**£37,497,000**	**£64,936,000**

Table 4-14 - Economic Efficiency of the Transport System (TEE) for the High Growth Scenario

User	Item	High Growth Run (1.7)		High Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Non-business: Commuting	Travel time	£11,092,000	£13,706,000	£9,412,000	£11,621,000
	Vehicles operating costs	£1,007,000	£1,179,000	£903,000	£1,063,000
	Net Commuting	£12,099,000	£14,885,000	£10,315,000	£12,684,000
Non-business: Other	Travel time	£19,230,000	£36,591,000	£16,261,000	£30,940,000
	Vehicles operating costs	£2,731,000	£5,167,000	£2,428,000	£4,646,000
	Net Other	£21,961,000	£41,758,000	£18,689,000	£35,586,000
Business	Travel time	£10,177,000	£18,467,000	£8,802,000	£15,952,000
	Vehicles operating costs	£2,254,000	£3,811,000	£2,036,000	£3,524,000
	Net Business	£12,431,000	£22,278,000	£10,838,000	£19,476,000
	TOTAL	**£46,491,000**	**£78,921,000**	**£39,842,000**	**£67,746,000**

Table 4-15 - Economic Efficiency of the Transport System (TEE) for the Low Growth Scenario

User	Item	Low Growth Run (1.7)		Low Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Non-business: Commuting	Travel time	£9,102,000	£11,567,000	£7,766,000	£9,853,000
	Vehicles operating costs	£873,000	£1,041,000	£811,000	£970,000
	Net Commuting	£9,975,000	£12,608,000	£8,577,000	£10,823,000
Non-business: Other	Travel time	£15,915,000	£32,236,000	£13,501,000	£27,319,000
	Vehicles operating costs	£2,248,000	£4,304,000	£2,063,000	£3,957,000
	Net Other	£18,163,000	£36,540,000	£15,564,000	£31,276,000
Business	Travel time	£9,374,000	£17,703,000	£8,121,000	£15,305,000
	Vehicles operating costs	£1,853,000	£3,251,000	£1,745,000	£3,094,000
	Net Business	£11,227,000	£20,954,000	£9,866,000	£18,399,000
	TOTAL	**£39,365,000**	**£70,102,000**	**£34,007,000**	**£60,498,000**

Table 4-16 - Public Accounts (PA) for the Core Growth Scenario

User	Item	Core Growth Run (1.7)		Core Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Central government funding	Investment costs	£14,419,000	£14,419,000	£14,083,000	£14,083,000
Central government funding: non-transport	Indirect tax revenues	£2,034,000	£3,470,000	£1,610,000	£2,813,000
Broad transport budget		£14,419,000	£14,419,000	£14,083,000	£14,083,000
Wider public finances		£2,034,000	£3,470,000	£1,610,000	£2,813,000

Table 4-17 - Public Accounts (PA) for the High Growth Scenario

User	Item	High Growth Run (1.7)		High Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Central government funding	Investment costs	£14,419,000	£14,419,000	£14,083,000	£14,083,000
Central government funding: non-transport	Indirect tax revenues	£2,223,000	£3,715,000	£1,734,000	£2,966,000
Broad transport budget		£14,419,000	£14,419,000	£14,083,000	£14,083,000
Wider public finances		£2,223,000	£3,715,000	£1,734,000	£2,966,000

Table 4-18 - Public Accounts (PA) for the Low Growth Scenario

User	Item	Low Growth Run (1.7)		Low Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Central government funding	Investment costs	£14,419,000	£14,419,000	£14,083,000	£14,083,000
Central government funding: non-transport	Indirect tax revenues	£1,828,000	£3,167,000	£1,516,000	£2,644,000
Broad transport budget		£14,419,000	£14,419,000	£14,083,000	£14,083,000
Wider public finances		£1,828,000	£3,167,000	£1,516,000	£2,644,000

Table 4-19 - Analysis of Monetised Costs and Benefits (AMCB) for the Core Growth Scenario

Item	Core Growth Run (1.7)		Core Growth OBR Sensitivity Run (1.14)	
	AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Air Quality	£1,086,000	£1,086,000	£1,086,000	£1,086,000
Noise	-£186,000	-£186,000	-£186,000	-£186,000
Accidents	£9,714,000	£9,714,000	£9,714,000	£9,714,000
Greenhouse Gases	£869,000	£1,478,000	£661,000	£1,157,000
Economic Efficiency: Consumer Users (Commuting)	£11,093,000	£13,816,000	£9,455,000	£11,778,000
Economic Efficiency: Consumer Users (Other)	£20,874,000	£40,232,000	£17,771,000	£34,312,000
Economic Efficiency: Business Users and Providers	£11,761,000	£21,542,000	£10,271,000	£18,846,000
Wider Public Finances (Indirect Tax Revenues)	-£2,034,000	-£3,470,000	-£1,610,000	-£2,813,000
Present Value of Benefits (PVB)	£53,177,000	£84,212,000	£47,162,000	£73,894,000
Present Value of Costs (PVC)	£14,419,000	£14,419,000	£14,083,000	£14,083,000
OVERALL IMPACTS				
Net Present Value (NPV)	£38,758,000	£69,793,000	£33,079,000	£59,811,000
Initial Benefit to Cost Ratio (BCR)	**3.7**	**5.8**	**3.3**	**5.2**

4.7.6. The information in Table 4-19 shows that the Initial BCR of the Core Growth Scenario (v1.7) of the scheme, based on standard monetised values, is **3.7** for the "AM, IP and PM" and **5.8** for the "AM, IP, PM, OP and WE" assessment. This represents the benefits for the core elements of the scheme and is considered **High** and **Very High** value for money respectively according to DfT guidance.

4.7.7. The Initial BCR of the Core Growth Scenario (OBR sensitivity) of the scheme, based on standard monetised values, is **3.3** for the "AM, IP and PM" and **5.2** for the "AM, IP, PM, OP and WE" assessment. This represents the benefits for the core elements of the scheme and is considered **High** and **Very High** value for money respectively according to DfT guidance.

Table 4-20 - Analysis of Monetised Costs and Benefits (AMCB) for the High Growth Scenario

Item	High Growth Run (1.7)		High Growth OBR Sensitivity Run (1.14)	
	AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Air Quality	£1,086,000	£1,086,000	£1,086,000	£1,086,000
Noise	-£186,000	-£186,000	-£186,000	-£186,000
Accidents	£9,714,000	£9,714,000	£9,714,000	£9,714,000
Greenhouse Gases	£941,000	£1,578,000	£712,000	£1,223,000
Economic Efficiency: Consumer Users (Commuting)	£12,099,000	£14,885,000	£10,315,000	£12,684,000
Economic Efficiency: Consumer Users (Other)	£21,961,000	£41,758,000	£18,689,000	£35,586,000
Economic Efficiency: Business Users and Providers	£12,431,000	£22,278,000	£10,838,000	£19,476,000
Wider Public Finances (Indirect Tax Revenues)	-£2,223,000	-£3,715,000	-£1,734,000	-£2,966,000
Present Value of Benefits (PVB)	£55,823,000	£87,398,000	£49,434,000	£76,617,000
Present Value of Costs (PVC)	£14,419,000	£14,419,000	£14,083,000	£14,083,000
OVERALL IMPACTS				
Net Present Value (NPV)	£41,404,000	£72,979,000	£35,351,000	£62,534,000
Initial Benefit to Cost Ratio (BCR)	**3.9**	**6.1**	**3.5**	**5.4**

4.7.8. The information in Table 4-20 shows that the Initial BCR of the High Growth Scenario (v1.7) of the scheme, based on standard monetised values, is **3.9** for the "AM, IP and PM" and **6.1** for the "AM, IP, PM, OP and WE" assessment, which is considered **High** and **Very High** value for money respectively according to DfT guidance.

4.7.9. The Initial BCR of the High Growth Scenario (OBR sensitivity) of the scheme, based on standard monetised values, is **3.5** for the "AM, IP and PM" and **5.4** for the "AM, IP, PM, OP and WE" assessment, which represents **High** and **Very High** value for money respectively according to DfT guidance.

Table 4-21 - Analysis of Monetised Costs and Benefits (AMCB) for the Low Growth Scenario

Item	Low Growth Run (1.7)		Low Growth OBR Sensitivity Run (1.14)	
	AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Air Quality	£1,086,000	£1,086,000	£1,086,000	£1,086,000
Noise	-£186,000	-£186,000	-£186,000	-£186,000
Accidents	£9,714,000	£9,714,000	£9,714,000	£9,714,000
Greenhouse Gases	£772,000	£1,342,000	£616,000	£1,081,000
Economic Efficiency: Consumer Users (Commuting)	£9,975,000	£12,608,000	£8,577,000	£10,823,000
Economic Efficiency: Consumer Users (Other)	£18,163,000	£36,540,000	£15,564,000	£31,276,000
Economic Efficiency: Business Users and Providers	£11,227,000	£20,954,000	£9,866,000	£18,399,000
Wider Public Finances (Indirect Tax Revenues)	-£1,828,000	-£3,167,000	-£1,516,000	-£2,644,000

Present Value of Benefits (PVB)	£48,923,000	£78,891,000	£43,721,000	£69,549,000
Present Value of Costs (PVC)	£14,419,000	£14,419,000	£14,083,000	£14,083,000
OVERALL IMPACTS				
Net Present Value (NPV)	£34,504,000	£64,472,000	£29,638,000	£55,466,000
Initial Benefit to Cost Ratio (BCR)	**3.4**	**5.5**	**3.1**	**4.9**

4.7.10. The information in Table 4-21Table 4-20 shows that the Initial BCR of the Low Growth Scenario (v1.7) of the scheme, is **3.4** for the "AM, IP and PM" and **5.5** for the "AM, IP, PM, OP and WE" assessment, which is **High** and **Very High** value for money respectively according to DfT guidance.

4.7.11. The Initial BCR of the Low Growth Scenario (OBR sensitivity) of the scheme, based on standard monetised values, is **3.1** for the "AM, IP and PM" and **4.9** for the "AM, IP, PM, OP and WE" assessment, which represents **High** and **Very High** value for money respectively according to DfT guidance.

4.7.12. The DfT guidance recommends that this Initial BCR be modified to include additional elements from the AST to create an Adjusted BCR. Following DfT guidance, the monetised values to be extracted from the AST are set out in Table 4-22, The Adjusted BCR for the Core Growth Scenario (v1.7) is increased to **3.8** and **6.0**, representing the wider benefits of the scheme. This is **High** and **Very High** value for money, respectively, according to DfT guidance. The OBR sensitivity adjusted BCR is increased to **3.4** and **5.4.**

4.7.13. Table 4-23 and The Adjusted BCR for the High Growth Scenario (v1.7) is increased to **4.0** and **6.2**, representing the wider benefits of the scheme. This is **High** and **Very High** value for money, respectively, according to DfT guidance. The OBR sensitivity adjusted BCR is increased to **3.6** and **5.6.**

4.7.14. Table 4-24.

Table 4-22 - Adjusted BCR Calculation for the Core Growth Scenario

Impact		Core Growth Run (1.7)		Core Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Initial PVB		£53,177,000	£84,212,000	£47,162,000	£73,894,000
Economy	Wider impacts	£1,176,000	£2,154,000	£1,027,000	£1,885,000
Adjusted PVB		£54,353,000	£86,366,000	£48,189,000	£75,779,000
Adjusted NPV		£39,934,000	£71,947,000	£34,106,000	£61,696,000
Adjusted BCR		**3.8**	**6.0**	**3.4**	**5.4**

4.7.15. The Adjusted BCR for the Core Growth Scenario (v1.7) is increased to **3.8** and **6.0**, representing the wider benefits of the scheme. This is **High** and **Very High** value for money, respectively, according to DfT guidance. The OBR sensitivity adjusted BCR is increased to **3.4** and **5.4.**

Table 4-23 - Adjusted BCR Calculation for the High Growth Scenario

Impact	High Growth Run (1.7)	High Growth OBR Sensitivity Run (1.14)

		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Initial PVB		£55,823,000	£87,398,000	£49,434,000	£76,617,000
Economy	Wider impacts	£1,243,000	£2,228,000	£1,084,000	£1,948,000
Adjusted PVB		£57,066,000	£89,626,000	£50,518,000	£78,565,000
Adjusted NPV		£42,647,000	£75,207,000	£36,435,000	£64,482,000
Adjusted BCR		**4.0**	**6.2**	**3.6**	**5.6**

4.7.16. The Adjusted BCR for the High Growth Scenario (v1.7) is increased to **4.0** and **6.2**, representing the wider benefits of the scheme. This is **High** and **Very High** value for money, respectively, according to DfT guidance. The OBR sensitivity adjusted BCR is increased to **3.6** and **5.6.**

Table 4-24 - Adjusted BCR Calculation for the Low Growth Scenario

Impact		Low Growth Run (1.7)		Low Growth OBR Sensitivity Run (1.14)	
		AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE
Initial PVB		£48,923,000	£78,891,000	£43,721,000	£69,549,000
Economy	Wider impacts	£1,123,000	£2,095,000	£987,000	£1,840,000
Adjusted PVB		£50,046,000	£80,986,000	£44,708,000	£71,389,000
Adjusted NPV		£35,627,000	£66,567,000	£30,625,000	£57,306,000
Adjusted BCR		**3.5**	**5.6**	**3.2**	**5.1**

4.7.17. The Adjusted BCR for the Low Growth Scenario (v1.7) is increased to **3.5** and **5.6**, representing the wider benefits of the scheme. This is **High** and **Very High** value for money, respectively, according to DfT guidance. The OBR sensitivity adjusted BCR is increased to **3.2** and **5.1.**

4.7.18. In considering overall value for money, attention must be paid to the Initial and Adjusted BCRs, as well as non-monetised impacts. The value for money statement provides a summary of these considerations and is presented in Table 4-25, Table 4-26 and Table 4-27.

Table 4-25 - Value for Money Statement for the Core Growth Scenario

	Core Growth Run (1.7)		Core Growth OBR Sensitivity Run (1.14)		Detail
	AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE	
Initial Benefit Cost Ratio (BCR)	3.7	5.8	3.3	5.2	Calculated using TAG guidance
Adjusted BCR	3.8	6.0	3.4	5.4	Includes wider impacts
Qualitative assessment	Largely beneficial				Key improvements in journey quality and community severance

Key risks, sensitivities	Risk pot of £1,892,671				Risk allowance quantified to an appropriate level for this stage of scheme design
Value for money category	High	Very High	High	Very High	Initial and Adjusted BCRs are in Very High category, which is supported by qualitative assessment

Table 4-26 - Value for Money Statement for the High Growth Scenario

	High Growth Run (1.7)		High Growth OBR Sensitivity Run (1.14)		Detail
	AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE	
Initial Benefit Cost Ratio (BCR)	3.9	6.1	3.5	5.4	Calculated using TAG guidance
Adjusted BCR	4.0	6.2	3.6	5.6	Includes wider impacts
Qualitative assessment	Largely beneficial				Key improvements in journey quality and community severance
Key risks, sensitivities	Risk pot of £1,892,671				Risk allowance quantified to an appropriate level for this stage of scheme design
Value for money category	High	Very High	High	Very High	Initial and Adjusted BCRs are in Very High category, which is supported by qualitative assessment

Table 4-27 - Value for Money Statement for the Low Growth Scenario

	Low Growth Run (1.7)		Low Growth OBR Sensitivity Run (1.14)		Detail
	AM, IP and PM	AM, IP, PM, OP and WE	AM, IP and PM	AM, IP, PM, OP and WE	
Initial Benefit Cost Ratio (BCR)	3.4	5.5	3.1	4.9	Calculated using TAG guidance
Adjusted BCR	3.5	5.6	3.2	5.1	Includes wider impacts
Qualitative assessment	Largely beneficial				Key improvements in journey quality and community severance

Key risks, sensitivities	Risk pot of £1,892,671				Risk allowance quantified to an appropriate level for this stage of scheme design
Value for money category	High	Very High	High	Very High	Initial and Adjusted BCRs are in Very High category, which is supported by qualitative assessment

4.7.19. The information presented in the economic case indicates that Lyminster Bypass (North) is considered **High** value for money.

5 FINANCIAL CASE

5.1 INTRODUCTION

5.1.1. To determine the affordability of Lyminster Bypass (North), a target cost has been determined following completion of the detailed design. The information presented in this section demonstrates that further funding is required for the scheme.

5.1.2. Information is presented below on the following:

- Costs
- Budgets / funding cover

5.2 COSTS

5.2.1. Cost estimates have been prepared broadly in accordance with the guidance presented in TAG Unit A1-2. The cost pro-forma is included in Appendix D and summarised in Table 5-1. Construction costs are based on latest information supplied by the contractor (Jackson Civil Engineering), plus spend incurred to date on design and preparatory work.

Table 5-1 - Summary Scheme Costs (2020 Q3 Prices)

Cost Element	Cost
Design Costs	£2,293,250
Construction Costs	£15,529,306
Additional Consultant Fees	£294,337
Cost Consultants	£136,149
WSCC Overheads	£320,488
Land Acquisition	£605,030
Utilities Diversions	£95,696
Risk	£1,892,671
Inflation	£467,082
TOTAL	**£21,634,009**

5.2.2. In keeping with guidance presented in TAG, cost estimates associated with Part 1 Claims have been excluded, and no allowance has been made for Optimism Bias in the Financial Case.

5.2.3. Costs associated with scheme maintenance and monitoring have not been included at this stage. These are not anticipated to be significant and will be funded through WSCC's maintenance budget.

5.3 BUDGET / FUNDING COVER

5.3.1. As shown in Table 5-1, the estimated scheme cost in current prices is £21.6m. Funding sources are shown in Table 5-2.

5.3.2. Section 106 contributions amounting to £3.76m have been earmarked for this scheme under various agreements.

5.3.3. £2.29m of the £3.76m S106 funding has been received and is available to be spent on the scheme. Legal agreements are in place to receive the remaining £1.58m of S106 funding from the developers, which will be due once the 'triggers' in the payment mechanism have been reached. However, in order to ensure timely delivery of the scheme, WSCC has decided to provide forward funding for the remaining £1.58m S106 contributions and this is included in the Council's Capital Programme approved by the County Council on 14th February 2020. This is detailed in the programme profile and funding stream provided in the table below.

