North Somerset Council and Somerset County Council

A38 MAJOR ROAD NETWORK

Strategic Outline Business Case

001-SOBC
JULY 2019

PUBLIC

North Somerset Council and Somerset County Council

A38 MAJOR ROAD NETWORK

Strategic Outline Business Case

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DATE: JULY 2019

North Somerset Council and Somerset County Council

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Strategic Outline Business Case

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0. STRATEGIC OUTLINE BUSINESS CASE FORMS AND CHECKLISTS

0.1. STRATEGIC OUTLINE BUSINESS CASE FORM[1]

Major Road Network (MRN) & Large Local Major (LLM) Schemes

Strategic Outline Business Case Submission

All submissions for consideration for the MRN or LLM pipelines and development funding must be supported by:

- A completed bid pro-forma (Part One).
- A checklist to highlight where key information can be found in the SOBC (Part Two).
- A Strategic Outline Business Case (SOBC) as defined in the Department's Transport Business Case Guidance and any Annexes as necessary. Please see:

  https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/85930/dft-transport-business-case.pdf

The checklist (b) details some key items that should be included within the SOBC for a candidate for MRN or LLM development funding.

The SOBC should be submitted alongside the MRN Regional Evidence Base and scheme priorities.

Proposed MRN and LLM schemes should only be road schemes as both programmes are now funded from the National Roads Fund. MRN schemes should be situated on the MRN, while LLM schemes should be for local roads which could include but are not limited to roads on the MRN. The Department's contribution will normally be between £20 million and £50 million for MRN schemes and above £50 million for LLM schemes.

[1] Downloaded from https://www.gov.uk/government/publications/major-road-network-and-large-local-majors-programmes-investment-planning, 6 June 2019

0.2. PART ONE: PRO-FORMA

Basic Information

Scheme Name	A38 MRN Scheme
STB Region / Regional Group	Western Gateway SNTB South West Peninsula SNTB
Promoting Authority	North Somerset Council and Somerset County Council
Scheme location	Road name/number and section: A38 between A4174 Colliters Way (South Bristol Link) and Edithmead Roundabout (M5 J22)
Scheme location	Latitude and longitude: Start: 51.418088, -2.636728 End: 51.237623, -2.951796

Contact Details

Please provide a contact name from the promoting authority for enquiries relating to this bid:	Alex Fear, Senior Major Projects Manager, North Somerset Council
Please provide a contact email from the promoting authority for enquiries relating to this bid:	alex.fear@n-somerset.gov.uk
Please provide a contact phone number from the promoting authority for enquiries relating to this bid:	07881 267485 01934 426458

Consultancy Input

Please provide the name of any consultancy companies/lead consultants involved in the preparation of the OBC.	WSP
Please provide the name of any consultancy companies/lead consultants involved in the preparation of the modelling (if different from above).	As above.

1) Introduction

Please provide a clear narrative to describe the scheme in the text box below (max 100 words).

The scheme proposes improvement of four junctions and an online improvement on the A38 MRN to provide additional capacity, improved journey reliability and enhanced resilience on the major highway corridor between Bristol and the South West, which is also the primary access to Bristol Airport. The A38 forms a key strategic function as a diversion route for the M5 so its improvement would enable wider network resilience. The scheme will also support planned housing and economic growth in Somerset, Sedgemoor and North Somerset, West of England and Bristol Airport which, in 2018, contributed £1.3bn+ to the regional economy.

2) Development of scheme so far

Which description in the table below best matches the current stage of scheme development? Please tick only one box

We have identified the problem (e.g. the stretch of road or junction) and have a wide range of potential options but have not yet started to identify specific solutions.	
We have done some high level work to sift out some options and have a shortlist of high level options which can be described and drawn on a map. Alignments may not be precise.	
We have sifted down to a small number of options (e.g. 2 to 4) with precise alignments but have not yet settled on a preferred option.	
We have settled on a preferred option or alignment – possibly with some minor design elements left to decide (e.g. junction types).	✓

Have you produced any of the following documents (as defined in WebTAG)?

Option Appraisal Report (OAR)	Yes
Appraisal Specification Report (ASR)	Yes

Please provide any other information in the box below to describe what option development work has been done to date and reference with hyperlinks or attachments. In particular, illustrate why alternative/lower cost/phased options have been ruled out.
The scheme as detailed is relatively low cost, providing localised improvements generally (but not exclusively) within the highway boundary which together enable a reduction in journey time and an improvement in journey reliability and safety.

3) Strategic Case – Problems and Objectives

Please describe the problems the scheme is being designed to solve and how the scheme will support MRN and LLM objectives (see Strategic Case Checklist in Part B) and key national strategic priorities (e.g. access to international gateways and HS2 connections) in no more than 250 words.