Table 5-2 - Funding Sources

Source	Total	Status
S106 Contributions	£3.76m	£2.54m of this amount will be forward funded by WSCC
Coast to Capital LEP	£3.00m	
WSCC	£3.08m	
DfT	£11.79m	The subject of this Transport Business Case
TOTAL	**£21.63m**	

5.3.4. Annual budget requirements have been reviewed against funding streams to ensure that the scheme is affordable in each year of its construction. The annual budget cover is shown in Table 5-3.

Table 5-3 - Annual Budget Cover (2020 Prices)

FY	Cost	S106	LEP	DfT	WSCC
2013-14	*£351,000*	£351,000			
2014-15	*£332,000*	£173,000			£159,000
2015-16	*£49,000*		£49,000		
2016-17	*£291,000*		£291,000		
2017-18	*£936,000*		£908,000		£28,000
2018-19	*£702,000*		£702,000		
2019-20	*£506,000*		£506,000		
2020-21	*£1,025,000*		£544,000		£481,000
2021-22	*£2,276,000*	£1,766,000		£510,000	
2022-23	*£12,349,000*	£1,471,000		£10,878,000	
2023-24	*£2,817,000*			£404,000	£2,413,000
TOTAL	**£21,634,000**	**£3,761,000**	**£3,000,000**	**£11,792,000**	**£3,081,000**

6 COMMERCIAL CASE

6.1 INTRODUCTION

6.1.1. The commercial case provides evidence of the commercial viability of the project and the procurement strategy adopted. A procurement workshop was held 29 April 2014 with representatives from relevant departments within WSCC. The commercial case has been compiled based on the outcomes of this workshop and information presented subsequently by each department.

6.1.2. Information is presented below on the following:

- Output based specification
- Procurement strategy
- Sourcing options
- Payment mechanisms
- Pricing framework and charging mechanisms
- Risk allocation and transfer
- Contract length
- Human resource issues
- Contract management

6.2 OUTPUT BASED SPECIFICATION

6.2.1. West Sussex County Council is promoting the delivery of Lyminster Bypass (North), which involves the design and construction of a new bypass of the A284 Lyminster Road between Lyminster village and Toddington Nurseries to the north of Littlehampton. It will form the northern section of a new 1.8km combined bypass of the A284 between Lyminster village and the A259 Worthing Rd to the south, bridging the railway line at Toddington. Lyminster Bypass (South) (between A259 and Toddington Nurseries) is being delivered by private developers as part of the North Littlehampton Strategic Development Location, as shown in Figure 2-1.

6.2.2. Lyminster Bypass (North) is approximately 1.1km in length and is shown on Figure 3-6 above and it covers an approximate site area of 4.7ha. At its northern extent, the Lyminster Bypass (North) will incorporate a junction to serve the existing A284 Lyminster Road. The junction will branch off Lyminster Bypass (North), north of the residential properties on the eastern side of the A284.

6.2.3. Lyminster Bypass (North) will comprise a new 7.3m wide carriageway with 1.0m hard strips either side. A 3m wide shared cycleway / footway will run from the northern end of the scheme along the west side of the carriageway to reach a signalised Pegasus crossing. The Pegasus crossing will provide a safe crossing point for cyclists, pedestrians and equestrians in addition to ensuring the continuity of the existing bridleway between Lyminster and Poling. From the crossing, the shared cycleway / footway will continue southwards down the east side of the road to link to similar facilities further south and continuing into Littlehampton. A 2.5m grassed verge will be provided on the opposite side of the carriageway apart from along the length of the viaduct. A priority-controlled junction will link the existing A284 to the new road.

6.2.4. Lyminster Bypass (North) will have a speed limit of 50mph reducing to 40mph towards the northern end to match the existing 40mph speed limit in this location. At the southern end, the speed limit will reduce to 30mph on the approach to the roundabout which is due to be constructed as part of the Lyminster Bypass (South) works. This change in speed limit will be just beyond the limit of the proposed scheme.

6.2.5. From the southern end, Lyminster Bypass (North) will be approximately at grade until it reaches the southern limit of the Black Ditch flood plain. From this point, the scheme will be constructed on a 225m long viaduct which will span the entirety of the Black Ditch flood plain. At the northern extent of the flood plain, the road will continue on an embankment. The road will be above the existing ground level until reaching the location of the Pegasus crossing which is approximately at-grade. From the crossing heading north, the road will be in a slight cutting before reverting once more to an embankment as it passes the new junction with the existing A284 and crosses Brookfield Stream.

6.2.6. The viaduct will be a piled structure with piers at 20m centres. The surface of the viaduct will sit approximately 4.0 – 4.5m above existing ground level. The viaduct will have a plain concrete finish and steel parapets either side to protect users.

6.2.7. As noted previously, Black Ditch and its associated floodplain will be spanned with a 225m viaduct. Brookfield Stream will be crossed with a replacement enlarged and extended culvert. Surface water run-off from the road will drain into these two watercourses with attenuation provided to restrict the rate of discharge of the surface water to greenfield run-off rates. South of Black Ditch, cellular storage will be used as attenuation and prior to discharge into Black Ditch, this surface water run-off will pass through a wetland area located to the east of the viaduct.

6.2.8. This feature will provide water polishing with the added benefit of encouraging biodiversity. The section of road north of Black Ditch up to the Pegasus crossing will drain into a swale running along the eastern side of the road achieving both attenuation and water quality objectives. From the Pegasus crossing to Brookfield Stream, surface water will discharge to a swale and into a dry balancing pond located to the east of the road prior to draining into the watercourse. Surface water from the section of road north of Brookfield Stream will discharge directly into the watercourse as is the current situation.

6.2.9. Limited street lighting will be required for safety reasons in the vicinity of the junction with the existing A284 and the Pegasus crossing with further lighting along the southern section on the approach to the roundabout.

6.2.10. Ecological mitigation will form part of the scheme with badger crossings, additional water vole habitat, bat and bird boxes.

6.2.11. Noise mitigation measures are proposed. These include a 2.5m high noise fence to be constructed from the existing Bridleway along the road to the new junction and back towards the boundary with Wolstanton House. It will also be the intention to surface the proposed road in a low noise surface along its entire length. This surfacing will continue beyond the extent of the new road up to the Brookfields property.

6.3 PROCUREMENT STRATEGY

6.3.1. The aim of a procurement strategy is to achieve the optimum balance of risk, control and cost certainty for a particular project and this procurement strategy, therefore, relates to Lyminster Bypass (North) only.

Procurement Rules

6.3.2. The European public contracts directive (2004/18/EC) applies to public authorities, including, local authorities. The directives set out detailed procedures for the award of contracts whose value equals or exceeds specific thresholds. The current construction cost for the scheme is £15.5m as compared to the current threshold for works. Therefore, the EU Regulations apply to Lyminster Bypass (North).

6.3.3. The WSCC Standing Orders on Procurement and Contracts (May 2013) require that contracts for services, supplies or works, over the financial thresholds specified in the EU Regulations must be conducted as set out in the EU Regulations. They also require that procurements must be conducted in accordance with Local Government Acts 1988 and 1999 (relating to the application of non-commercial considerations) and all relevant subordinate legislation relating to them. Where EU Regulations apply, they apply in addition to the WSCC Standing Orders and override Standing Orders in cases of conflict.

6.3.4. A soft market engagement exercise was held in January 2015, which provided the opportunity to assess the market's likely response to the contract models proposed for tender. A total of 10 highways consultants and contractors attended the event and provided valuable input into the procurement process.

Procurement Process

6.3.5. An OJEU Notice for the D&B framework was published on 27th May 2015, and this resulted in 56 expressions of interest. From that WSCC received completed pre-qualification questionnaires (PQQs) from a total of 13 contractors. Following an assessment of the PQQs, an Invitation to Tender (ITT) was issued to 9 prequalified contractors on 22nd June 2015. All 9 contractors submitted their tenders on 5th October 2015, and these tenders were assessed by WSCC with 4 Contractors gaining a place on the Design and Build Lot 2 Framework relevant to Lyminster Bypass (North). One of these Contractors was Carillion who are no longer trading. The Design and Build Contract for Lyminster Bypass (North) was a call-off scheme linked to the Framework and was awarded to Jackson Civil Engineering on 13th April 2016 although due to issues with the delivery of the southern section of the bypass, detailed design did not commence until March 2017.

6.4 PRICING FRAMEWORK AND CHARGING MECHANISMS

6.4.1. The WSCC Standing Orders specify that the Lowest Price or Most Economically Advantageous Tender (MEAT) criteria shall be used when the Council is buying. Owing to the fact that quality was a very important consideration for Lyminster Bypass (North) scheme, it was proposed to use the MEAT criteria in the evaluation of tenders for the Framework. Factors evaluated included the tenderer's capacity, capability, stability, experience and strength of their supply chain plus their profit, fees, overheads and their other costed proposals (e.g. the cost of detailed design) as appropriate. The precise criteria and the methodology for applying them was made available to contractors with tender documents.

6.4.2. The contractor was selected on a combination of qualitative (60%) and price (40%) criteria, the latter including profit, overhead and pre-construction phase fees.

6.5 RISK ALLOCATION AND TRANSFER

6.5.1. The risks associated with the project have been considered and included in the project risk register (included in Appendix C), which has been updated regularly through the project life cycle. The risk register was considered as part of the preparation of the detailed procurement strategy, and those risks that are best managed by the contractor were allocated to be priced by the contractor accordingly. Risks best managed by WSCC were retained and excluded from the contract.

6.6 CONTRACT LENGTH

6.6.1. The Framework will be available for six years as determined by EU regulations.

6.6.2. For Lyminster Bypass (North), a two-stage contract strategy has been adopted. In stage 1, the successful D&B Contractor team were appointed to undertake the detailed design of the scheme on the basis of a Limited Instruction to Proceed On completion of detailed design and subject to the Contractor meeting WSCC's stated outcomes and cost benchmarks, the Contractor will proceed to the second stage involving the construction of the scheme on an NEC Engineering and Construction Contract (ECC) option C (target cost contract with activity schedule).

6.6.3. The contract is expected to run until spring 2024.

6.7 HUMAN RESOURCE ISSUES

6.7.1. The project will be delivered by WSCC in partnership with the appointed contractor. There are therefore no implications with regards to people management, trade unions, or TUPE regulations.

6.8 CONTRACT MANAGEMENT

6.8.1. Design, procurement, and construction supervision will be managed by West Sussex County Council in conjunction with the Contractor (Jackson Civil Engineering) and appointed Consultant for NEC3 Project Management. The NEC3 Project Management will be provided by the consultant (Provelio) appointed under the Professional Services Contract Lot 2.

6.8.2. The Principal Designer at Construction will be the appointed Contractor, Jackson Civil Engineering.

7 MANAGEMENT CASE

7.1 INTRODUCTION

7.1.1. The Management case sets out how the scheme will be delivered and managed, with measures to manage and apportion risk clearly defined.

7.1.2. Information is presented below on the following:

- Evidence of similar projects
- Programme / project dependencies
- Governance, organisational structure and roles
- Programme / project plan
- Assurance and approvals plan
- Communications and stakeholder management
- Programme / project reporting
- Risk management strategy
- Benefits realisation plan
- Monitoring and evaluation
- Management Options

7.2 EVIDENCE OF SIMILAR PROJECTS

7.2.1. In 2016 WSCC implemented a suite of frameworks related to highways construction and professional services highways. This was in recognition of the demand across the country for contractors and consultants as a result of increased national investment of infrastructure, and WSCC recognised that a long-term relationship with these parties was essential to ensure successful delivery of the major projects programme and to be seen as a 'client of choice'.

7.2.2. The WSCC frameworks have been successfully employed for a number of the major projects associated with LEP funding including Worthing Montague Place public realm scheme (c£1.3m) NCN2 major cycleway (c£2m) and the non- LEP Broadbridge Heath roundabouts (c£3m). The frameworks have also successfully awarded design-and-build contracts for the Littlehampton A259 widening scheme (c£26m), the A29 realignment (c£12m) as well as the Burgess Hill A2300 (c£23m). As a result, WSCC has continued to learn from all of these projects. The A2300 is the most advanced (commenced on site April 2020) and the key lessons learnt and employed are as follows:

- Early use of cost consultant.

  WSCC created a Lot under the professional services framework to allow commissioning of expertise in managing the NEC contracts and provide cost consultancy expertise that has previously been difficult to resource. WSCC has learnt to award these commissions as early as possible in the process and ideally prior to award of the design and build process. This has helped manage budget and costs expectations and provided robust challenge and scrutiny of contractors forecast of final cost.
- Employing a dedicated NEC Project Manager through framework.

  Lot 2 of the professional services framework exists purely for this reason and has greatly assisted the management of the complexities managing an NEC contract.

- Using NEC supervisor.

  Earlier schemes delivered through the frameworks did not have a dedicated NEC supervisor which led to poor communication in the construction phase. There is now a dedicated and very experienced NEC site supervisor who provides a communication conduit, alongside robust scrutiny and challenge during construction activities.
- Incorporating communications strategy within contract documents.

  Managing the communications as purely a client role during the construction phase is cumbersome and inefficient, when most of the messages and the owner of the solution is with the contractor. For the A2300 responsibilities defined in the communications strategy were incorporated within the contract documents.
- Using delivery group forum to manage developers and their dependencies.

  Many schemes in the major projects programme have co-dependencies with developments and developers and WSCC has introduced a model of forums consisting of all key parties to a scheme (developers, their contractors and consultants, WSCC development control teams, streetworks teams for defining roadspace and project management team) to build relationships, trust and maintain full communication in order to manage and mitigate all risks arising from a multi-party delivery.
- Management of subcontractors.

  Contractors' management of supply chains and the supply chain's performance has been seen as a root-cause of some issues including delays and reputational issues. By incorporating the use of the dedicated NEC supervisor as well as full NEC governance this issue is being mitigated.
- Using a Design and Build model for major projects.

  The design and build contract model, that is a principle of the construction frameworks and employed on all major highway projects over £2m has been very beneficial in allowing for Early Contractor Involvement and establishing the buildability and viability of the designs prior to start of construction and providing cost certainty.

7.3 PROGRAMME / PROJECT DEPENDENCIES

7.3.1. Lyminster Bypass (South) is being delivered as part of the North Littlehampton SDL scheme, so the timing of this is important for completing Lyminster Bypass (North) covered by this business case The developers' current proposals are for the southern bypass to be open in winter 2021. Lyminster Bypass (North) is dependent on Lyminster Bypass (South) during its operational phase following construction, but it is not fully dependent for the construction phase. The current proposal is that construction materials for Lyminster Bypass (North) will be brought to site via Lyminster Bypass (South), although there are contingencies for alternative routes should there be any further delay to the developer programme.

7.4 GOVERNANCE, ORGANISATIONAL STRUCTURE AND ROLES

7.4.1. Owing to the scale of the scheme, a Project Board has been set up to oversee its delivery. The project management structure for the scheme is as shown in Figure 7-1.

7.4.2. Members of the project board are set out in Table 7-1.

Table 7-1 - Project Board Membership

Name	Role	Organisation
Matt Davey	Senior Responsible Officer	Director of Highways, Transport and Planning, WSCC
Darryl Hemmings	Project Sponsor	Transport Policy and Planning Manager, WSCC
Karl Roberts	Senior User	Director of Place, Arun District Council
Cali Gasson	Senior User	Growth Deal Project Manager, Coast to Capital LEP
Alex Sharkey	Senior Supplier and Due Diligence	Manager, Highway Projects, WSCC
Mark Martin	Project Manager	Major Projects, WSCC
Alan Cowan	Senior Supplier	Programme Manager, WSCC
Alex Hall	Senior Supplier	Senior Finance Officer, WSCC

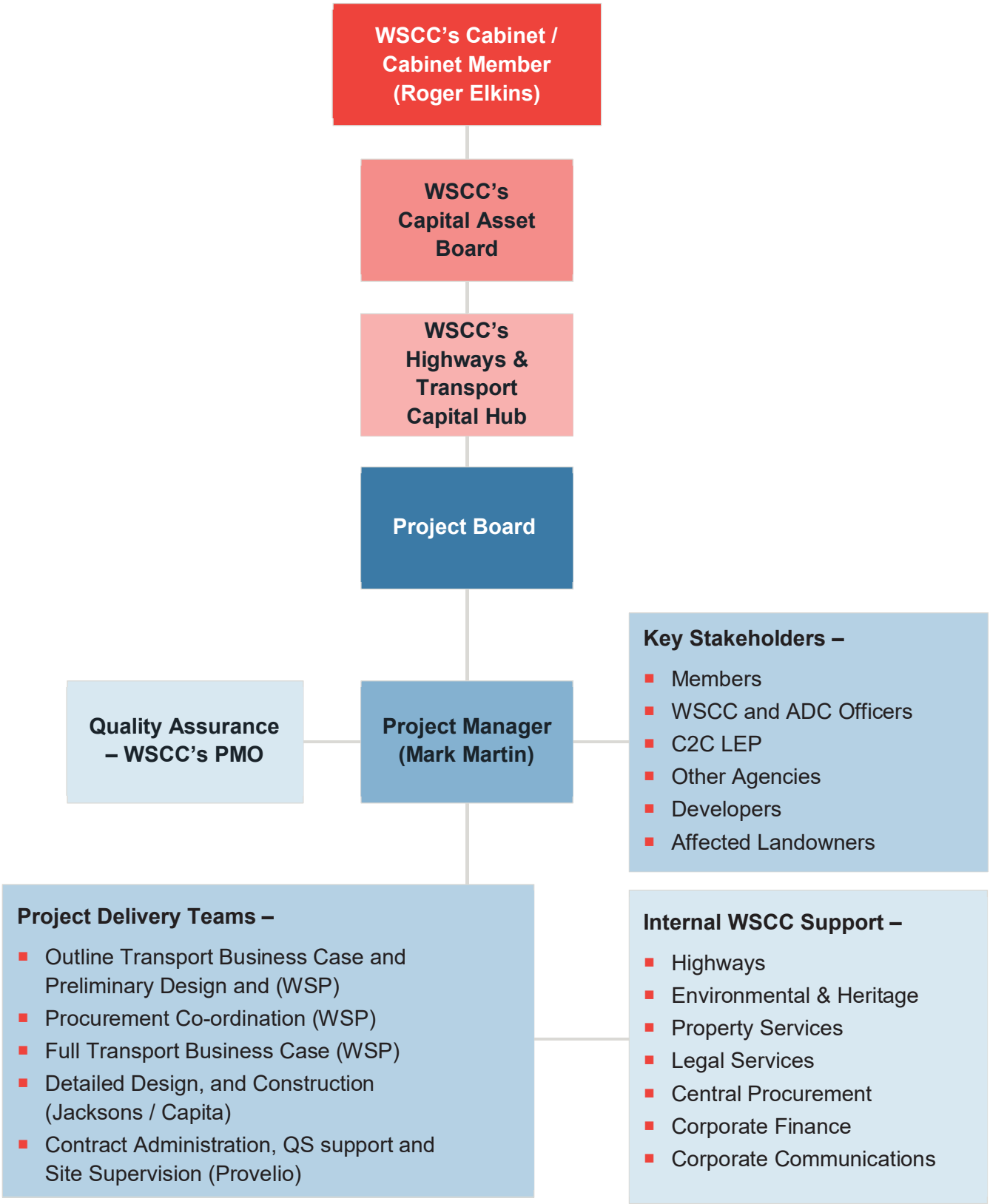

Figure 7-1 - Project Management Structure

7.4.3. The responsibilities of the Project Board include:

- Ensuring the project is, and remains, aligned with its objectives and other strategic policies.
- Monitoring progress, timescales and costs at a strategic level
- Contributing to, and signing off of key project management documents and project level plans
- Reviewing each completed stage and approving progress to the next
- Approving Exception Reports including authorizing any major deviation from the agreed Project (or Stage) Plans
- Arbitrating on any conflicts within the project including negotiating a solution to any problems between the project and any third parties
- Ensuring the Project Benefits can be, and are, delivered by the project.
- Approving Project Closure

7.4.4. The Project Board represents three areas of interest as follows:

- **Executive**: Ultimately accountable for the delivery of the scheme, supported by the Senior Suppliers and Senior User.
- **Senior User**: Represents the interests of the end-users of the scheme. This role is currently occupied by a representative of Arun District Council. However, it is expected to revert to WSCC Asset Management as the scheme progresses towards implementation
- **Senior Suppliers**: Responsible for the design, facilitating, funding, procuring and building of the scheme.

Senior Responsible Officer

7.4.5. The Senior Responsible Officer is accountable for the delivery of the scheme. He has the following responsibilities:

- Chairing project board meetings;
- Championing the scheme to stakeholders and senior management;
- Approval of the Project Inception Document;
- Approval of major changes to scope, cost and programme; and responsible for the overall scheme funding.
- The SRO is also the Director of Highways, Transport and Planning and as such chairs the Highways Capital Hub meetings that are held monthly and monitor the Capital expenditure of the entire Highways programme. The Project Board report to Capital Hub monthly via Highlight Reports and the Capital Hub reports to WSCC Cabinet.

Project Manager

7.4.6. The Project Manager is the individual who is directly charged with delivering the scheme. The Project Manager leads and manages the project teams and runs the project on a day-to-day basis. The specific responsibilities of the project manager include:

- Preparing and maintaining the project initiation document, stage and exception plans, as required.
- Ensuring that risks are identified, recorded, managed and regularly reviewed.
- Authorising work packages following stage approval by the Project Board.

- Ensuring that the scheme is delivered to specification, on time and to cost within tolerances agreed by the Project Board.
- Escalating project issues where any corrective actions will result in the stage or scheme going beyond agreed tolerance margins.
- Reporting through agreed reporting lines on project progress through highlight reports and stage assessments, including budget and expenditure.
- Conducting end project evaluation to assess how well the project was managed and preparing and end-project report.
- Preparing a Lessons Learned Report.
- Preparing any follow-on action recommendations as required.

7.5 PROGRAMME / PROJECT PLAN

7.5.1. Owing to project constraints, a three-stage approach is proposed for the delivery of the scheme as follows:

Stage One

- Complete preliminary designs and non-statutory environmental statement. This has been completed.
- Complete Transport Business Case and obtain approval for further funding from the Department for Transport (DfT).
- Obtain planning consent for the scheme. This was granted on 26th March 2019, with the decision published 9th May 2019 following confirmation that the scheme would not be called in by the Secretary of State.

Stage Two

- Undertake land acquisition by negotiation and CPO. This process has started.
- Undertake detailed design, which was completed in April 2019. Obtain and agree target cost following completion of the CPO process

Stage Three

- Proceed to construction by February 2022 subject to funding and land acquisition. The timelines are detailed in the scheme programme in **Appendix E**.

7.6 ASSURANCE AND APPROVALS PLAN

7.6.1. Controls are being implemented during the scheme to ensure that it stays in line with the expectations defined in the Project Initiation Document, the current Stage Plan and this Transport Business Case.

7.6.2. The scheme will be subject to Gateway Reviews in accordance with the WSCC Gateway Review Process by the Project Board at key decision points. These reviews would, among others:

- Enable the Project Board to assess the viability of the scheme at regular intervals, rather than let it run on in an uncontrolled manner.
- Ensure that key decisions are made prior to the detailed work needed to implement them.
- Clarify the impact of any identified external influences on the scheme

7.6.3. The Project Manager will endeavour to contain the cost of any commission or contract works within the approved estimate, subject to a 10% or £20,000 tolerance (whichever is the lesser). The Project Manager will notify the Project Board as soon as it becomes evident that the approved estimate may or will be varied by more than the tolerance and advise the value of the variation, together with options and recommendations to bring the commission back within estimate where appropriate.

7.6.4. Cabinet Member approval has also been sought at appropriate times in order to undertake Statutory Procedures, including the making of a Planning Application and Land Acquisition.

7.7 COMMUNICATIONS AND STAKEHOLDER MANAGEMENT

7.7.1. A consultation and communication strategy was developed for the scheme, which seeks to achieve the following overarching aims with regard to the pre-planning application consultation:

- Meeting the requirements of the Localism Act and WSCC's Statement of Community Involvement (SCI) which obligate developers/scheme promoters to consult with communities prior to submitting planning applications;
- Ensuring that all stakeholders are aware of, interested in, and able to contribute to the consultation;
- Enabling the local community to give timely feedback on the proposals so that the plans can be refined accordingly to take into account local opinion;
- Informing the final proposed design for the route and ensure that the design is supported by stakeholders and the wider community.

7.7.2. The consultation addressed various elements of the proposed scheme, such as the rationale for the bypass, junction design and carriageway width options, environmental and ecology issues.

7.7.3. John Hammond is the Communications Lead for the scheme.

7.7.4. As part of the Lyminster Bypass feasibility study carried out in 2012, statutory bodies and local councillors were consulted on the scheme. Arun District Council then consulted on the scheme as part of its Local Plan consultation in 2012

7.7.5. Public consultation on the proposed scheme was conducted in September 2014. This included the distribution of a leaflet to households, a series of public exhibitions and various communications activities to raise awareness of the consultation. Information was also available at Littlehampton and Arundel libraries and on WSCC's website. A questionnaire was made available for residents to complete over the period to Friday 26 September to share their views on the proposed scheme. Exhibitions were held in Lyminster on 12-13 September 2014 and in Littlehampton on 16-17 September 2014, with a good attendance at each session. The results of the public consultation were analysed in autumn 2014 and have been used to inform the detailed scheme design.

7.7.6. Consultation has been ongoing with landowners, local residents, Lyminster and Crossbush Parish Council. Other parish councils, Littlehampton Town Council, local District and County Council members have been kept informed via the North Littlehampton Steering Group and the JEAAC H&T Sub-group.

7.8 PROGRAMME / PROJECT REPORTING

Project Acceptance Criteria

7.8.1. The Project acceptance criteria will generally be in accordance with the requirements of the Design Manual for Roads and Bridges (DMRB) as well other guidance from the DfT.

Quality Checking Process

7.8.2. A quality management system will be agreed and implemented for each stage of the scheme. Generally, the quality plan for each stage will describe techniques and standards to be applied during the project, and the various responsibilities for achieving the required quality levels.

Project Management Processes

7.8.3. WSCC is taking the lead role in the development, construction, operation and maintenance of Lyminster Bypass (North). To this end WSCC is responsible for all the project management processes involved in delivering the scheme (See 7.4 for further details of the project management processes).

Configuration Management

7.8.4. The Project Manager is responsible for configuration management ensuring that any changes are communicated to all parties to ensure a consistent design.

Change Management

7.8.5. The Project Board is responsible for approving or rejecting any requests for change falling outside agreed tolerance levels. The Board may either set new tolerance levels as long as they are within the constraints of the overall project budget or refer the matter back to corporate management for a decision.

7.9 RISK MANAGEMENT STRATEGY

7.9.1. Risk workshops have been undertaken over the course of the project, with results compiled into the Risk Register included in Appendix C. Risks are assessed on their likelihood and their severity, both with and without mitigation.

7.9.2. The risk register is reviewed at key project milestones with a risk specialist, with key risks reviewed at each Project Board meeting. This strategy has proven successful and will continue for the lifetime of the project.

7.10 BENEFITS REALISATION PLAN

7.10.1. Since the scheme is not expected to generate revenue, the benefits associated with the scheme will be social benefits, to be tracked as part of WSCC's ongoing monitoring programme. This is discussed below.

7.11 MONITORING AND EVALUATION

7.11.1. This section sets out how the performance of the scheme against objectives for project success will be monitored and assessed, to demonstrate the value for money for the funding of the scheme. These objectives relate to core economic objectives, changes in traffic flows, reductions in journey times and in variability of travel times, changes in noise and air quality levels at key locations, and highway safety.

Core Economic Objectives

7.11.2. A set of core economic objectives have been selected as metrics for assessing the impact of an intervention. These relate to the delivery of development at "impact sites", and are set as follows:

- Jobs connected to the intervention (Full-Time Equivalents).
- Commercial floorspace created (sqm, by class).
- Housing units starts.
- Housing units completed.

7.11.3. Impact sites are defined as those which have contributed to the intervention, even if planning consent has been granted without being conditional on the completion of the intervention. In this case, key developments that have contributed to the scheme are the North Littlehampton SDA and Courtwick Farm.

7.11.4. Annual monitoring reports are produced by Arun District Council setting out planning consents and completions within the District. These reports will be examined to check on the rate of delivery of the planned housing, commercial space and employment development at these core impact sites.

Traffic

7.11.5. An extensive programme of data collection was undertaken in September and October 2013 to establish the baseline traffic conditions. This included roadside interview surveys, automatic traffic counts, manual turning counts and journey time surveys. In addition, WSCC has permanent automatic traffic counters at key locations on main A class roads, including on the A284 between Lyminster and Crossbush and also on Ford Road. Highways England has TRADS sites on the A27.

7.11.6. For establishment of post-opening traffic flows and journey times, the survey of a selection of the key traffic data will be repeated. This will take place at least 12 months after the completion of the scheme to allow for establishment of more permanent traffic trends, once drivers have become used to the new routes and mapping and navigation aids have been updated to the new road's layout.

7.11.7. It will not be necessary to repeat all the survey locations which were required to build the East Arun model, but data will be collected on roads, where the model forecasting indicates that there may be significant changes to traffic flows, as well as on roads close to the new A284 road, to pick up any unforeseen changes. This is likely to include:

- The existing A284 corridor from the A27 to Littlehampton town centre.
- The new road alignments including Lyminster Bypass (North) itself and the developer delivered roads at Lyminster Bypass (South) and Fitzalan Road extension
- Junctions along the A259 Worthing Road
- Highdown Drive in Littlehampton
- Data from A27 TRADS sites east and west of Crossbush
- Data from permanent WSCC sites on A259 between Climping and Angmering, on A280 Water Lane near Angmering and on Ford Road

7.11.8. The WSCC permanent traffic count site on the A284 will be a key location for data collection before and after scheme construction. The site is located a few metres to the north of where the northern tie-in construction is shown to terminate; The counter produces classified vehicle data and speed data in addition to measuring the volume of traffic.

7.11.9. The surveys will pick up the combined effects of this scheme and the developer delivered roads, along with the build out of the strategic development sites, as the construction periods will run in parallel. It will not be possible to isolate the impact of Lyminster Bypass (North) alone. This also applies to all other indicators to be monitored.

Noise

7.11.10. Noise measurements have been undertaken at specified locations where properties could be affected and used with the traffic modelling to inform the noise modelling report. In order to capture robust data reflecting daily and seasonal variations and a range of weather conditions a longer-term noise survey would be required to highlight any instance of noise results crossing a specified threshold for intervention. In common with other measurements, it will not be possible to fully isolate changes in noise resulting from Lyminster Bypass (North) from those originating from Lyminster Bypass (South), as these will be constructed and opened over a parallel timescale. WSCC will consider the appropriate scale of noise monitoring to be undertaken and the criteria to be applied for this and other proposed highways and transport infrastructure schemes.

Air Quality

7.11.11. Arun District Council have been carrying out diffusion tube monitoring – a Screening assessment for 2012 reports annual NOx results for tubes on A259 Worthing Road at Cornfield Close and in Thatchway Close, just off A284 Wick Street in Littlehampton. The scheme is forecast to reduce traffic levels in Wick Street but may slightly increase traffic on A259 Worthing Road. Arun District Council has also installed a diffusion tube north of the proposed tie-in.

7.11.12. West Sussex County Council undertook 9 months of air quality monitoring prior to the submission of the planning application in November 2018.

7.11.13. West Sussex County Council has the use of a mobile Air Quality Lab, shared with other Local Authorities in Sussex who are members of the Sussex Air Quality Partnership. The lab is owned by Lewes District Council and its use will be booked at least six months ahead of time. This lab will be used to undertake suitable air quality measurements along the A284 corridor after implementation of the scheme, to ensure that short term air quality objectives are not being exceeded. The lab can measure NOx/NO2 and particulate matter. However, to ensure long-term objectives are not being exceeded, an annual mean would need to be measured. Annual means objectives are considered when assessing the impact of a scheme and are used to determine impacts and appropriate mitigation measures. This would be by installation of diffusion tubes at the same locations to assess the long-term nitrogen dioxide concentrations.

Journey Times

7.11.14. Journey time surveys will be undertaken equivalent to journey time route 2 from the September 2013 model data collection between Crossbush and Littlehampton Town Centre via the new road alignment. These will be compared to the 2013 journey time route 2 data between these points. The original data showed a lot of variability due to the effect of the railway level crossing on Lyminster Road at Wick, so it may be necessary to compare the data for the new road with not only average data from the route but with the average of the runs where the crossing was open and of the slower runs where the crossing gates were initially closed.

Road Traffic Collisions

7.11.15. WSCC has access to Road Traffic Collisions data supplied by Sussex Police. Data from this will be extracted annually to compare accident rates on major roads within a study area similar to that used for traffic flows. This comparison will be revisited once sufficient time has passed to obtain a three year post-opening rate. Statistics will be examined for:

- numbers of road collisions and KSI (Killed and seriously injured) rates per billion vehicle kilometres
- road collisions by vehicle type
- number and severity of casualties
- breakdown of casualties for vulnerable road users and others

7.12 MANAGEMENT OPTIONS

7.12.1. WSCC has a project board in place with sufficient processes to monitor and approve project development at key stages. This will continue throughout the life of the project. Given the organisational maturity of the WSCC Highways team and successful implementation of lessons learned on previous projects, no further management options are under consideration at this stage.

8 SUMMARY

8.1 BACKGROUND

8.1.1. This Transport Business Case presents the evidence base in favour of Lyminster Bypass (North), near Littlehampton in West Sussex. The document has been prepared in accordance with the Department for Transport guidance published in April 2013 on the five-business case model. This requires the following five cases to be considered:

- Strategic Case
- Economic Case
- Financial Case
- Commercial Case
- Management Case

8.2 TRANSPORT BUSINESS CASES

8.2.1. The Strategic case outlines the need for Lyminster Bypass (North). The primary need is to provide a high-quality route between the A27 and the A259 that avoids the sharp bends on the existing route and avoids the delays caused by the level crossing at Wick. This would make the Littlehampton area more attractive to developers, leading to local economic growth. The key stakeholders are set out, and the interactions with other schemes are discussed, particularly Lyminster Bypass (South) delivered as part of the North Littlehampton development.

8.2.2. The Economic case sets out the assessment of the benefits that the scheme is forecast to deliver to society as a whole. Over 60 years, the scheme is expected to generate benefits worth £48.2m, including £9.7m of safety benefits. The scheme generates a Benefit-Cost ratio of 3.3 so it is considered a high value for money scheme.

8.2.3. The Financial case provides a detailed cost estimate and a breakdown of how the scheme will be funded. The total scheme cost is expected to be £21.63m, of which £3.76m is Section 106 funding. £3.00m is Coast to Capital LEP funding, £11.79m is sought from DfT to complete the scheme, with the remaining £3.08m funded by WSCC.

8.2.4. The Commercial case considers the procurement of the scheme. A Design and Build procurement strategy through the restricted procedure was undertaken, with the preferred supplier determined through a 60% quality / 40% price split.

8.2.5. The Management case sets out the proposed project management procedures to be adopted throughout the life cycle of the project. The project management team is provided, with an explanation of roles and responsibilities. Measures have also been set out to ensure high quality and timely delivery. Stakeholder management and post-implementation assessment strategies are also discussed.

8.3 CONCLUSION

8.3.1. Lyminster Bypass (North) will generate substantial net benefits to the local economy, helping meet the objectives of all key stakeholders.