The A38 is one of the main arteries connecting Bristol, Weston-super-Mare, Bristol Airport and the South West. Many villages and settlements are located in the A38 corridor and consequently are prone to regular peak period congestion and delays. The A38 MRN study has identified the following issues in the study area:

- Traffic congestion affects journey time reliability on all networks and reduces wider network resilience benefits;
- Existing network issues do and will act as a throttle to housing and economic growth along the corridor;
- Traffic uses inappropriate routes to avoid congestion hot spots affecting accessibility to businesses, services and Bristol Airport; and
- Road geometry in the A38 corridor limits opportunities to overtake agricultural and slow-moving vehicles leading to longer and unreliable journey times.

Please describe/explain in the box below the impact of not taking forward this scheme (max 200 words).

The consequences of not taking the scheme forward this would be:

- Increased congestion and delays and poor journey time reliability for private and public transport along the A38 and other key routes;
- A negative perception of access to Bristol Airport with a knock-on impact on the reputation of the airport and reducing its potential to grow;
- Decreased use of bus services due to increased unreliability and delays;
- Increased use of minor roads ('rat-runs') to avoid congestion; and
- Adverse environmental impact resulting from congestion, delays and rat-running.

Without the infrastructure proposed by the A38 MRN scheme, a significant amount of pressure will be placed on the existing SRN and local highway network resulting in increasing levels of congestion. This has the potential to negatively impact economic

growth and cause increased levels of pollution and driver stress, not only for people living and working in North Somerset but also for those in the wider region and travelling through the area on the M5 to other destinations. It will also limit the travel choices available to passengers and employees at Bristol Airport and affect the potential to realise the social and economic benefits arising from the airport.

4) Economic Case - Value for Money

Please summarise in the boxes below your current understanding of the likely costs and benefits of the scheme. Please include your estimate of the indicative Benefit Cost Ratio if one is available.

This should cover both monetised and non-monetised costs and benefits.

Please reference the SOBC where relevant and any reports on this to date (please provide hyperlinks or attachments).

If more than one option is still live please detail the relative costs and benefits of each, if available. In doing so, please make clear the age and source of the underlying data and any assumptions.

The latest scheme cost estimate has been converted to a Present Value Cost (in line with Treasury Green Book Guidance) of £21.930m (2010 prices, discounted to 2010). Travel times, vehicle operating costs and indirect tax revenues have all been monetised using TUBA software. The scheme may lead to some slight negative environmental impacts. These have been assessed at a high level and are not thought to be significant due the scheme falling largely with highway boundary.

Indicative Benefit to Cost Ratio (if available)	4.7
Indicative value for money category	Very High

Please outline in the box below the assumptions and uncertainties behind these benefit estimations.

TEE benefits have been estimated using the outputs from a highway assignment model. The model has a 2015 base year and achieves a good level of calibration / validation across the model study area, whilst not quite meeting DfT's Transport Appraisal Guidance (TAG) thresholds. Forecasts have been produced for 2026 and 2036; they are constrained to national forecasts provided by TEMPro and align with TAG, except for not including a variable demand response. Edithmead Roundabout falls on the periphery of the model study area and so has been modelled separately using junction modelling software. Whilst this approach greatly improves the modelling of existing conditions, and what the effects of unconstrained growth would be at the junction, this model is not capable of reflecting reassignment or variable demand effects. To avoid overestimating benefits, journey time benefits at the junction have been constrained to base year levels (i.e. the benefits which would be achieved if the junction opened immediately).

Overall the appraisal methodology is considered to be appropriate for this stage of scheme development, and in some areas our assumptions will lead to a conservative estimate of scheme benefits.

Aside from the uncertainties arising from the chosen modelling approach, other key uncertainties are as follows:

- Scheme costs increases could reduce the BCR – an optimism bias of 44% has been used which is appropriate at this stage of appraisal.
- Changes in traffic growth – the scheme benefits arising from improvements in the vicinity of the airport will be most sensitive to growth at the airport, whilst generally the BCR is sensitive to growth across the modelled area. These sensitivities will be tested at Outline Business Case (OBC) stage.
- A number of impacts have not been monetised at this stage. From the preliminary work completed, these are all expected to be small and overall are unlikely to have a material impact on the scheme's VfM.

5) Financial Case

Cost of producing OBC

Please provide a breakdown of the estimated costs of scheme development from inception to Outline Business Case in the following format.

Heading	**Spend to date and expected spend (to date of funding decision)**	**Further spend required to get to Outline Business Case**
North Somerset Council	£27,500	£25,000
Somerset County Council	£10,000	£25,000
MRN SOBC	£39,450	
Highway Design		£100,000
Data Collection		£15,000
Traffic Modelling		£90,000
Consultation		£7,000
Environmental Surveys		£50,000
Environmental Assessment Report		£95,000
TOTAL	**£76,950**	**£407,000**

It may be difficult to determine the precise date when scheme development started but we are interested in recent costs on this specific scheme. So please do not include:

- Historic costs. For example, if a body of work was undertaken ten years ago and shelved only to be restarted a year ago, only include costs from the restart.
- The cost of developing wider local transport strategies even if this scheme emerged from them.
- The cost of local model development for wider purposes. Only modelling specifically for this scheme should be included.