APPENDICES

Appendix A

APPRAISAL SUMMARY TABLE

Appraisal Summary Table

Date produced:	26 01 2021

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just over £11.8M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £2M	Value of journey time changes(£): £9,662,000 Net journey time changes (£): 0 to 2min £5,102,000; 2 to 5min £3,735,000; > 5min £825,000		£11,761,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed	Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.			£1,176,100	
Environmental	Noise	An assessment of the Noise impacts has been undertaken			£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken			£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -19189 Change in traded carbon over 60y (CO2e): -63		£869,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A	Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A	Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A	Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A	Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A	Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just under £32M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3.3M	Value of journey time changes(£): £28,613,000 Net journey time changes (£): 0 to 2min £11,712,000; 2 to 5min £12,259,000; > 5min £4,642,000		£31,967,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A	Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A	Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28	Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A	Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A	Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A	Neutral		
	Severance	The scheme will reduce local severance.	N/A	Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A	Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =		£14,419,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =		-£2,034,000	

Appraisal Summary Table

Date produced:	26 01 2021

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just over £21.5M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3.6M	Value of journey time changes(£): £17,935,000 Net journey time changes (£): 0 to 2min: £9,725,000; 2 to 5min: £7,385,000; > 5min: £825,000		£21,542,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed	Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.			£2,154,200	
Environmental	Noise	An assessment of the Noise impacts has been undertaken			£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken			£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -32696 Change in traded carbon over 60y (CO2e): -105		£1,478,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A	Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A	Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A	Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A	Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A	Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £54M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of under £5.8M	Value of journey time changes(£): £48,269,000 Net journey time changes (£): 0 to 2min: £18,957,000; 2 to 5min: £24,670,000; > 5min: £4,642,000		£54,048,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A	Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A	Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28	Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A	Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A	Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A	Neutral		
	Severance	The scheme will reduce local severance.	N/A	Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A	Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =		£14,419,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =		-£3,470,000	

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Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just under £10.3M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £1.9M	Value of journey time changes(£): £8,362,000 Net journey time changes (£): 0 to 2min: £4,441,000; 2 to 5min: £3,229,000; > 5min: £694,000		£10,271,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed	Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.			£1,027,000	
Environmental	Noise	An assessment of the Noise impacts has been undertaken			£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken			£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -14843 Change in traded carbon over 60y (CO2e): -178		£661,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A	Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A	Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A	Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A	Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A	Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £27.2M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3M	Value of journey time changes(£): £24,215,000 Net journey time changes (£): 0 to 2min: £9,994,000; 2 to 5min: £10,376,000; > 5min: £3,851,000		£27,226,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A	Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A	Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28	Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A	Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A	Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A	Neutral		
	Severance	The scheme will reduce local severance.	N/A	Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A	Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =		£14,083,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =		-£1,610,000	

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Organisation	SCC
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Impacts		Summary of key impacts	Assessment					
			Quantitative				Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just over £18.9M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of almost £3.3M	Value of journey time changes(£): £15,503,000 Net journey time changes (£) 0 to 2min: £8,451,000 | 2 to 5min: £6,361,000 | > 5min: £694,000					£18,846,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A				Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed				Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.						£1,885,000	
Environmental	Noise	An assessment of the Noise impacts has been undertaken						£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken						£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -26009 Change in traded carbon over 60y (CO2e): -307					£1,157,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A				Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A				Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A				Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A				Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A				Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £46.1M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of almost £5.3M	Value of journey time changes(£): £40,836,000 Net journey time changes (£) 0 to 2min: £16,139,000 | 2 to 5min: £20,866,000 | > 5min: £3,851,000					£46,090,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A				Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A				Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A				Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28				Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A				Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A				Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A				Neutral		
	Severance	The scheme will reduce local severance.	N/A				Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A				Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =					£14,083,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =					-£2,813,000	

Appraisal Summary Table

Date produced:	18 11 2020

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just over £12.4M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of under £2.3M	Value of journey time changes(£): £10,177,000 Net journey time changes (£): 0 to 2min: £6,822,000; 2 to 5min: £3,355,000; > 5min: £0		£12,431,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed	Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.			£1,243,100	
Environmental	Noise	An assessment of the Noise impacts has been undertaken			£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken			£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -19189 Change in traded carbon over 60y (CO2e): -63		£941,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A	Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A	Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A	Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A	Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A	Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £34M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3.8M	Value of journey time changes(£): £30,323,000 Net journey time changes (£): 0 to 2min: £18,711,000; 2 to 5min: £11,612,000; > 5min: £0		£34,060,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A	Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A	Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28	Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A	Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A	Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A	Neutral		
	Severance	The scheme will reduce local severance.	N/A	Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A	Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =		£14,419,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =		-£2,223,000	

Appraisal Summary Table

Date produced:	18 11 2020

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment		
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just under £22.3M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3.8M	Value of journey time changes(£): £18,457,000 Net journey time changes (£): 0 to 2min: £12,223,000; 2 to 5min: £6,234,000; > 5min: £0		£22,278,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed	Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.			£2,227,800	
Environmental	Noise	An assessment of the Noise impacts has been undertaken			£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken			£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -34897 Change in traded carbon over 60y (CO2e): -122		£1,578,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A	Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A	Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A	Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A	Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A	Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £56.6M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £6.3M	Value of journey time changes(£): £50,297,000 Net journey time changes (£): 0 to 2min: £28,878,000; 2 to 5min: £21,419,000; > 5min: £0		£56,643,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A	Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A	Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28	Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A	Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A	Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A	Neutral		
	Severance	The scheme will reduce local severance.	N/A	Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A	Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =		£14,419,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =		-£3,715,000	

Appraisal Summary Table

Date produced:	26 01 2021

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment				
			Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just over £10.8M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £2M	Value of journey time changes(£): £8,801,000 Net journey time changes (£): 0 to 2min £5,892,000; 2 to 5min £2,909,000; > 5min £0				£10,838,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A			Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed			Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.					£1,083,800	
Environmental	Noise	An assessment of the Noise impacts has been undertaken					£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken					£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -15981 Change in traded carbon over 60y (CO2e): -199				£712,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A			Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A			Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A			Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A			Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A			Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £29M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3.3M	Value of journey time changes(£): £25,672,000 Net journey time changes (£): 0 to 2min £15,829,000; 2 to 5min £9,843,000; > 5min £0				£29,004,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A			Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A			Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A			Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28			Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A			Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A			Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A			Neutral		
	Severance	The scheme will reduce local severance.	N/A			Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A			Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =				£14,083,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =				-£1,734,000	

Appraisal Summary Table

Date produced:	26 01 2021

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment				
			Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling almost £19.5M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3.5M	Value of journey time changes(£): £15,951,000 Net journey time changes (£): 0 to 2min £10,560,000; 2 to 5min £5,391,000; > 5min £0				£19,476,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A			Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed			Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.					£1,947,600	
Environmental	Noise	An assessment of the Noise impacts has been undertaken					£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken					£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -27450 Change in traded carbon over 60y (CO2e): -343				£1,223,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A			Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A			Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A			Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A			Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A			Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just under £48.3M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £5.7M	Value of journey time changes(£): £42,561,000 Net journey time changes (£): 0 to 2min £24,385,000; 2 to 5min £18,176,000; > 5min £0				£48,270,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A			Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A			Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A			Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28			Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A			Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A			Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A			Neutral		
	Severance	The scheme will reduce local severance.	N/A			Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A			Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =				£14,083,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =				-£2,966,000	

Appraisal Summary Table

Date produced:	26 01 2021

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment				
			Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just over £11.2M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of under £1.9M	Value of journey time changes(£): £9,374,000 Net journey time changes (£): 0 to 2min £5,498,000; 2 to 5min £3,876,000; > 5min £0				£11,227,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A			Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed			Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.					£1,122,700	
Environmental	Noise	An assessment of the Noise impacts has been undertaken					£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken					£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -17098 Change in traded carbon over 60y (CO2e): -58				£772,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A			Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A			Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A			Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A			Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A			Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £28.1M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3.1M	Value of journey time changes(£): £25,017,000 Net journey time changes (£): 0 to 2min £13,355,000; 2 to 5min £11,662,000; > 5min £0				£28,138,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A			Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A			Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A			Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28			Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A			Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A			Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A			Neutral		
	Severance	The scheme will reduce local severance.	N/A			Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A			Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =				£14,419,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =				-£1,828,000	

Appraisal Summary Table

Date produced:	26 01 2021

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment				
			Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just under £21M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3.2M	Value of journey time changes(£): £17,705,000 Net journey time changes (£): 0 to 2min £10,324,000; 2 to 5min £7,381,000; > 5min £0				£20,954,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A			Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed			Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.					£2,095,400	
Environmental	Noise	An assessment of the Noise impacts has been undertaken					£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken					£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -29685 Change in traded carbon over 60y (CO2e): -92				£1,342,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A			Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A			Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A			Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A			Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A			Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £49.1M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £5.3M	Value of journey time changes(£): £43,804,000 Net journey time changes (£): 0 to 2min £20,361,000; 2 to 5min £23,443,000; > 5min £0				£49,148,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A			Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A			Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A			Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28			Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A			Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A			Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A			Neutral		
	Severance	The scheme will reduce local severance.	N/A			Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A			Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =				£14,419,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =				-£3,167,000	

Appraisal Summary Table

Date produced:	26 01 2021

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling almost £9.9M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £1.7M	Value of journey time changes(£): £8,121,000 Net journey time changes (£): 0 to 2min: £4,771,000; 2 to 5min: £3,350,000; > 5min: £0		£9,866,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed	Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.			£986,600	
Environmental	Noise	An assessment of the Noise impacts has been undertaken			£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken			£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -13857 Change in traded carbon over 60y (CO2e): -170		£616,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A	Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A	Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A	Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A	Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A	Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £24.1M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of almost £2.9M	Value of journey time changes(£): £21,268,000 Net journey time changes (£): 0 to 2min: £11,395,000; 2 to 5min: £9,873,000; > 5min: £0		£24,141,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A	Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A	Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28	Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A	Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A	Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A	Neutral		
	Severance	The scheme will reduce local severance.	N/A	Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A	Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =		£14,083,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =		-£1,516,000	

Appraisal Summary Table

Date produced:	26 01 2021

Contact:	
Name	
Organisation	SCC
Role	Promoter/Official

Name of scheme:	A284 Lyminster
Description of scheme:	The A284 Lyminster Bypass scheme consists of a realignment of the A284 to the north of Littlehampton to provide a 1.8km bypass to the east of Lyminster and Wick villages, between a new junction on the A259 and connecting with the existing A284 at a point 600m south of the A27 at Crossbush. The proposed alignment bridges the West Coastway railway line at Toddington.

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme provides business user benefits, with nearly all of the benefits being from journey time savings totalling just under £18.4M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £3M	Value of journey time changes(£): £15,304,000 Net journey time changes (£): 0 to 2min: £8,939,000; 2 to 5min: £6,365,000; > 5min: £0		£18,399,000	
	Reliability impact on Business users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 with grade separation from the rail line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Regeneration	Slight to moderate beneficial impact is assumed due to enabling delivery of new housing and employment. .	Not Assessed	Slight to moderate beneficial		
	Wider Impacts	In line with WebTAG guidance 10% of Business User Benefits as a proxy for output change in imperfectly competitive markets on GDP.			£1,839,900	
Environmental	Noise	An assessment of the Noise impacts has been undertaken			£186,000	
	Air Quality	An assessment of the Air Quality impacts has been undertaken			£1,086,000	
	Greenhouse gases	Decrease in CO2e due to the new bypass offering a more direct and rail level crossing free route. (Values taken from TUBA Analysis)	Change in non-traded carbon over 60y (CO2e): -24313 Change in traded carbon over 60y (CO2e): -282		£1,081,000	
	Landscape	The Proposed Bypass is anticipated to result in adverse impacts on the greenfield character of the existing Site (including the loss of hedgerow sections, hedgerows with indivual trees and mature trees), setting of listed buildings within 500m of the Site, local landscape character, views from the South Downs National Park and nearby residential receptors as a result of construction traffic, compound location and construction activities. During operation, adverse impacts are anticipated on the greenfield character of the site, Lyminster Conservation Area, listed buildings within 500m, local landscape character, South Downs National Park and nearby residential and PROW receptors from increased traffic, lighting and signage. Potential slight beneficial impacts may occur on the setting of listed buildings and views from around Lyminster where the Proposed Bypass reduces traffic.	N/A	Moderate adverse to slight beneficial		
	Townscape	The main residential areas are located to the west within the village of Lyminster and to the south and west of the southern extent of the bypass within the north-west of Littlehampton.	N/A	Neutral		
	Historic Environment	Prior to mitigation, the Proposed Development has the potential for the loss or truncation of buried archaeological deposits. A suitable programme of investigation and mitigation (as defined by the NPPF) is considered sufficient following planning approval with West Sussex County Council. There is the potential for adverse impacts on built heritage assets including listed buildings and conservation areas. Construction works are anticipated to result in slight to moderate adverse impacts on the buried archaeological remains (should they be present). It is considered that the operational phase will result in slight to moderate adverse effects on built heritage features in the landscape during the operational phase.	N/A	Slight to moderate adverse		
	Biodiversity	Potential for neutral to moderate adverse impacts on protected species and BAP habitat. No potential impacts are considered likely on surrounding statutory or non-statutory sites.	N/A	Moderate adverse to neutral		
	Water Environment	The Proposed Bypass will result in the increase in impermeable surfaces through the construction of the alignment. This will result in an increase in surface water runoff and may also increase in the risk of potential contamination to surface waters.	N/A	Slight adverse to neutral		
Social	Commuting and Other users	The scheme provides Commuting and Other user benefits, with most of the benefits being from journey time savings totalling just over £42.1M in user benefits. This is however supported by reductions in vehicle operating costs, with a benefit of over £4.9M	Value of journey time changes(£): £37,172,000 Net journey time changes (£): 0 to 2min: £17,339,000; 2 to 5min: £19,833,000; > 5min: £0		£42,099,000	
	Reliability impact on Commuting and Other users	In qualitative terms, the addition of a new bypass, providing a new route between the A27 and A259 and bridges the West Coastway railway line, should significantly increase reliability to users. The existing route will also provide an alternative route during any incidents.	N/A	Moderate beneficial		
	Physical activity	The scheme should improve physical activity through the introduction of new footways and crossing points, along with a new bridge over the West Coastway railway line.	N/A	Slight beneficial		
	Journey quality	The scheme should improve journey quality between the A27 and A259 by creating a new more direct route, designed to modern standards and as a result of bridging the West Coastway railway line	N/A	Moderate beneficial		
	Accidents	COBALT has been used to assess the impact of the scheme on accidents. The scheme reduces the chance of an accident, largely due to the new high standard bypass design and associated reductions in queuing and congestion as a result of bridging the West Coastway railway line	Total Accidents Saved = 223 Total Casualties Saved by Scheme (Fatal) = 1 Total Casualties Saved by Scheme (Serious) = 28	Moderate beneficial	£9,714,000	
	Security	This scheme is not expected to change the level of security for general traffic, public transport passengers and freight.	N/A	Neutral		
	Access to services	This scheme is not expected to change provision, routings, frequencies or timings of current public transport services or waiting facilities or any impacts on accessibility to services.	N/A	Neutral		
	Affordability	This scheme is not expected to lead to extra charges to users (parking charges, public transport fare changes etc.). Some minor changes to fuel costs (due to reduced congestion and increased speeds) are expected.	N/A	Neutral		
	Severance	The scheme will reduce local severance.	N/A	Moderate beneficial		
	Option and non-use values	This scheme does not involve the loss or introduction of a new mode of transport.	N/A	Neutral		
Public Accounts	Cost to Broad Transport Budget	The scheme is to be funded with £3m from Coast to Capital LEP, £3.76m from S106 developer contributions £5.9m funded by WSCC and the remaining £8.5m sought from Transport for South East.	Present Value of Costs =		£14,083,000	
	Indirect Tax Revenues	There would be a decrease in the tax being paid to the Exchequer from fuel taxes etc. due to a more direct route, reduction in congestion and an increase in average speeds.	NPV of changes in indirect tax revenues =		-£2,644,000	

Appendix B

AST SUPPORTING WORKSHEETS

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£10,270,000		£10,270,000			
Vehicle operating costs	£823,000		£823,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£11,093,000	*(1a)*	£11,093,000	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£18,343,000		£18,343,000			
Vehicle operating costs	£2,531,000		£2,531,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£20,874,000	*(1b)*	£20,874,000	0	0	0

Business			**Goods Vehicles**	**Business Cars & LGVs**				
User benefits					**Passengers**	**Freight**	**Passengers**	
Travel time	£9,662,000		£6,788,000	£2,873,000				
Vehicle operating costs	£2,099,000		£1,528,000	£571,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£11,761,000	*(2)*	£8,316,000	£3,444,000	0	0	0	0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£11,761,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£43,728,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Fund						
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,419,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,419,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£2,034,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,419,000	*(10) = (7) + (8)*
Wider Public Finances	£2,034,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | Core Growth Run (1.7) AM IP PM

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£869,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£11,093,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£20,874,000	*(1b)*
Economic Efficiency: Business Users and Providers	£11,760,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£2,034,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£53,176,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,419,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,419,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£38,757,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	3.69	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
User benefits	TOTAL		Private Cars and LGVs	Passengers	Passengers	
Travel time	£8,710,000		£8,710,000			
Vehicle operating costs	£745,000		£745,000			
User charges	0					
During Construction & Maintenance	0					
COMMUTING	£9,455,000	*(1a)*	£9,455,000	0	0	0

Non-business: Other	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
User benefits	TOTAL		Private Cars and LGVs	Passengers	Passengers	
Travel time	£15,505,000		£15,505,000			
Vehicle operating costs	£2,266,000		£2,266,000			
User charges	0					
During Construction & Maintenance	0					
NET NON-BUSINESS BENEFITS: OTHER	£17,771,000	*(1b)*	£17,771,000	0	0	0

Business			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers	
User benefits								
Travel time	£8,362,000		£5,928,000	£2,434,000				
Vehicle operating costs	£1,909,000		£1,368,000	£541,000				
User charges	0							
During Construction & Maintenance	0							
Subtotal	£10,271,000	*(2)*	£7,296,000	£2,975,000	0	0	0	0
Private sector provider impacts						Freight	Passengers	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£10,271,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£37,497,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Funding						
Revenue	0					
Operating Costs	0					
Investment Costs	0					
Developer and Other Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	0	*(7)*				
Central Government Funding: Transport						
Revenue	0					
Operating costs	0					
Investment Costs	£14,083,000					
Developer and Other Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	£14,083,000	*(8)*				
Central Government Funding: Non-Transport						
Indirect Tax Revenues	£1,610,000	*(9)*				
TOTALS						
Broad Transport Budget	£14,083,000	*(10) = (7) + (8)*				
Wider Public Finances	£1,610,000	*(11) = (9)*				

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | Core Growth OBR Sensitivity Run (1.14) AM IP PM

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£661,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£9,455,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£17,772,000	*(1b)*
Economic Efficiency: Business Users and Providers	£10,270,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£1,610,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£47,162,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,083,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,083,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£33,079,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	3.349	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£12,801,000		£12,801,000			
Vehicle operating costs	£1,015,000		£1,015,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£13,816,000	*(1a)*	£13,816,000	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£35,469,000		£35,469,000			
Vehicle operating costs	£4,763,000		£4,763,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£40,232,000	*(1b)*	£40,232,000	0	0	0

Business			**Goods Vehicles**	**Business Cars & LGVs**				
User benefits					**Passengers**	**Freight**	**Passengers**	
Travel time	£17,935,000		£12,404,000	£5,531,000				
Vehicle operating costs	£3,607,000		£2,595,000	£1,012,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£21,542,000	*(2)*	£14,999,000	£6,543,000	0	0	0	0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£21,542,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£75,590,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
Local Government Fund	**TOTAL**		**INFRASTRUCTURE**			
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,419,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,419,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£3,470,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,419,000	*(10) = (7) + (8)*
Wider Public Finances	£3,470,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | Core Growth Run (1.7) All Periods

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£1,478,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£13,817,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£40,232,000	*(1b)*
Economic Efficiency: Business Users and Providers	£21,542,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£3,470,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£84,213,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,419,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,419,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£69,794,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	5.84	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	ALL MODES		ROAD		BUS and COACH	RAIL	OTHER
User benefits	TOTAL		Private Cars and LGVs		Passengers	Passengers	
Travel time	£10,850,000		£10,850,000				
Vehicle operating costs	£928,000		£928,000				
User charges	0						
During Construction & Maintenance	0						
COMMUTING	£11,778,000	(1a)	£11,778,000		0	0	0

Non-business: Other	ALL MODES		ROAD		BUS and COACH	RAIL	OTHER
User benefits	TOTAL		Private Cars and LGVs		Passengers	Passengers	
Travel time	£29,986,000		£29,986,000				
Vehicle operating costs	£4,326,000		£4,326,000				
User charges	0						
During Construction & Maintenance	0						
NET NON-BUSINESS BENEFITS: OTHER	£34,312,000	(1b)	£34,312,000		0	0	0

Business			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers	
User benefits								
Travel time	£15,503,000		£10,820,000	£4,683,000				
Vehicle operating costs	£3,343,000		£2,379,000	£964,000				
User charges	0							
During Construction & Maintenance	0							
Subtotal	£18,846,000	(2)	£13,199,000	£5,647,000	0	0	0	0
Private sector provider impacts						Freight	Passengers	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	(3)			0	0	0	0
Other business impacts								
Developer contributions	0	(4)						
NET BUSINESS IMPACT	£18,846,000	(5) = (2) + (3) + (4)						

TOTAL		
Efficiency Benefits (TEE)	£64,936,000	(6) = (1a) + (1b) + (5)

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
Local Government Func	**TOTAL**		**INFRASTRUCTURE**			
Revenue	0					
Operating Costs	0					
Investment Costs	0					
Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	0	*(7)*				
Central Government Funding: Transport						
Revenue	0					
Operating costs	0					
Investment Costs	£14,083,000					
Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	£14,083,000	*(8)*				
Central Government Funding: Non-Trans						
Indirect Tax Revenues	£2,813,000	*(9)*				
TOTALS						
Broad Transport Budget	£14,083,000	*(10) = (7) + (8)*				
Wider Public Finances	£2,813,000	*(11) = (9)*				

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | Core Growth OBR Sensitivity Run (1.14) All Periods

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£1,157,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£11,777,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£34,311,000	*(1b)*
Economic Efficiency: Business Users and Providers	£18,846,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£2,813,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£73,892,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,083,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,083,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£59,809,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	5.247	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£11,092,000		£11,092,000			
Vehicle operating costs	£1,007,000		£1,007,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£12,099,000	*(1a)*	£12,099,000	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£19,230,000		£19,230,000			
Vehicle operating costs	£2,731,000		£2,731,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£21,961,000	*(1b)*	£21,961,000	0	0	0

Business			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
User benefits								
Travel time	£10,177,000		£7,260,000	£2,917,000				
Vehicle operating costs	£2,254,000		£1,680,000	£574,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£12,431,000	*(2)*	£8,940,000	£3,491,000	0	0	0	0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£12,431,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£46,491,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
Local Government Fund	**TOTAL**		**INFRASTRUCTURE**			
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,419,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,419,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£2,223,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,419,000	*(10) = (7) + (8)*
Wider Public Finances	£2,223,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | High Growth Run (1.7) AM IP PM

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£941,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£12,099,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£21,961,000	*(1b)*
Economic Efficiency: Business Users and Providers	£12,431,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£2,223,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£55,823,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,419,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,419,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£41,404,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	3.87	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	ALL MODES TOTAL		ROAD Private Cars and LGVs	BUS and COACH Passengers	RAIL Passengers	OTHER
User benefits						
Travel time	£9,412,000		£9,412,000			
Vehicle operating costs	£903,000		£903,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£10,315,000	*(1a)*	£10,315,000	0	0	0

Non-business: Other	ALL MODES TOTAL		ROAD Private Cars and LGVs	BUS and COACH Passengers	RAIL Passengers	OTHER
User benefits						
Travel time	£16,261,000		£16,261,000			
Vehicle operating costs	£2,428,000		£2,428,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£18,689,000	*(1b)*	£18,689,000	0	0	0

Business			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers	
User benefits								
Travel time	£8,802,000		£6,329,000	£2,473,000				
Vehicle operating costs	£2,036,000		£1,492,000	£544,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£10,838,000	*(2)*	£7,821,000	£3,017,000	0	0	0	0
Private sector provider impacts						Freight	Passengers	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£10,838,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£39,842,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Fund						
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,083,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,083,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£1,734,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,083,000	*(10) = (7) + (8)*
Wider Public Finances	£1,734,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | High Growth OBR Sensitivity Run (1.14) AM IP PM

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£712,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£10,315,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£18,689,000	*(1b)*
Economic Efficiency: Business Users and Providers	£10,838,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£1,734,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£49,434,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,083,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,083,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£35,351,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	3.51	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£13,706,000		£13,706,000			
Vehicle operating costs	£1,179,000		£1,179,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£14,885,000	*(1a)*	£14,885,000	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£36,591,000		£36,591,000			
Vehicle operating costs	£5,167,000		£5,167,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£41,758,000	*(1b)*	£41,758,000	0	0	0

Business			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
User benefits								
Travel time	£18,467,000		£12,833,000	£5,634,000				
Vehicle operating costs	£3,811,000		£2,782,000	£1,028,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£22,278,000	*(2)*	£15,615,000	£6,662,000	0	0	0	0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£22,278,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£78,921,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
Local Government Fund	**TOTAL**		**INFRASTRUCTURE**			
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,419,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,419,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£3,715,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,419,000	*(10) = (7) + (8)*
Wider Public Finances	£3,715,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | High Growth Run (1.7) All Periods

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£1,578,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£14,885,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£41,759,000	*(1b)*
Economic Efficiency: Business Users and Providers	£22,278,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£3,715,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£87,399,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,419,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,419,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£72,980,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	6.06	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	ALL MODES TOTAL		ROAD Private Cars and LGVs	BUS and COACH Passengers	RAIL Passengers	OTHER
User benefits						
Travel time	£11,621,000		£11,621,000			
Vehicle operating costs	£1,063,000		£1,063,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£12,684,000	*(1a)*	£12,684,000	0	0	0

Non-business: Other	ALL MODES TOTAL		ROAD Private Cars and LGVs	BUS and COACH Passengers	RAIL Passengers	OTHER
User benefits						
Travel time	£30,940,000		£30,940,000			
Vehicle operating costs	£4,646,000		£4,646,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£35,586,000	*(1b)*	£35,586,000	0	0	0

Business			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers	
User benefits								
Travel time	£15,952,000		£11,182,000	£4,770,000				
Vehicle operating costs	£3,524,000		£2,545,000	£979,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£19,476,000	*(2)*	£13,727,000	£5,749,000	0	0	0	0
Private sector provider impacts						Freight	Passengers	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£19,476,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£67,746,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
Local Government Fund	**TOTAL**		**INFRASTRUCTURE**			
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,083,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,083,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£2,966,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,083,000	*(10) = (7) + (8)*
Wider Public Finances	£2,966,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | High Growth OBR Sensitivity Run (1.14) All Periods

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£1,223,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£12,685,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£35,586,000	*(1b)*
Economic Efficiency: Business Users and Providers	£19,476,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£2,966,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£76,618,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,083,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,083,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£62,535,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	5.44	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£9,102,000		£9,102,000			
Vehicle operating costs	£873,000		£873,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£9,975,000	*(1a)*	£9,975,000	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£15,915,000		£15,915,000			
Vehicle operating costs	£2,248,000		£2,248,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£18,163,000	*(1b)*	£18,163,000	0	0	0

Business			**Goods Vehicles**	**Business Cars & LGVs**				
User benefits					**Passengers**	**Freight**	**Passengers**	
Travel time	£9,374,000		£6,697,000	£2,676,000				
Vehicle operating costs	£1,853,000		£1,292,000	£561,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£11,227,000	*(2)*	£7,989,000	£3,237,000	0	0	0	0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£11,227,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£39,365,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
Local Government Fund	**TOTAL**		**INFRASTRUCTURE**			
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,419,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,419,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£1,828,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,419,000	*(10) = (7) + (8)*
Wider Public Finances	£1,828,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | Low Growth Run (1.7) AM IP PM

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£772,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£9,975,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£18,163,000	*(1b)*
Economic Efficiency: Business Users and Providers	£11,227,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£1,828,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£48,923,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,419,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,419,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£34,504,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	3.39	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£7,766,000		£7,766,000			
Vehicle operating costs	£811,000		£811,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£8,577,000	*(1a)*	£8,577,000	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£13,501,000		£13,501,000			
Vehicle operating costs	£2,063,000		£2,063,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£15,564,000	*(1b)*	£15,564,000	0	0	0

Business			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
User benefits								
Travel time	£8,121,000		£5,849,000	£2,473,000				
Vehicle operating costs	£1,745,000		£1,212,000	£544,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£9,866,000	*(2)*	£7,061,000	£3,017,000	0	0	0	0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£9,866,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£34,007,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Fund						
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,083,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,083,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£1,516,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,083,000	*(10) = (7) + (8)*
Wider Public Finances	£1,516,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | Low Growth OBR Sensitivity Run (1.14) AM IP PM

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£616,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£8,577,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£15,564,000	*(1b)*
Economic Efficiency: Business Users and Providers	£9,866,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£1,516,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£43,721,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,083,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,083,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£29,638,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	3.10	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£11,567,000		£11,567,000			
Vehicle operating costs	£1,041,000		£1,041,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£12,608,000	*(1a)*	£12,608,000	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£32,236,000		£32,236,000			
Vehicle operating costs	£4,304,000		£4,304,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£36,540,000	*(1b)*	£36,540,000	0	0	0

Business			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
User benefits								
Travel time	£17,703,000		£12,471,000	£5,232,000				
Vehicle operating costs	£3,251,000		£2,286,000	£964,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£20,954,000	*(2)*	£14,757,000	£6,196,000	0	0	0	0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£20,954,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£70,102,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
Local Government Fund	**TOTAL**		**INFRASTRUCTURE**			
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,419,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,419,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£3,167,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,419,000	*(10) = (7) + (8)*
Wider Public Finances	£3,167,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | Low Growth Run (1.7) All Periods

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£1,342,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£12,608,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£36,540,000	*(1b)*
Economic Efficiency: Business Users and Providers	£20,954,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£3,167,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£78,891,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,419,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,419,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£64,472,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	5.47	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£9,853,000		£9,853,000			
Vehicle operating costs	£970,000		£970,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
COMMUTING	£10,823,000	*(1a)*	£10,823,000	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	£27,319,000		£27,319,000			
Vehicle operating costs	£3,957,000		£3,957,000			
User charges	£0		£0			
During Construction & Maintenance	£0		£0			
NET NON-BUSINESS BENEFITS: OTHER	£31,276,000	*(1b)*	£31,276,000	0	0	0

Business			**Goods Vehicles**	**Business Cars & LGVs**				
User benefits					**Passengers**	**Freight**	**Passengers**	
Travel time	£15,305,000		£10,870,000	£4,436,000				
Vehicle operating costs	£3,094,000		£2,169,000	£925,000				
User charges	£0		£0	£0				
During Construction & Maintenance	£0		£0	£0				
Subtotal	£18,399,000	*(2)*	£13,039,000	£5,361,000	0	0	0	0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	0							
Operating costs	0							
Investment costs	0							
Grant/subsidy	0							
Subtotal	0	*(3)*			0	0	0	0
Other business impacts								
Developer contributions	0	*(4)*						
NET BUSINESS IMPACT	£18,399,000	*(5) = (2) + (3) + (4)*						

TOTAL		
Efficiency Benefits (TEE)	£60,498,000	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Fund						
Revenue	£0					
Operating Costs	£0					
Investment Costs	£0					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£0	*(7)*				
Central Government Funding: Transpc						
Revenue	£0					
Operating costs	£0					
Investment Costs	£14,083,000					
Contributions	£0					
Grant/Subsidy Payments	£0					
NET IMPACT	£14,083,000	*(8)*				
Central Government Funding: Non-Tra						
Indirect Tax Revenues	£2,644,000	*(9)*				

TOTALS		
Broad Transport Budget	£14,083,000	*(10) = (7) + (8)*
Wider Public Finances	£2,644,000	*(11) = (9)*

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

AMCB_Table

Model Map | Low Growth OBR Sensitivity Run (1.14) All Periods

Analysis of Monetised Costs and Benefits

Noise	-£186,000	*(12)*
Local Air Quality	£1,086,000	*(13)*
Greenhouse Gases	£1,081,000	*(14)*
Journey Quality	£0	*(15)*
Physical Activity	£0	*(16)*
Accidents	£9,714,000	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£10,823,000	*(1a)*
Economic Efficiency: Consumer Users (Other)	£31,275,000	*(1b)*
Economic Efficiency: Business Users and Providers	£18,399,000	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£2,644,000	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£69,548,000	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£14,083,000	*(10)*
Present Value of Costs (see notes) (PVC)	£14,083,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£55,465,000	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	4.94	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Appendix C

RISK REGISTER

Project Value (£m)	21.63
Project Duration (weeks)	106

Probability Impact Matrix

	Cost Impact	Schedule Impact			Very High	High	Medium	Low	Very Low
					> 70 %	50 % - 70 %	20 % - 50 %	5 % - 20 %	< 5 %
					VH	H	M	L	VL
					5	4	3	2	1
Very High	>£0.940905m	>7 wks	VH	-5	-25	-20	-15	-10	-5
High	£0.467208m - £0.940905m	3 wks - 7 wks	H	-4	-20	-16	-12	-8	-4
Medium	£140.595k - £467.208k	2 wks - 3 wks	M	-3	-15	-12	-9	-6	-3
Low	£47.586k - £140.595k	0 wks - 2 wks	L	-2	-10	-8	-6	-4	-2
Very Low	<£47.586k	<0 wks	VL	-1	-5	-4	-3	-2	-1

Very Low	Low	Medium	High	Very High	Issue			
< 5 %	5 % - 20 %	20 % - 50 %	50 % - 70 %	> 70 %	100%			
VL	L	M	H	VH	I			
1	2	3	4	5	6		Schedule Impact	Cost Impact
						6	Showstopper	
5	10	15	20	25	30	5	>7 wks	>£0.940905m	Very High
4	8	12	16	20	24	4	3 wks - 7 wks	£0.467208m - £0.940905m	High
3	6	9	12	15	18	3	2 wks - 3 wks	£140.595k - £467.208k	Medium
2	4	6	8	10	12	2	0 wks - 2 wks	£47.586k - £140.595k	Low
1	2	3	4	5	6	1	<0 wks	<£47.586k	Very Low

Rating	1 Very Low	2 Low	3 Medium	4 High	5 Very High
Probability	< 5 %	5 % - 20 %	20 % - 50 %	50 % - 70 %	> 70 %
Cost	<£47.586k	£47.586k - £140.595k	£140.595k - £467.208k	£0.467208m - £0.940905m	>£0.940905m
Time	<0 wks	0 wks - 2 wks	2 wks - 3 wks	3 wks - 7 wks	>7 wks
Reputation					

1 Very Low	2 Low	3 Medium	4 High	5 Very High
< 5 %	5 % - 20 %	20 % - 50 %	50 % - 70 %	> 70 %
<£47.586k	£47.586k - £140.595k	£140.595k - £467.208k	£0.467208m - £0.940905m	>£0.940905m
<0 wks	0 wks - 2 wks	2 wks - 3 wks	3 wks - 7 wks	>7 wks
Negligible Impact	Stakeolder relations strained / some negative reporting in media on the project	Dmanage to stakeholder relationships / Negative effect on WSCC reputation	Threat to cora prpoject objectives / Significant impact on WSCC creadibility	Threat to project survival / Reporting to media