Development funding request

Please break the total of producing the OBC into financial years and indicate how much is being sought from DfT. (Please express in £m to three decimal points)

	2019/20	2020/21	2021/22	2022/23	TOTAL
Funding sought from DfT	£0.192m	£0.065m	-	-	£0.257m
Local funding	£0.075m	£0.075m	-	-	£0.150m
TOTAL	**£0.267m**	**£0.140m**	**-**	**-**	**£0.407m**

Please confirm whether the contribution to development funding sought from DfT can be capitalised (you may provide additional comments or qualifications as necessary)?	Yes

Capital cost of scheme

Please provide your best estimate of the capital cost of the scheme (excluding the costs of producing an OBC above).

We recognise that the scope and cost of the scheme may be approximate at this stage, but, if possible, please provide:

- The cost of each option if more than one. And please express as a range if necessary.
- Out-turn prices but ensure that the current prices and inflation uplift can be separately identified.
- Please include and separately identify the preparation costs (between OBC and start of construction).
- Please include a reasonable estimate of risk/contingency but do not add an additional optimism bias uplift (reference web-tag guidance if unclear).
- Explain the basis of the cost estimate (e.g. is it derived from detailed bills of quantities, benchmarked against other schemes etc).

The following format would be helpful:

	Preparation costs (between OBC and construction)	Land purchase	Construction costs	TOTAL
Base cost	£2,935,646	£0	£16,305,359	£19,241,005
Risk	£296,616	£0	£1,647,484	£1,944,100
Inflation	£216,688	£0	£2,005,371	£2,222,059
TOTAL	**£3,448,950**	**£0**	**£19,958,214**	**£23,407,164**

Affordability (LLM schemes only)

Please provide in the box below a brief summary of why the scheme would be unaffordable other than via this bid to the LLM fund. Proposed LLM schemes should be single schemes that can only be delivered or justified as a whole. The Department's contribution will normally be above £50 million for LLM schemes.

Not applicable – this an MRN Bid

6) Management Case

Outline Business Case Delivery

Timeline for production of OBC	Due Date
Production of SOBC, OAR and ASR (if not already produced).	Completed
Production of LMVR.	Completed
Completion of base model (if necessary)	Completed
Forecasting Report	Spring 2020
Start and end of public consultation	Spring/Summer 2020
Adoption of preferred option	Summer/Autumn 2020
Submission of OBC	Autumn 2020

Outline Business Case Governance

Please set out the basic governance arrangements for production of the OBC, roles, responsibilities, resources etc.

The A38 MRN OBC will be managed under the existing corporate project procedures and structures at North Somerset Council and Somerset County Council (the 'Councils'). This allows oversight and monitoring at the most senior level to ensure that the business case is brought together and driven forward. Infrastructure delivery is recognised in corporate Council performance management systems as key priorities.

The Councils' requirements are broadly similar. North Somerset Council has an established Major Projects Delivery Function and a Head of Major Projects (Jonathan Kirby). This has built upon the Council's successful previous major project delivery to further enhance the resource capacity and capability to meet the needs of major projects being delivered seamlessly across the functions of highways and built environments supporting the Council's ambition to drive growth and regeneration across North Somerset.

The council's governance structure has four tiers:

Tier 1 represents the council's most senior decision-making bodies. Given the financial value of the MRN Scheme, key decisions will require **Full Council authority**. Operational delivery decisions are likely to be delegated to Executive, Executive Member or Director level.

A **Project Sponsor** will be appointed who will be accountable for ensuring that the work is governed effectively and delivers the objectives that meet identified needs; importantly the sponsor owns the business case. The Project Sponsor for the A38 MRN Scheme is the Head of Transport and Infrastructure, Colin Medus.

The **Senior Responsible Owner** (SRO) for the MRN Scheme is Jonathan Kirby, Head of Major Projects. The SRO has the overall accountability for the delivery of the project ensuring it remains focused on achieving its objectives.

Tier 2 comprises two Boards: the **Driving Growth Board**, which sets strategy for growth and economic development; and the **Investment & Infrastructure Board** which provides senior officer sign-off and financial monitoring for projects to be included in the Council's capital programme. They are attended by North Somerset's Section 151 officer and the Director of Development & Environment.

Monthly highlight reporting will provide updates on the capital delivery and financial elements of the MRN scheme and the wider delivery of infrastructure and development.

Tier 3 of the project governance structure provides the primary juncture for project delivery with the MRN bid and project sitting within the **Strategic Infrastructure Programme Board** which is chaired by Jonathan Kirby, North Somerset's Head of Major Projects.;.

The Project Board meets monthly and provides high level challenge and independent assessment. Project communications, consultation and stakeholder management are all owned by the Project Board.

Tier 4 is the Project Team level which is managed and led by Senior Project Managers as part of the day to day management of the project. A **Working Group** will be established along with separate teams with officers and consultants representing appropriate disciplines for each project led by specialist Project Managers.

The **A38 MRN Scheme Project Manager (PM)** is responsible for managing delivery of the business cases and scheme delivery. The PM leads and manages the project team with the authority and responsibility to run the project on a day-to-day basis. The MRN Scheme PM is Alex Fear, Senior Major Projects Manager.

Project Delivery Teams are responsible for the delivery of the business cases and projects. The teams include both local authority, consultant and developer members (where appropriate) to ensure the council maintains the capacity to deliver over the long term.

The teams will meet monthly (or as needed) to review progress reports, risks and issues, including those that need to be escalated to the SRO and Board.

Somerset County Council aligns with these arrangements but will be detailed further at OBC stage.

Scheme Delivery

Please state the estimated delivery milestones as below, assuming MRN or LLM Programme Entry is granted at least 3 months after submission of the OBC. Please amend/add to milestones as necessary.

Submission of Outline Business Case (OBC) (for subsequent milestones assume at least 3 months from OBC to programme entry decision).	Autumn 2020
Submission of planning application (by others)	Summer/Autumn 2020
Determination of planning decision.	Autumn/Winter 2020
Publication of scheme orders/CPOs (see section 7 below).	Winter 2020
Completion of Public Inquiry (if not applicable, see section 7).	n/a
Confirmation of all statutory orders and consents.	Spring 2021
Completion of procurement.	Spring 2021
Full Business Case submitted to DfT.	Summer 2021
Start of Construction (assume 3 months from FBC to funding commitment).	Autumn 2021
Scheme open to public.	Autumn 2022

Note: If planning consent, scheme orders, CPOs or a public inquiry are not required please insert ‘n/a’ and provide an explanation in Section 7 below.

7) Orders and consents

Do you envisage that CPOs will be necessary? If not please explain here or insert appropriate reference to relevant SOBC paragraph.	Not at this stage. Any land required for the scheme is likely to be acquired by agreement.
Are other statutory/highways orders required that would normally require a Public Inquiry (e.g. Side Roads Orders, Transport and Works Act Order). Please specify.	No
What other statutory orders/consents are required? (e.g. heritage, environmental consents).	Traffic Regulation Orders
If CPO and other orders are required does your timetable assume that there will be a public enquiry? If not please explain here or insert appropriate reference to SOBC document.	No. Land acquisition is limited in area and is anticipated to be acquired by agreement.

8) Stakeholder Support

Please provide evidence of support for this scheme prior to the development of this bid, referencing activity from businesses, campaign groups, MPs etc.

It would be helpful to include any relevant links to news stories, campaign websites etc.

The Councils have developed this SOBC in consultation with the BSWEL Project Board comprising North Somerset Council, Somerset County Council, Bristol Airport, Sedgemoor District Council, Highways England, Network Rail, Bristol City Council and the West of England Combined Authority (WECA). This joint working also extends to a much wider range of partners, including Western Gateway SNTB, South West Peninsula SNTB, West of England Local Enterprise Partnership (LEP), developer forums, Registered Providers, the Strategic Solutions Forum (statutory undertakers), Natural England and NHS colleagues, amongst others.

Does this scheme have implications for Highway England or Network Rail infrastructure? If so, using the box below describe what discussions have taken place with either of these organisations to facilitate this scheme?

The A38 MRN scheme has no direct impact on any Highways England or Network Rail infrastructure. Highways England is a member of the BSWEL Project Board (upon which the MRN scheme has been derived) and is fully aware of elements of the scheme and is supportive of all details. Improvements at A38/M5 J22 Edithmead will provide a benefit to the SRN and to traffic using M5 J22. Additionally, specific engagement has and will continue to take place in relation to the MRN bid with the local Highways England team.

9) Section 151 Officer Declaration

As Section 151 Officer for North Somerset Council I declare that the cost estimates quoted in this bid are accurate to the best of my knowledge and that North Somerset Council:

[1] has allocated sufficient budget to develop the scheme's OBC on the basis of its proposed funding contribution.

[2] accepts responsibility for meeting any costs of developing the OBC over and above the DfT contribution requested, including potential cost overruns, and the underwriting of any third party contributions.

[3] accepts that no further increase in DfT funding will be considered beyond the maximum contribution requested.

Name:	Signed:

Please email this completed form to:

LT.plans@dft.gov.uk

Please note that the size limit for attachments to a single incoming email to DfT is 20mb. If your submission is larger than this please submit separate emails, use a zip folder, or convert large files to an alternative format.

We would prefer it if annexes are separated out into individual pdf documents.

0.3. PART TWO: CHECKLIST

Please complete this checklist by referencing locations where the relevant material can be found in the SOBC document.