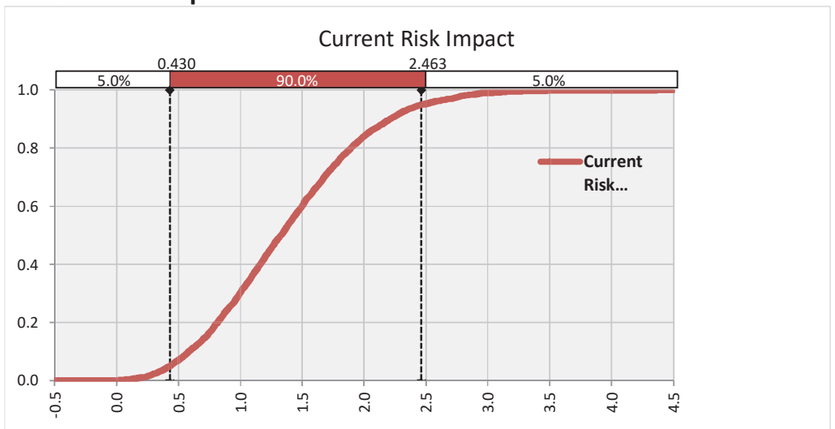
PROJECT:	A284 Lyminster Bypass

								Current Risk Exposure										Post-mitigation Risk Exposure												
Risk No	Title	Type	Category	Risk Description "There is a risk that..."	Cause "This is because..."	Risk Impact "If the event occurs, there will be the following consequence(s)..."	Risk Owner	Likelihood	Cost Impact	Schedule Impact	Reputational Impact	Likelihood (%)	Minimum Cost Impact (£)	Most Likely Cost Impact (£)	Maximum Cost Impact (£)	Risk Control / Action	Action Owner	Likelihood	Cost Impact	Schedule Impact	Reputational Impact	Likelihood (%)	Minimum Cost Impact (£)	Most Likely Cost Impact (£)	Maximum Cost Impact (£)	Assessment Assumptions	Contractual Ownership	Status	Last Update	Risk Updates / Key Changes
220	Poor Public Relations	Threat	Construction	Delays to the scheme due to delivering the scheme resulting in poor public relations	60% pro the scheme and therefore expecting complaints from the public	Reputational impact on the scheme. Delays to the scheme have been accepted due to Covid-19. Now the CPO process is well defined in terms of timescales with Public Inquiry already factored in	Martin, Mark (mmartin)	4. Likely (50-70%)	0. None	0. None	3. Medium	60.00%	0		0	#1. Communicaton Plan updated, and public liaisons already occured #2. Confirm allowance requirements for a Public Relations Management and publicity materials #3. Proactively seek and maintain a positive relationship with the Parish and District Councillors	Martin, Mark (mmartin)	3. Probable (20-50%)	0. None	0. None	2. Low	40.00%	0		0		WSCC (Client)	Open	21 Oct 2020	
222	Additional Inflation and cost	Threat	Scheme Cost	Inflationary costs over and above cost model	due to economic climate there could be an increase in prices of commodities and material demand exceeding supply	Additional costs	Martin, Mark (mmartin)	3. Probable (20-50%)	2. Low	0. None	0. None	40.00%	140,595		467,208	#1. Use Government figures of projected inflation to inform the future works and land costs #2. Budget to include aniticipated inflation figure	Martin, Mark (mmartin)	3. Probable (20-50%)	2. Low	0. None	0. None	40.00%	47,586		140,595	This accounts for the residual risk of inflation cost being higher than anticipated. . .	WSCC (Client)	Open	21 Oct 2020	
223	Additional Delay to Southern Bypass	Threat	Construction	Access to site will be compromised	Further delays to Private Developer's delivery of Lyminster Bypass (South)	Impact to construction access for Northern bypass, Access route would need to be adjusted, or it might cause a delay to trucks being able to access site	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	3. Medium	3. Medium	15.00%	140,595		467,208	#1. Organise access which does not involve Southern section of Bypass #2. Engagement with Persimmon Homes #3. Continual monitoring on progress at the southern section with WSCC Persimmon liaison #4. Pre-Construction surveys and ecological mitigation to minimise access requirements during construction	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	2. Low	2. Low	15.00%	47,586		140,595		WSCC (Client)	Open	21 Oct 2020	
225	Additional land cost	Threat	Scheme Cost	Land cost increase over and above the allowances made on the cost model	Valued land cost is higher than calculated figures	Additional costs	Martin, Mark (mmartin)	3. Probable (20-50%)	3. Medium	0. None	1. Very Low	40.00%	140,595		467,208	#1. Costing provided by County Valuers Office #2. Negotiation team to revalue during negotiation period	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	0. None	1. Very Low	15.00%	140,595		467,208		WSCC (Client)	Open	21 Oct 2020	
226	Ground Conditions contaminations	Threat	Construction	Ground conditions worse than initially envisaged / unforeseen contamination encountered during construction	New findings from GI / Contamination identified	Further works, additional material requirements, surcharge duration delays	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	3. Medium	1. Very Low	15.00%	140,595		467,208	#1. Contamination surveys have been undertaken as part of the planning process #2. Ground investigationsis to be completed in one remaining area to North of scheme. This is scheduled to occur during construction programme	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	3. Medium	3. Medium	1. Very Low	5.00%	140,595		467,208	Surveys undertaken and no contamination identified. One survey remaining. This is a residual risk	WSCC (Client)	Open	21 Oct 2020	
227	Protests	Threat	Scheme Preparation	Environmental protests leading to progress disruption	Publics complaints	Delays and disruption leading to additional costs	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	2. Low	2. Low	4. High	5.00%	47,586		140,595	#1. Ensure that appropriate stakeholder consultation / information is carried out (including Police) #2. Ensure reports and publicity highlight environmental benefits and mitigations in place# 3. Ensure that project team have a wider understanding of local issues and assess whether there are any indications that environmental protests may be an issue.	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	2. Low	1. Very Low	4. High	5.00%	47,586		75,000	No concerns raised to date regarding environment issues other than noise and dust related	WSCC (Client)	Open	21 Oct 2020	
228	Statutory Undertakers Scheduling	Threat	Construction	Delays to the programme due to Statutory undertakers unable to progress their works as planned	Three statutory undertakers need to be engaged for the delivery of the project Water cannot be diverted until culvert works are in progress, This is time critical Southern Water risk management (notably been difficult to liaise with)	Delays and disruption leading to additional costs	Martin, Mark (mmartin)	3. Probable (20-50%)	3. Medium	4. High	1. Very Low	40.00%	140,595		467,208	#1. Programme to undertake SU works (diversions etc.) at beginning of the main works start, such that if delays are incurred then the impact of the delays is much less then it would be if the contract for the main works had started. #2. Confirm whether utility diversion required (part of the C3 and detailed design processes). #3. Programme to consider traffic requirements and TM arrangements, as well as organising stats.	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	1. Very Low	1. Very Low	15.00%	140,595		467,208	Awaiting one C4. All Stats companies have been contacted and are ieng	Jackson Civil Engineering Group Ltd	Open	21 Oct 2020	
229	Safety Audit Results	Threat	Operations	Additional works following RS Audit 3	Issues identified post completion	Additional costs	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	2. Low	3. Medium	15.00%	47,586		140,595	review results of Stage 2 RSA	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	2. Low	2. Low	15.00%	47,586		140,595	Stage 3 RS Audit is post-completion for the works	WSCC (Client)	Open	21 Oct 2020	
231	Utility Diversions costs	Threat	Construction	Utility protection / diversion costs are greater than the allowance in the costings	Additional works required unforeseen	The detailed utility protection / diversion estimates could be greater than the allowance meaning that insufficient funding is available	Martin, Mark (mmartin)	3. Probable (20-50%)	1. Very Low	1. Very Low	1. Very Low	40.00%	140,595		169,000	#1. Continue liaison with utility companies (Ongoing) #2. Detailed consultation and estimates are required from the utility companies #3. Get confirmed C4 estimates #4. Engage with statutory utilities regarding potential delays of the scheme #5. Early engagement with the water company to further review the latest C4 estimates, currently deemed as requiring further works	Martin, Mark (mmartin)	3. Probable (20-50%)	1. Very Low	1. Very Low	1. Very Low	40.00%	0		47,586		WSCC (Client)	Open	21 Oct 2020	
234	Damage to Statutory Utilities	Threat	Construction	Damage to existing Statutory Utilities equipment during construction (including unknown)	Unknown location of stats	Delays and disruption leading to additional costs	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	3. Medium	2. Low	15.00%	140,595		467,208	Stats surveys as part of the detailed design. Completing HV cable tracing	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	3. Medium	3. Medium	2. Low	5.00%	140,595		467,208		Jackson Civil Engineering Group Ltd	Open	21 Oct 2020	
235	Supply chain performance	Threat	Construction	There will be supply chain problems. Delay to the programme due to performance of the supply chain subcontractors	Due to problems and performance issues with the supply chain	Delays, disruption and some minor cost impact	Martin, Mark (mmartin)	2. Unlikely (5-20%)	1. Very Low	3. Medium	1. Very Low	15.00%	0		47,586	#1. Contractor to clearly identify their supply chain management process, prompt payment certificates, consider project bank accounts, use partnering style arrangements whereby the client has interface with the supply chain such that any potential risk can be understood. #2. Use of target cost contract to ensure this risk is shared.- to be control via programme management controls #3. WSCC to ensure that the Principal Contractor has sole responsibility for delivery of the works. #4. Monitor progress on other projects (A2300)	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	1. Very Low	3. Medium	1. Very Low	5.00%	0		47,586		Jackson Civil Engineering Group Ltd	Open	21 Oct 2020	
236	Noise and vibration	Threat	Construction	Disruption to local residents due to works causing noise, dust and vibration	Disruptive works causing noise, dust and vibration	Additional costs to mitigate, disruption to local residents	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	1. Very Low	3. Medium	15.00%	47,586		140,595	#1. Plan the works to ensure that noisy, dusty or operation that cause vibration are minimised from the works where possible and that the correct legislative requirements are met for works that cannot be replaced #2. Produce CEMP as part of pre construction package. #3. Review if contractor disruption could be driven by the pilling	Martin, Mark (mmartin)	2. Unlikely (5-20%)	1. Very Low	1. Very Low	2. Low	15.00%	0		47,586		Jackson Civil Engineering Group Ltd	Open	21 Oct 2020	
238	Extreme Weather	Threat	Construction	Extreme weather conditions impacting works progress (1 in 10, or greater)	Extreme weather conditions	Delays and disruption leading to additional costs. Working on floodplain so this has to be factored	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	3. Medium	2. Low	15.00%	140,595		467,208	#1 Programme designed to mitigate risk by scheduling work in floodplain during less wet months of year. #2. To be reviewed following QRA, and review against the risk exposure and risk allowances in the costs	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	2. Low	2. Low	15.00%	47,586		140,595	Assumed at maximum 2 weeks delay if an extreme weather event materialises.	WSCC (Client)	Open	21 Oct 2020	
239	Health and Safety incident	Threat	Construction	Health and Safety incident impacting works progress	Accident or failure to manage or anticipate risk, or lack of appropriate training, incorrect use of equipment	Potential delays to the project but unlikely to be of significant impact	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	2. Low	4. High	15.00%	47,586		140,595	#1. WSCC to ensure CDM procedures are provided as part of tender submission #2. Pre-lims design going through PCI to ensure all details are handed over to the D&B contractor #3. Ensure that all parties are aware of their responsibilities under CDM arrangement	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	2. Low	2. Low	4. High	5.00%	47,586		140,595		Jackson Civil Engineering Group Ltd	Open	21 Oct 2020	
240	Third Party Claims	Threat	Construction	Damage of private property or delays or effects on business' leading to third party claims	Access limitations for large vehicles, accidents/negligence or happenstance	Additional costs	Martin, Mark (mmartin)	3. Probable (20-50%)	2. Low	2. Low	1. Very Low	40.00%	47,586		140,595	#1. Contractor to detail in their tender submission how they will manage disruption to the public - To be confirmed#2. Early engagement with relevant business' and residents to maintain access' and manage any disruption during construction	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	2. Low	1. Very Low	15.00%	47,586		140,595		WSCC (Client)	Open	23 Oct 2020	
241	Defects post completion	Threat	Construction	Latent defects in the works showing up after defects liability period	Works not completed to standard	Additional costs, rectification of defects causing disruption to the public and reputational impact to WSCC	Martin, Mark (mmartin)	3. Probable (20-50%)	2. Low	1. Very Low	3. Medium	40.00%	47,586		140,595	#1. Ensure that D&B contractor has good track record in the successful delivery of schemes of similar nature #2. Ensure adequate supervision of the works (Any latent defects arising to be covered by maintenance budget) #3. Develop a commissioning and handover process is properly in place	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	1. Very Low	3. Medium	15.00%	47,586		140,595		WSCC (Client)	Open	21 Oct 2020	
243	Archaeological intrusive investigation	Threat	Construction	Intrusive investigation may be required due to archaeological finding	Legal protections for significant cultural archaeological finds	Residual risk	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	3. Medium	1. Very Low	15.00%	140,595		467,208	#1. Develop a strategy to manage archaeological findings during construction #2. Agree on escalation process. Discuss with archaeological team	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	3. Medium	3. Medium	1. Very Low	5.00%	140,595		467,208		WSCC (Client)	Open	21 Oct 2020	
244	Traffic Management constraints	Threat	Construction	Additional TM required during fill material haulage / TM constraints	Changes in delivery schedules and availability of materials as well as storage capability on site	Additional cost, changes to TM	Martin, Mark (mmartin)	3. Probable (20-50%)	1. Very Low	3. Medium	3. Medium	40.00%	0		47,586	#1. Stockpiling of material prior to fill operation will allow reduction in the number of HGV movements each day #2. Portable traffic lights utilised if required for safe access and egress	Martin, Mark (mmartin)	2. Unlikely (5-20%)	1. Very Low	1. Very Low	1. Very Low	15.00%	0		47,586		Jackson Civil Engineering Group Ltd	Open	21 Oct 2020	
245	Traffic Management outside working hours	Threat	Construction	Movement/damage of TM outside of normal working hours	Changes in delivery schedules and availability of materials as well as storage capability on site	Additional costs	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	2. Low	2. Low	3. Medium	5.00%	47,586		140,595	#1. Regular maintenance of TM during its use. Collaboration with WSCC to provide additional maintenance in the event of vandalism or damage out of hours	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	1. Very Low	1. Very Low	3. Medium	5.00%	0		47,586		Jackson Civil Engineering Group Ltd	Open	21 Oct 2020	
246	Ecological Constraints	Threat	Environment / Ecology	Ecological constraints could delay start of construction	Due to site investigation work, ecological requirments may increase. Under licence specific time periods are required for removing animals under licence.	Delays to programme Additional costs	Martin, Mark (mmartin)	3. Probable (20-50%)	4. High	5. Very High	4. High	40.00%	467,208		940,905	#1. Survey all areas prior to work commencement and plan clearance strategy and clearly fit in programme #2. Negotiate access to clear species and vegetation prior to work commencement#3 Manage areas cleared prior to work commencement to make sure no returns	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	3. Medium	3. Medium	15.00%	140,595		467,208	As part of the preliminary design stage ecological investigations have been undertaken and the outcomes have informed the design.	Jackson Civil Engineering Group Ltd	Open	23 Oct 2020	
248	Pavement Design scope creep	Threat	Design	Pavement scope creep (particularly at the interfaces points) Tie in at Northern end of Bypass with old road	Durability and age of current road Materials to be used	Additional costs	Martin, Mark (mmartin)	4. Likely (50-70%)	1. Very Low	2. Low	2. Low	60.00%	0		47,586	"#1. Review ground position at Northern tie-in#2. Review expected area of northern resurface works to deal with acoustic mitigation#3 Funding for this likely to come from other council sources"	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	1. Very Low	1. Very Low	1. Very Low	5.00%	0		47,586		Jackson Civil Engineering Group Ltd	Open	21 Oct 2020	
249	Temporary Works permits	Threat	Scheme Preparation	Unable to achieve permits for temporary works in the flood plain	EA determines that design of viaduct and work around main water course is not at required level	Redesign of temporary works / Revise methodology for the construction of the viaduct / re-design of the viaduct solution	Martin, Mark (mmartin)	2. Unlikely (5-20%)	4. High	5. Very High	4. High	15.00%	467,208		940,905	#1. Flood modelling being undertaken on the temporary works case. COMPLETE #2. Submit EA permit as soon as possible	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	3. Medium	3. Medium	4. High	5.00%	140,595		467,208		WSCC (Client)	Open	21 Oct 2020	
250	Unexploded ordnance (UXO)	Threat	Construction	Unexpected UXOs found during construction	UXOs are located within the UK with unknown locations, and earthworks in new areas can unearth them	Programme delay	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	2. Low	2. Low	1. Very Low	5.00%	47,586		140,595	#1. Plan in place with contractor for process to follow if UXOs discovered	Martin, Mark (mmartin)	1. Very Unlikely (1-5%)	2. Low	1. Very Low	1. Very Low	5.00%	47,586		140,595		WSCC (Client)	Open	21 Oct 2020	
3729	Southern Ground Conditions	Threat	Construction	Poor Ground conditions at southern end of scheme	Persimmon contractor trafficking over WSCC part of the site north of interface where ground conditions are already known to be challenging	Delay & additonal cost	Martin, Mark (mmartin)	3. Probable (20-50%)	2. Low	2. Low	2. Low	40.00%	47,586		140,595	Discussions with Persimmon to prevent any further damage	Martin, Mark (mmartin)	2. Unlikely (5-20%)	2. Low	2. Low	2. Low	15.00%	47,586		140,595			Open	21 Oct 2020	
3736	Potential design changes	Threat	Design	Aspects of the design will need adjustment	The CPO review process	Redesign of elements.	Martin, Mark (mmartin)	3. Probable (20-50%)	1. Very Low	1. Very Low	1. Very Low	40.00%	0		47,586	Reviews as queries and objections are submitted		1. Very Unlikely (1-5%)	1. Very Low	1. Very Low	1. Very Low	5.00%	0		47,586			Open	21 Oct 2020	
3737	COVID-19 Safe to Work practices	Threat	Construction	Additional Costs to facilitate Covid-19 Safe to work practices	Covid-19 is still a pandemic issue when construction starts	relevant Public Health England guidance will need to be followed	Martin, Mark (mmartin)	3. Probable (20-50%)	3. Medium	1. Very Low	1. Very Low	40.00%	140,595		467,208	Prepare for Covid-19 Practices in planning programme. Await updates on vaccine in 2021.	Martin, Mark (mmartin)	2. Unlikely (5-20%)	3. Medium	1. Very Low	1. Very Low	15.00%	140,595		467,208			Open	21 Oct 2020	

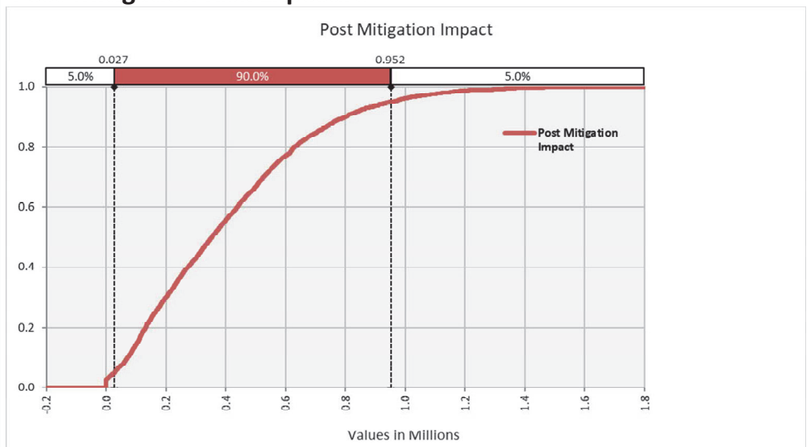
Risk Affordability Table	Current Total (£)	Previous Total (£)	Change (£)
Risk Allowance Budget			
Risks (P80 Current QCRA)	£1,892,671		£1,892,671
Issues			
Total Risks and Issues	£1,892,671	£0	£1,892,671
Net Risk Allowance (after Risks and Issues)	-£1,892,671	£0	-£1,892,671
Opportunities			
Net Risk Allowance (after Risks, Issues & Opps)	**-£1,892,671**	**£0**	**-£1,892,671**