Strategic Case

Item		Section/Page
A detailed description of the physical scope of the scheme.		Section 2.2, p.25
The objectives of the scheme.		Section 2.6, p.34
A description of the process by which the scheme came to be identified as the preferred option for meeting those objectives including why alternative options were discarded.		Section 2.8, p.37
How the objectives of the scheme align with the MRN, LLM and national transport objectives We do not expect all schemes to meet all of these objectives so please mark n/a if necessary.	• To ease congestion and provide upgrades on important national, regional or local routes.	Section 2.7, para.2.7.1, p.34
	• To unlock economic growth, job creation opportunities, and support rebalancing.	Section 2.7, para.2.7.6, p.35
	• To enable the delivery of new housing developments.	Section 2.7, para.2.7.10, p.36
	• To support all road users.	Section 2.7, para.2.7.13, p.36
	• To support the Strategic Road Network.	Section 2.7, para.2.7.17, p.37
For schemes that directly aim to facilitate commercial or housing development on specific sites, details of the sites, current planning status, status of developer commitment and the expected impact of the scheme.		Section 2.11, p.41
The impact the scheme would have on:	• Access to planned HS2 stations or sites.	n/a
	• Access to International Gateways.	Section 2.12, para.2.12.4, p.42
If relevant, details of public consultation activities on the scheme to date, and key findings including how any key questions/concerns have been addressed.		Section 2.15, p.43

Economic Case

Not all of the following documents are required at the SOBC stage.

If they have been produced please reference their location within the SOBC and/or supply the necessary documents.

Item	Section/Page
Option Assessment Report (OAR)	Appendix B
Data Collection Report	Appendix E
Local Model Validation Report (LMVR)	Appendix E
Present Year Validation Report (if required)	n/a
Forecasting Report	Appendix F
Economic Appraisal Report	Appendix G
Social and Distributional Impacts Assessment	n/a

Management Case

Item	Section/Page
Governance structure (including SRO, Project Board, Project Manager, and other key roles, and resourcing levels).	Section 4.4, p.58
Detailed Project Plan	Section 4.5, p.64
Risk Management Detailed Risk Register	Section 4.13, para.4.13.5, p.76
Risk Management Narrative to explain the most significant risks, how they are being managed and their potential impact on time and budget.	Section 4.13, para.4.13.8, p.76
Risk Management Risk management strategy	Section 4.13, para.4.13.1, p.75
Project Assurance e.g. Gateway Reviews	Section 4.10, para.4.10.14, p.70
Outline evaluation plan including a statement of core evaluation objectives.	Section 4.9, p.67

Commercial Case

Item	Section/Page
Description of the preferred procurement strategy	Section 5.3, p.80
Rational for the selection of preferred procurement route against possible alternatives	Section 5.4, p.81
Explanation of how costs and risks will be shared throughout the contract	Section 5.5, p.87

Financial Case

Item	Section/Page
Cost breakdown	Section 6.3, para.6.3.3, p.88
Details of and justification for inflation assumption used.	Section 6.3, para.6.3.7, p.90
Risk Assessment	Section 6.3, para.6.3.8, p.90
Evidence of potential third-party contributions	Section 6.3, para.6.3.9, p.90

0.4. CHECKLIST OF APPRAISAL AND MODELLING SUPPORTING MATERIAL

This checklist does NOT require completion for an SOBC, but we have detailed below where the relevant information can be found in this document and which information will be presented at OBC.

Option Assessment

Item	Section/Page
An Option Assessment Report to include steps 1 to 8 set out in WebTAG – the transport appraisal process.	Appendix B and Appendix H

Modelling

Item		Section/Page
An Existing Data and Traffic Surveys Report to include:		
	Details of the sources, locations (illustrated on a map), methods of collection, dates, days of week, durations, sample factors, estimation of accuracy, etc.	Appendix E – Section 8
	Details of any specialist surveys (e.g. stated preference).	n/a - No specialist surveys
	Traffic and passenger flows; including daily, hourly and seasonal profiles, including details by vehicle class where appropriate.	Appendix E – Appendix 2
	Journey times by mode, including variability if appropriate.	Appendix E – Appendix 3
	Details of the pattern and scale of traffic delays and queues.	Appendix E – Section 9.6
	Desire line diagrams for important parts of the network.	Not provided at SOBC stage
	Diagrams of existing traffic flows, both in the immediate corridor and other relevant corridors.	Not provided at SOBC stage
An Assignment Model Validation Report to include:		
	Description of the road traffic and public transport passenger assignment model development, including model network and zone plans, details of treatment of congestion on the road system and crowding on the public transport system.	Appendix E – Section 3, 4 and 7
	Description of the data used in model building and validation with a clear distinction made for any independent validation data.	Appendix E – Section 8 and 9
	Evidence of the validity of the networks employed, including range checks, link length checks, and route choice evidence.	Not provided at SOBC stage
	Details of the segmentation used, including the rationale for that chosen.	Appendix E – Section 4 (Table 1)
	Validation of the trip matrices, including estimation of measurement and sample errors.	Appendix E – Section 9.3
	Details of any 'matrix estimation' techniques used and evidence of the effect of the estimation process on the scale and pattern of the base travel matrices.	Appendix E – Section 9.2