** Montecarlo simulation ran at 5,000 iterations*

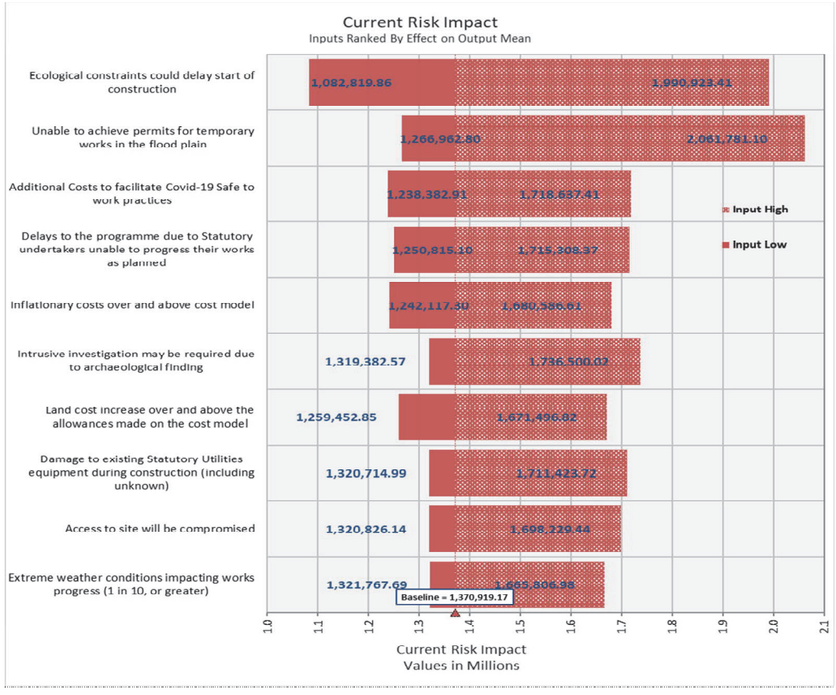
Current Risk Exposure



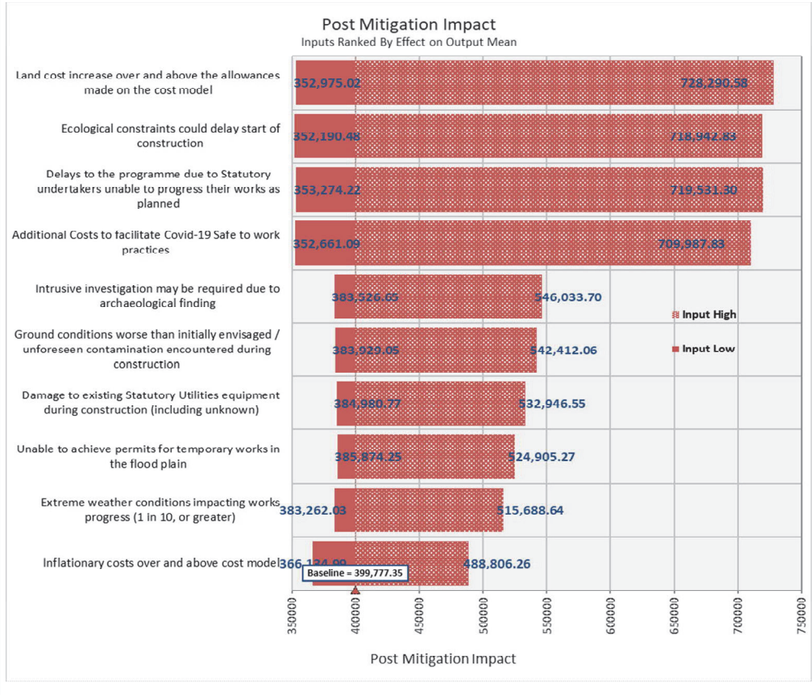
Post-Mitigation Risk Exposure



Key Risk Drivers



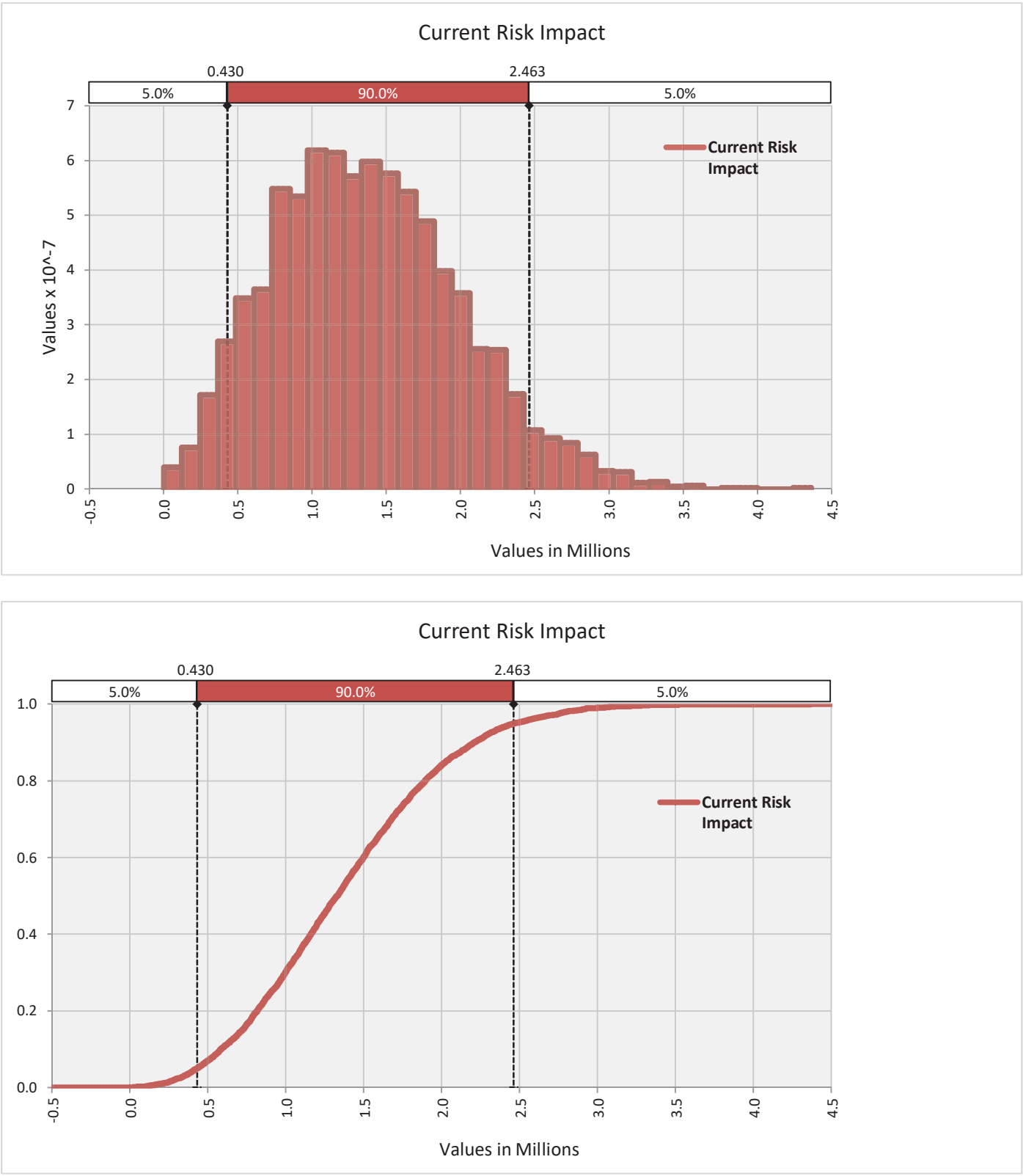
Key Risk Drivers



@RISK Output Report for Current Risk Impact V1

Performed By: Dassi, Sunain

Date: Tuesday, November 10, 2020 11:00:44 AM

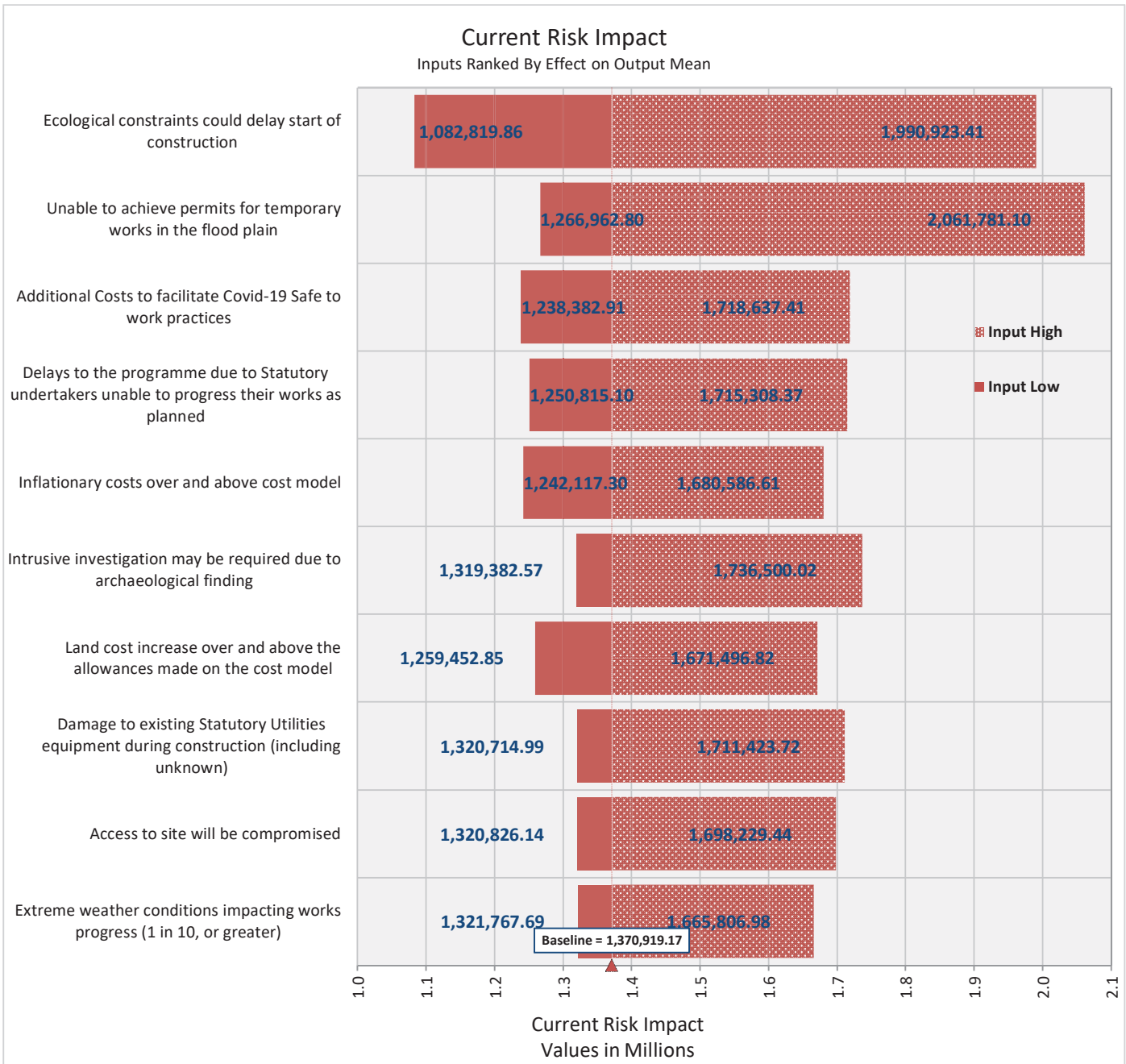


@RISK Output Report for Current Risk Impact V1

Performed By: Dassi, Sunain

Date: Tuesday, November 10, 2020 11:00:44 AM

Summary Statistics for Current Risk Impact			
Statistics		**Percentile**	
Minimum	2,896	**1.0%**	195,052.96
Maximum	4,363,993	**2.5%**	321,591.70
Mean	1,370,919	**5.0%**	429,533.29
Std Dev	625,465	**10.0%**	582,572.53
Variance	3.91207E+11	**15.0%**	719,028.12
Skewness	0.443388131	**20.0%**	815,469.42
Kurtosis	3.038087089	**25.0%**	906,437.17
Median	1,328,896	**30.0%**	995,374.31
Mode	1,198,854	**35.0%**	1,080,484.41
Left X	429,533	**40.0%**	1,159,818.77
Left P	5%	**50.0%**	**1,328,896.11**
Right X	2,462,680	**60.0%**	1,496,729.06
Right P	95%	**65.0%**	1,583,918.56
Diff X	2,033,147	**70.0%**	1,675,104.70
Diff P	90%	**75.0%**	1,781,725.19
#Errors	0	**80.0%**	**1,892,670.58**
Filter Min	Off	**85.0%**	2,022,595.33
Filter Max	Off	**90.0%**	2,203,578.18
#Filtered	0	**95.0%**	2,462,680.03
		97.5%	2,745,316.18
		99.0%	2,948,542.93



@RISK Output Report for Current Risk Impact V1

Performed By: Dassi, Sunain

Date: Tuesday, November 10, 2020 11:00:44 AM

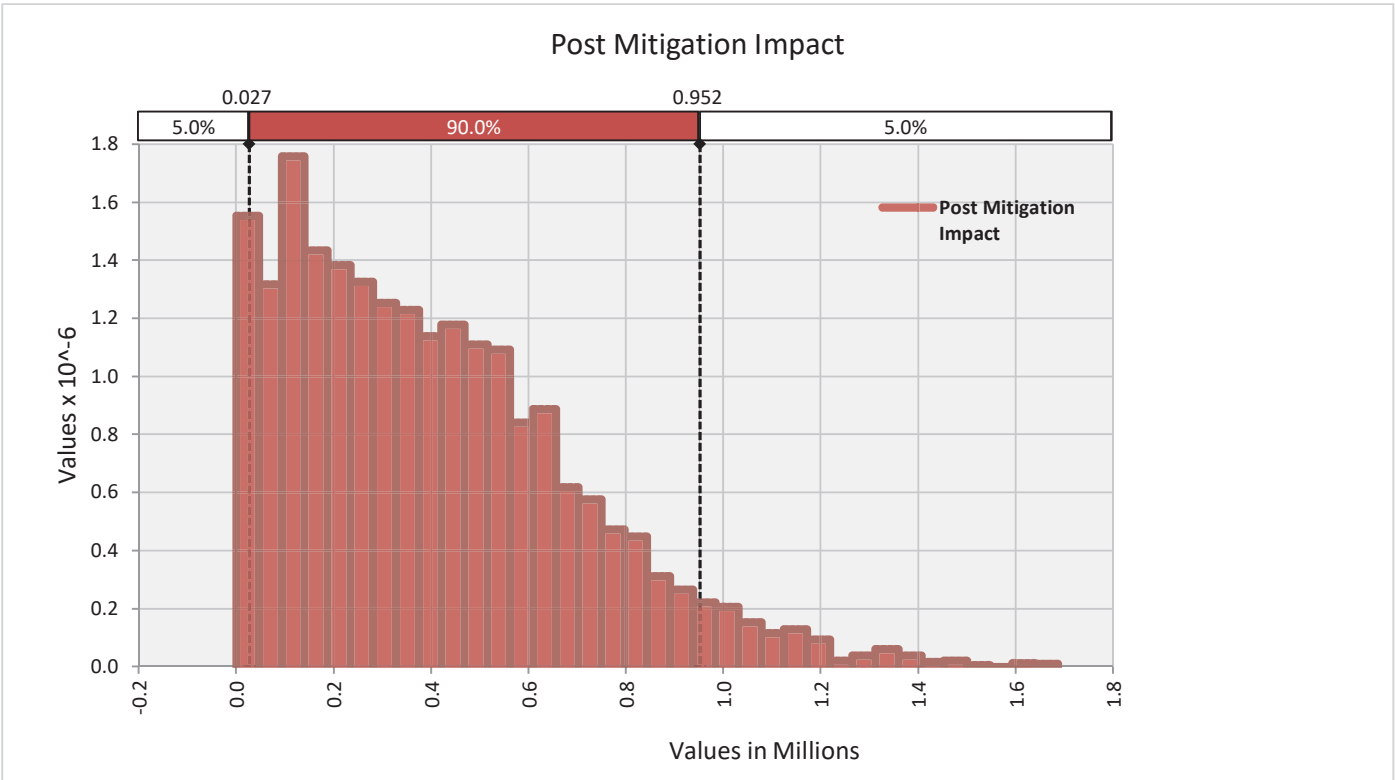
Change in Output Statistic for Current Risk Impact