Item		Section/Page
	Validation of the trip assignment, including comparisons of flows (on links and across screenlines/cordons) and, for road traffic models, turning movements at key junctions.	Appendix E – Table 3
	Journey time validation, including, for road traffic models, checks on queue pattern and magnitudes of delays/queues.	Appendix E – Appendix 3
	Detail of the assignment convergence.	Not provided. All models converge in line with TAG Unit M3.1
	Present year validation if the model is more than 5 years old.	N/a
	A diagram of modelled traffic flows, both in the immediate corridor and other relevant corridors.	Not provided at SOBC stage
A Demand Model Report to include:		
	Where no Variable Demand Model has been developed evidence should be provided to support this decision (e.g. follow guidance in WebTAG M2 Variable Demand Modelling – section 2.2).	Not provided at SOBC stage
	Description of the demand model.	
	Description of the data used in the model building and validation.	
	Details of the segmentation used, including the rationale for that chosen. This should include justification for any segments remaining fixed.	
	Evidence of model calibration and validation and details of any sensitivity tests.	
	Details of any imported model components and rationale for their use.	
	Validation of the supply model sensitivity in cases where the detailed assignment models do not iterate directly with the demand model.	
	Details of the realism testing, including outturn elasticities of demand with respect to fuel cost and public transport fares.	
	Details of the demand/supply convergence.	
A Forecasting Report to include:		
	Description of the methods used in forecasting future traffic demand.	Appendix F - Section 2 -
	Description of the future year demand assumptions (e.g. land use and economic growth - for the do minimum, core and variant scenarios).	Appendix F Section 4
	An uncertainty log providing a clear description of the planning status of local developments	Not provided at SOBC stage
	Description of the future year transport supply assumptions (i.e. networks examined for the do minimum, core scenario and variant scenarios).	Appendix F – Section 3 and Section 5
	Description of the travel cost assumptions (e.g. fuel costs, PT fares, parking).	Not provided at SOBC stage but aligns with TAG databook
	Comparison of the local forecast results to national forecasts, at an overall and sectoral level.	Not provided at SOBC stage
	Presentation of the forecast travel demand and conditions for the core scenario and variant scenarios including a diagram of forecast flows for the do-minimum and the scheme options for affected corridors.	Not provided at SOBC stage

Item		Section/Page
	If the model includes very slow speeds or high junction delays evidence of their plausibility.	Appendix F – Section 8
	An explanation of any forecasts of flows above capacity, especially for the do-minimum, and an explanation of how these are accounted for in the modelling/appraisal.	Not provided at SOBC stage
	Presentation of the sensitivity tests carried out (to include high and low demand tests).	Not provided at SOBC stage

Cost Benefit Analysis

Item	Section/Page
A clear explanation of the underlying assumptions used in the Cost Benefit Analysis.	Section 3.5, p.46
Information on local factors used. For example the derivation of growth factors and annualisation factors in TUBA (to include full details of any calculations).	Appendix G – Section 4.4
A diagram of the network (if COBALT used).	Not provided at SOBC stage
Information on the number of junctions modelled (if COBALT used), for both the do-minimum and the do-something.	Not provided at SOBC stage
Details of assumptions about operating costs and commercial viability (e.g. public transport, park and ride, etc.).	n/a
Full appraisal inputs/outputs (when used, COBALT and/or TUBA input and output files (.tbn and .out) in text format should be supplied).	Not provided at SOBC stage
Evidence that TUBA/COBALT warning messages have been checked and found to be acceptable.	Not provided at SOBC stage
Spatial (sectoral) analysis of TEE benefits.	Not provided at SOBC stage
Details of the maintenance delay costs/savings.	Not provided at SOBC stage
Details of the delays during construction.	Not provided at SOBC stage
Appraisal tables (AMCB, PA, TEE) in excel format.	Appendix J

Economic Case Assessment

Item	Section/Page
A comprehensive Appraisal Summary Table in excel format.	Section 3.6, p.47
Assessment of Economic impacts.	n/a
Economic impacts worksheets.	n/a
Assessment of Environmental impacts, to include an environmental constraints map.	Section 3.7, p.48 and Appendix I
Environmental impacts worksheets.	n/a
Assessment of Safety impacts and the assumed accident rates presented (when used, COBALT output should be provided).	n/a
Assessment of Social impacts.	n/a
Assessment of Distributional impacts.	n/a
Social and distributional impacts worksheets (including DI screening pro forma).	n/a
Cost pro forma	Not provided at SOBC stage

1. INTRODUCTION

1.1. MAJOR ROAD NETWORK FUNDING

1.1.1. In December 2018 the Department for Transport (DfT) published "Investment Planning Guidance for the Major Road Network and Large Local Majors Programmes"[2] and invited local authorities to bid for funding to support the proposed Major Road Network in England.

1.1.2. The Major Road Network (MRN) has five central objectives which build on the commitments made in the DfT Transport Investment Strategy[3] . Those objectives are to:

- Reduce congestion – alleviating local and regional congestion, reducing traffic jams and bottlenecks;
- Support economic growth and rebalancing - supporting the delivery of the Industrial Strategy[4], contributing to a positive economic impact that is felt across the regions;
- Support housing delivery - unlocking land for new housing developments;
- Support all road users - recognising the needs of all users, including cyclists, pedestrians and disabled people; and
- Support the Strategic Road Network – complementing and supporting the existing SRN by creating a more resilient road network in England.

1.1.3. Through the Sub-National Transport Bodies (SNTBs), local highway authorities were invited to submit scheme business cases for proposals that support the objectives listed in Table 1-1.

1.1.4. The types of schemes eligible for MRN funding are:

- Bypasses or new alignments which alleviate congestion and make through journeys quicker, safer and more reliable.
- Missing Links – new roads that link existing stretches of the MRN or Strategic Road network (SRN).
- Widening of existing MRN roads where there is a known congestion point or safety risk.
- Major structural renewals on roads, bridges, tunnels and viaducts on MRN roads, where significant work needs to be done to renew the carriageway or prevent closure or weight restrictions.
- Major junction improvements such as a grade separation that would improve the safety, performance or flow of an MRN road.
- Variable message signs, traffic management and the use of smart technology and data to raise the performance of the network.

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765680/mrn-investment-planning-guidance.pdf

[3] https://www.gov.uk/government/publications/transport-investment-strategy

[4] https://www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future

- Packages of improvements which may include elements of safety, widening, junction improvements and new alignment.

Table 1-1 – Requirements for MRN Funding

Objective	Criteria
Reducing Congestion	▪ Alleviate Congestion ▪ Take account for impacts on air quality, biodiversity, noise, flood risk, water quality, landscape and cultural heritage sites
Support Economic Growth & Rebalancing	▪ Industrial Strategy: Supports regional strategic goals to boost economic growth ▪ Economic Impact: Improve ability to access new or existing employment sites ▪ Trade & Gateways Impact: Improve international connectivity, e.g. access to ports & airports
Support Housing Delivery	▪ Support the creation of new housing developments by improving access to future development sites and boosting suitable land capacity
Supporting All Road Users	▪ Delivering benefits for public transport and non-motorised users, including cyclists, pedestrians and disabled people ▪ Safety Benefits: Ability to reduce the risk of deaths/serious injuries for all users of the MRN
Supporting the SRN	▪ Improved end to end journey times across both networks ▪ Improved journey time reliability ▪ Improved SRN resilience

Source: Investment Planning Guidance for the Major Road Network and Large Local Majors Programmes, DfT, 2018, p.7.

1.1.5. The guidance states that the DfT contribution for MRN schemes will normally be between £20 million and £50 million, although the lower threshold will not be applied rigidly.

1.1.6. The MRN proposals will require a local or third-party contribution towards the final cost of the scheme. As a general guideline, DfT indicates that MRN schemes should aim for the local or third-party contribution to be at least 15% of the total scheme costs.

1.1.7. Where schemes are partly on the SRN and on the local road network, the Department will aim to consider interventions for the MRN across all relevant programmes without the need for multiple submissions on the part of the highway authority. This may require authorities to provide Highways England or others with supporting evidence for wider processes examining the needs of the SRN.

1.2. REGIONAL EVIDENCE BASE

1.2.1. To support MRN schemes, a Regional Evidence Base (REB) is required to facilitate a long-term strategic approach to the investment needs of a region and to make best use of the funding to deliver the best possible outcome for users.

1.2.2. The REBs are developed by the Sub-National Transport Bodies (SNTBs) as part of their Transport Strategies. This A38 MRN scheme is supported by the Western Gateway and South West Peninsula SNTBs.

1.3. BUSINESS CASE REQUIREMENTS

1.3.1. The REB will present the overall picture of the MRN and its strategic needs. Funding decisions will be made based on the evidence of individual schemes and the scheme's business case at the various stages of development.

1.3.2. Priority schemes scheduled to start before April 2023 need to be developed to at least Strategic Outline Business Case (SOBC) stage and should be submitted with the REB. The DfT will make decisions based on the business case of individual schemes and those that are successful at the SOBC stage will be eligible to apply for a contribution towards development funding.

1.3.3. To apply for development funding, scheme promoters must complete the pro-forma for SOBC submissions for the MRN/LLM programmes alongside the submission of a SOBC.

1.3.4. The requirements of an SOBC are defined in the DfT's "Transport Business Case: Assessment and Process Procedures"[5] and in particular the "The Transport Business Cases" document of January 2013[6]. The latter document provides a description of the approach followed by the Department and its ministers when making major investment decisions. It informs those developing proposals for investment and who wish to understand better the underlying decision making process, and provides a framework detailing the requirements for SOBC content.