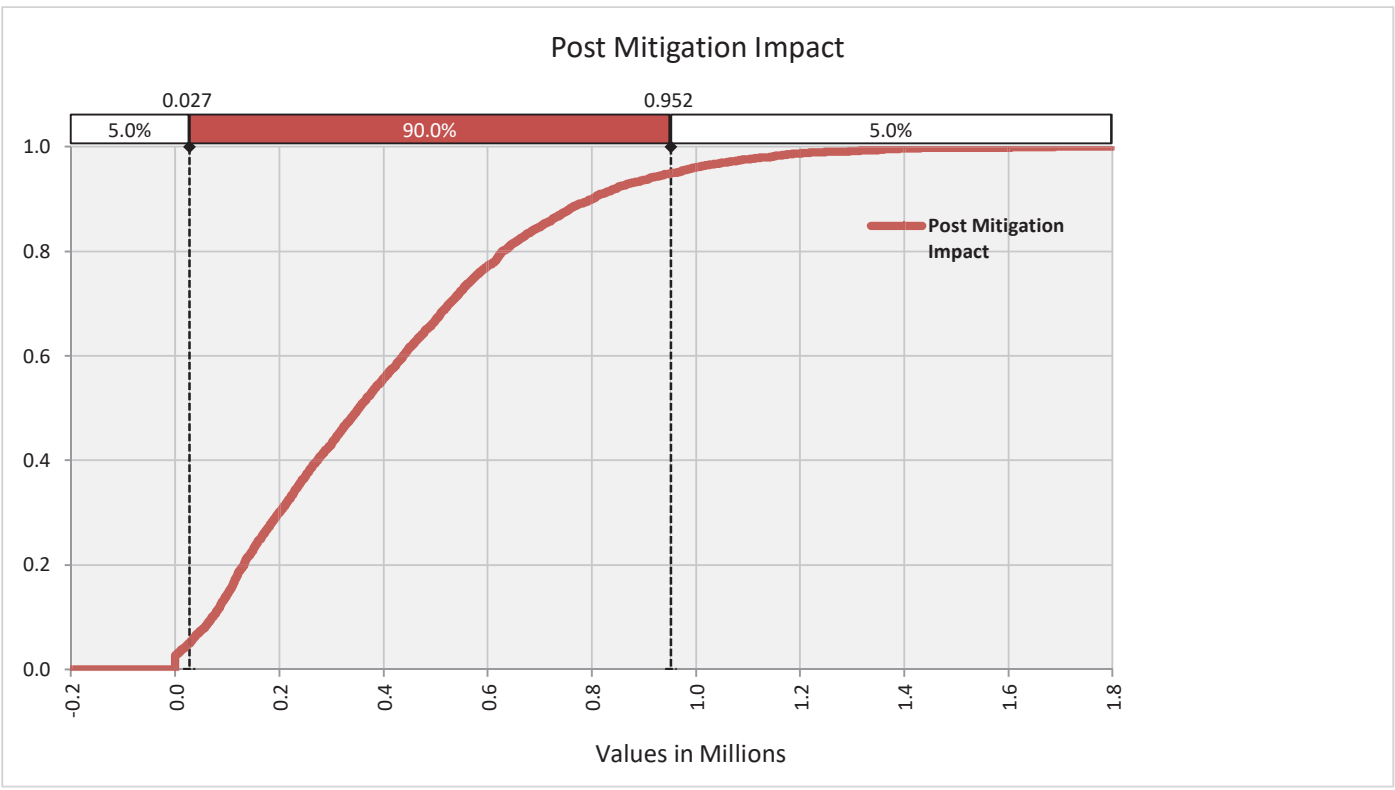
Rank	Name	Cell	Lower	Upper
1	Ecological constraints could delay start	V23	1,082,820	1,990,923
2	Unable to achieve permits for tempora	V25	1,266,963	2,061,781
3	Additional Costs to facilitate Covid-19 !	V29	1,238,383	1,718,637
4	Delays to the programme due to Statut	V10	1,250,815	1,715,308
5	Inflationary costs over and above cost i	V5	1,242,117	1,680,587
6	Intrusive investigation may be required	V20	1,319,383	1,736,500
7	Land cost increase over and above the	V7	1,259,453	1,671,497
8	Damage to existing Statutory Utilities e	V13	1,320,715	1,711,424
9	Access to site will be compromised	V6	1,320,826	1,698,229
10	Extreme weather conditions impacting	V16	1,321,768	1,665,807

@RISK Output Report for Post Mitigation Impact AN1

Performed By: Dassi, Sunain

Date: Tuesday, November 10, 2020 11:01:00 AM

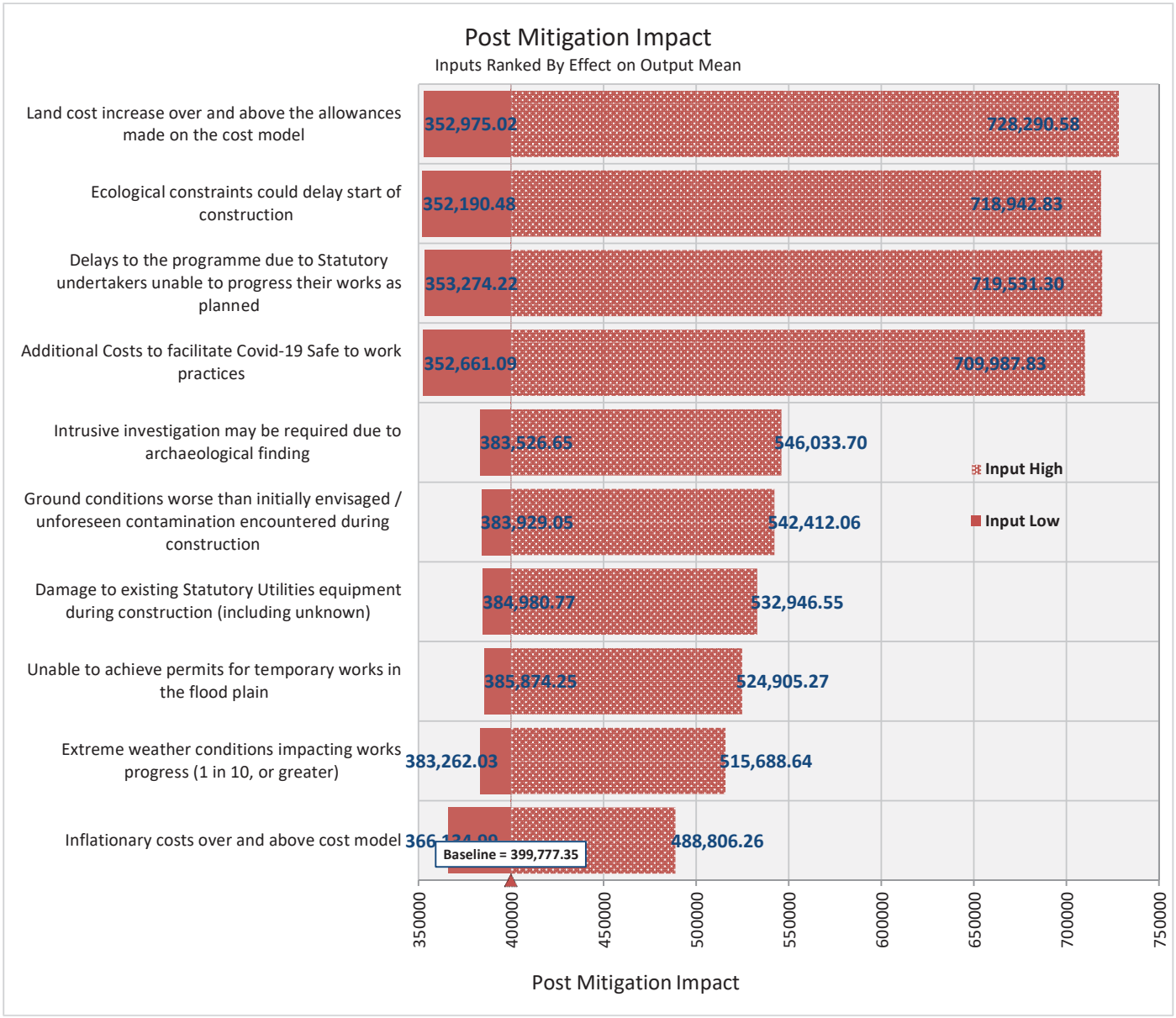




@RISK Output Report for Post Mitigation Impact AN1

Performed By: Dassi, Sunain
Date: Tuesday, November 10, 2020 11:01:00 AM

Summary Statistics for Post Mitigation Impact			
Statistics		**Percentile**	
Minimum	0	**1.0%**	-
Maximum	1,687,848	**2.5%**	-
Mean	399,777	**5.0%**	27,042.84
Std Dev	290,314	**10.0%**	71,204.34
Variance	84282046089	**15.0%**	103,526.68
Skewness	0.876090521	**20.0%**	131,799.68
Kurtosis	3.594593737	**25.0%**	163,037.25
Median	352,577	**30.0%**	198,956.39
Mode	0	**35.0%**	235,195.48
Left X	27,043	**40.0%**	273,170.56
Left P	5%	**50.0%**	**352,577.21**
Right X	951,991	**60.0%**	437,426.34
Right P	95%	**65.0%**	480,962.01
Diff X	924,948	**70.0%**	525,824.35
Diff P	90%	**75.0%**	573,638.90
#Errors	0	**80.0%**	**627,860.64**
Filter Min	Off	**85.0%**	704,026.69
Filter Max	Off	**90.0%**	798,937.15
#Filtered	0	**95.0%**	951,990.70
		97.5%	1,085,471.87
		99.0%	1,223,202.94



@RISK Output Report for Post Mitigation Impact AN1

Performed By: Dassi, Sunain

Date: Tuesday, November 10, 2020 11:01:00 AM

Change in Output Statistic for Post Mitigation Impact

Rank	Name	Cell	Lower	Upper
1	Land cost increase over and above the	AN7	352,975	728,291
2	Ecological constraints could delay start	AN23	352,190	718,943
3	Delays to the programme due to Statut	AN10	353,274	719,531
4	Additional Costs to facilitate Covid-19 !	AN29	352,661	709,988
5	Intrusive investigation may be required	AN20	383,527	546,034
6	Ground conditions worse than initially	AN8	383,929	542,412
7	Damage to existing Statutory Utilities e	AN13	384,981	532,947
8	Unable to achieve permits for tempora	AN25	385,874	524,905
9	Extreme weather conditions impacting	AN16	383,262	515,689
10	Inflationary costs over and above cost i	AN5	366,135	488,806

Appendix D

SCHEME COST PROFORMA

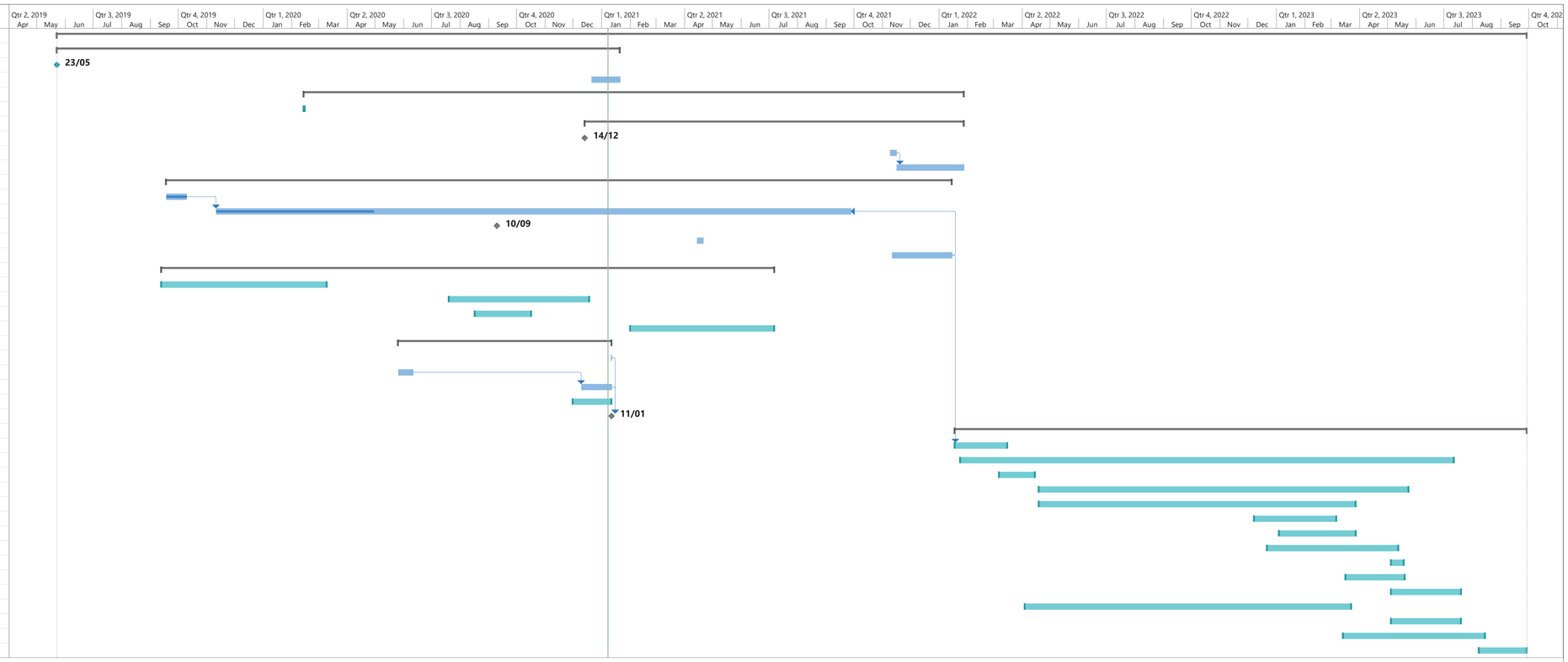
Reference	Description	Total
1	**Initial Works**	**971,930.96**
2	**Lyminster Bypass**	**14,557,374.75**
	Total	**15,529,305.71**

Reference	Description	Total
1	**Initial Works**	
	Series 100: Preliminaries	154,108.94
	Capita Fee	32,536.92
	Temporary Works - Viaduct	204,459.08
	Lyminster Bypass A284 - Phase 2.1 (Viaduct)	133,229.60
	Lyminster Bypass A284 Phase 2.2 - North	31,871.60
	Series 1600: Piling	290,875.84
	Works Total	**847,081.98**
	WAOH (Working Area Overheads)	43,617.21
	Sub Total	890,699.19
	Fee (9.12%)	81,231.77
	Total	**971,930.96**
2	**Lyminster Bypass**	
	Series 100: Preliminaries	2,139,582.90
	Capita Fee	117,448.24
	Compound & Access Roads	367,145.85
	Temporary Works - Viaduct	1,529,663.70
	Temporary Works - Culvert	49,725.52
	Series 200: Site Clearance	102,286.53
	Series 300: Fencing	174,076.44
	Series 400: Road Restraint Systems (Vehicle and Pedestrian)	144,794.74
	Series 500: Drainage and Service Ducts	408,243.62
	Earthworks - South of Viaduct	439,077.68
	Earthworks - North of Viaduct	419,502.29
	Series 700: Pavements	567,145.84
	Series 1100: Kerbs, Footways and Paved Area's	529,749.41
	Series 1200: Traffic Signs and Road Markings	29,795.66
	Series 1200: Traffic Signals	101,176.40
	Series 1300: Road Lighting Columns	29,922.91
	Series 1400: Electrical Work for Road Lighting & Traffic Signs	18,046.25
	Series 1600: Piling	1,392,700.89
	Viaduct	3,865,930.41
	Culvert	214,756.24
	Series 2700: Works for Statutory Undertakers	1,732.32
	Series 3000: Landscape and Ecology	86,102.39
	Lyminster Bypass Works Total	**12,728,606.23**
	WAOH	612,096.44
	Sub Total	13,340,702.67
	Fee (9.12%)	1,216,672.08
	Total	**14,557,374.75**

Appendix E

PROGRAMME

ID	Task Mode	Task Name	Duration	Start	Finish
1		**A284 Lyminster Bypass North**	**1107 days**	**Thu 23/05/19**	**Thu 28/09/23**
2		**Detailed Design & Planning**	**426 days**	**Thu 23/05/19**	**Wed 20/01/21**
3		Planning Approved	0 days	Thu 23/05/19	Thu 23/05/19
4		Finalise Target Cost	20 days	Mon 21/12/20	Wed 20/01/21
5		**Funding**	**494 days**	**Fri 14/02/20**	**Thu 27/01/22**
6		Approval of Funding By Council	1 day	Fri 14/02/20	Fri 14/02/20
7		**DfT Bid**	**283 days**	**Mon 14/12/20**	**Thu 27/01/22**
8		Submision to DfT	0 days	Mon 14/12/20	Mon 14/12/20
9		Finalise Full Business Case	5 days	Tue 09/11/21	Mon 15/11/21
10		DfT Approval of Full Business Case	50 days	Tue 16/11/21	Thu 27/01/22
11		**CPO & Side Roads Order**	**591 days**	**Wed 18/09/19**	**Fri 14/01/22**
12		WSCC to carry out initial visit to all landowners	16 days	Wed 18/09/19	Wed 09/10/19
13		Negotiaions with Land Owners	480 days	Mon 11/11/19	Mon 27/09/21
14		Publish CPO & Side Roads Order	0 days	Thu 10/09/20	Thu 10/09/20
15		Public Inquiry	5 days	Wed 14/04/21	Tue 20/04/21
16		Issue Notice to Treat	44 days	Thu 11/11/21	Fri 14/01/22
17		**Surveys & GI Works**	**460 days**	**Fri 13/09/19**	**Tue 06/07/21**
18		GI South Black Ditch - Goodchild	126 days	Fri 13/09/19	Mon 09/03/20
19		GI North Black Ditch - Longhurst	109 days	Mon 20/07/20	Fri 18/12/20
20		HV cable Tracing Andrew's Land	44 days	Mon 17/08/20	Fri 16/10/20
21		Preliminary Pile Testing	108 days	Mon 01/02/21	Tue 06/07/21
22		**Discharge of Planning Conditions**	**161 days**	**Tue 26/05/20**	**Mon 11/01/21**
23		WSI	1 day	Mon 11/01/21	Mon 11/01/21
24		CMP (Jacksons)	12 days	Tue 26/05/20	Wed 10/06/20
25		CEMP (Jacksons with assistance from WSP)	20 days	Thu 10/12/20	Mon 11/01/21
26		Updated Landscaping Drawings	27 days	Tue 01/12/20	Mon 11/01/21
27		Submit to Planning Officer	0 days	Mon 11/01/21	Mon 11/01/21
28		**Construction Works**	**431 days**	**Tue 18/01/22**	**Thu 28/09/23**
29		Site Establishment incl Clearance	41 days	Tue 18/01/22	Tue 15/03/22
30		Statutory undertakers Diversions	371 days	Mon 24/01/22	Tue 11/07/23
31		Working Platforms & Haul Roads	29 days	Mon 07/03/22	Thu 14/04/22
32		Fencing	278 days	Tue 19/04/22	Tue 23/05/23
33		Mainline Earthworks & Drainage	240 days	Tue 19/04/22	Mon 27/03/23
34		Landscaping	60 days	Thu 08/12/22	Mon 06/03/23
35		Ducting	59 days	Wed 04/01/23	Mon 27/03/23
36		Kerbing & Footpaths (Outside Viaduct)	96 days	Thu 22/12/22	Fri 12/05/23
37		VRS	10 days	Fri 05/05/23	Thu 18/05/23
38		Surfacing	43 days	Fri 17/03/23	Fri 19/05/23
39		Street Furniture	53 days	Fri 05/05/23	Wed 19/07/23
40		Viaduct Construction	246 days	Mon 04/04/22	Wed 22/03/23
41		Brookfield Culvert & Tie in to A284	53 days	Fri 05/05/23	Wed 19/07/23
42		Demobilisation of Site Compounds	106 days	Tue 14/03/23	Mon 14/08/23
43		Completion with Float	37 days	Tue 08/08/23	Thu 28/09/23



Project: Project1
Date: Fri 08/01/21

Task · Split · Milestone · Summary · Project Summary · Inactive Task · Inactive Milestone · Inactive Summary · Manual Task · Duration-only · Manual Summary Rollup · Manual Summary · Start-only · Finish-only · External Tasks · External Milestone · Deadline · Progress · Manual Progress

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