[5] https://www.gov.uk/government/publications/transport-business-case

[6] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/85930/dft-transport-business-case.pdf

1.4. STRATEGIC OUTLINE BUSINESS CASE

1.4.1. The purpose of the Strategic Outline Business Case (SOBC) is to:

- define the scope of the project/programme and its outputs and benefits;
- make the case for change;
- confirm the strategic fit with the Departmental business plan and wider Government objectives;
- state the assumptions made;
- set out how achievements will be measured;
- outline options, including innovative options, to tackle the problem and carry out initial sift of options;
- consider and confirm that a robust project governance structure is in place and that the project is affordable;
- outline the sequence in which the project and benefits will be delivered;
- identify and analyse its stakeholders; and
- confirm the assurance arrangements[7].

1.5. A38 MRN SCHEME

1.5.1. This document presents the Strategic Outline Business Case for the A38 MRN Scheme extending over 32km (20 miles) of the A38 through North Somerset and Somerset between the A4174 Colliters Way (South Bristol Link) and Edithmead Roundabout (M5 J22).

1.5.2. The A38 provides access to Bristol Airport which in 2018 was used by over 8.6 million passengers[8]. In 2017, the airport supported 15,000 jobs and contributed £1.3bn+ to the regional economy in the South West and South Wales[9].

1.5.3. The A38 MRN Scheme supports planned housing and economic growth in the West of England's Joint Spatial Plan (in which North Somerset is a partner) and in Sedgemoor and Somerset to support both local and airport growth. The Western Gateway SNTB has identified access to Bristol Airport as a key challenge which needs to be addressed to improve the attractiveness of the airport and improve international connectivity.

1.5.4. The MRN scheme is part of the main highway corridor of the Bristol South West Economic Link Study (BSWEL) which presents an investment case to significantly improve the A371, A368 and A38 road corridor between Weston-super-Mare, Bristol Airport and Bristol.

[7] The Transport Business Cases, DfT, January 2013, p.8, para.1.17.

[8] https://www.bristolairport.co.uk/about-us/news-and-media/facts-and-figures

[9] Your Airport: your views – A World of Opportunities: Preparing a new Master Plan: Public Consultation, Bristol Airport, November 2017, p.21.

1.5.5. Developed by the Councils, Bristol Airport and their partners[10], the BSWEL study aims to assist in the delivery of and support economic and housing growth, and the development of Bristol Airport and the Junction 21 Enterprise Area. The catalyst for this work has been the desire to consider an infrastructure project that supports development, stimulates local economic growth and improves network resilience.

1.5.6. This SOBC has been prepared by North Somerset Council and Somerset County Council for the A38 MRN. It is seeking funding for the improvement of four junctions on the A38 route section (including Edithmead Roundabout at M5 J22) and on-line improvement and safety schemes.

1.5.7. The A38 MRN scheme will unlock economic growth and benefits, and will also improve the economic potential of the area through improvements to journey time reliability. The Scheme has a total cost of £23.4m and economic analysis shows it will return a Very High Benefit Cost Ratio (BCR) of 4.7.

[10] Bristol Airport, the West of England Combined Authority, Bristol City Council, Sedgemoor District Council, Highways England and Network Rail.

2. STRATEGIC CASE

2.1. INTRODUCTION

2.1.1. The A38 between Bristol, Bristol Airport and M5 J22 passes through a rural area interspaced with settlements that have built up along the highway. The design of the route is of varying standards. It is generally provided as a single carriageway road with short sections of two lanes in one direction and a single lane in the other; some sections south of the airport are single carriageway with a wide, hatched out central reserve.

2.1.2. This varying highway standard, combined with junctions operating close to capacity leads to varying travel speeds and unreliable journey times. The A38 is also a signed diversion route for M5 traffic between M5 J18 and J22. A congested highway network south of Bristol means that the A38 is not always resilient and able to deal with highway incidents and heavy traffic, such as may occur during weekday peak periods, and closures and holiday traffic congestion on the M5. Unreliable journey times are a key barrier to the to the effective operation of labour markets, supporting productivity gains and encouraging inward investment.

2.1.3. The package of measures for the A38 MRN is aimed at removing pinch points, providing additional capacity and improving safety close to Bristol Airport and along the A38 between Bristol, the Airport and A38/M5 J22 (Edithmead) to improve journey times, journey reliability and wider network resilience. In turn the improvements will support economic growth, and the delivery of new housing and employment on both committed sites and those identified in the West of England Joint Spatial Plan.

2.1.4. The A38 MRN Scheme SOBC is a joint bid by North Somerset Council and Somerset County Council (the Councils), these being the respective highway authority for their council areas.

2.2. SCHEME DESCRIPTION

2.2.1. The MRN scheme is shown in Figure 2-1, extending over 32km (20 miles) between the A4174 Colliters Way (South Bristol Link) and Edithmead Roundabout (M5 J22).

2.2.2. Anticipated benefits from the scheme include:

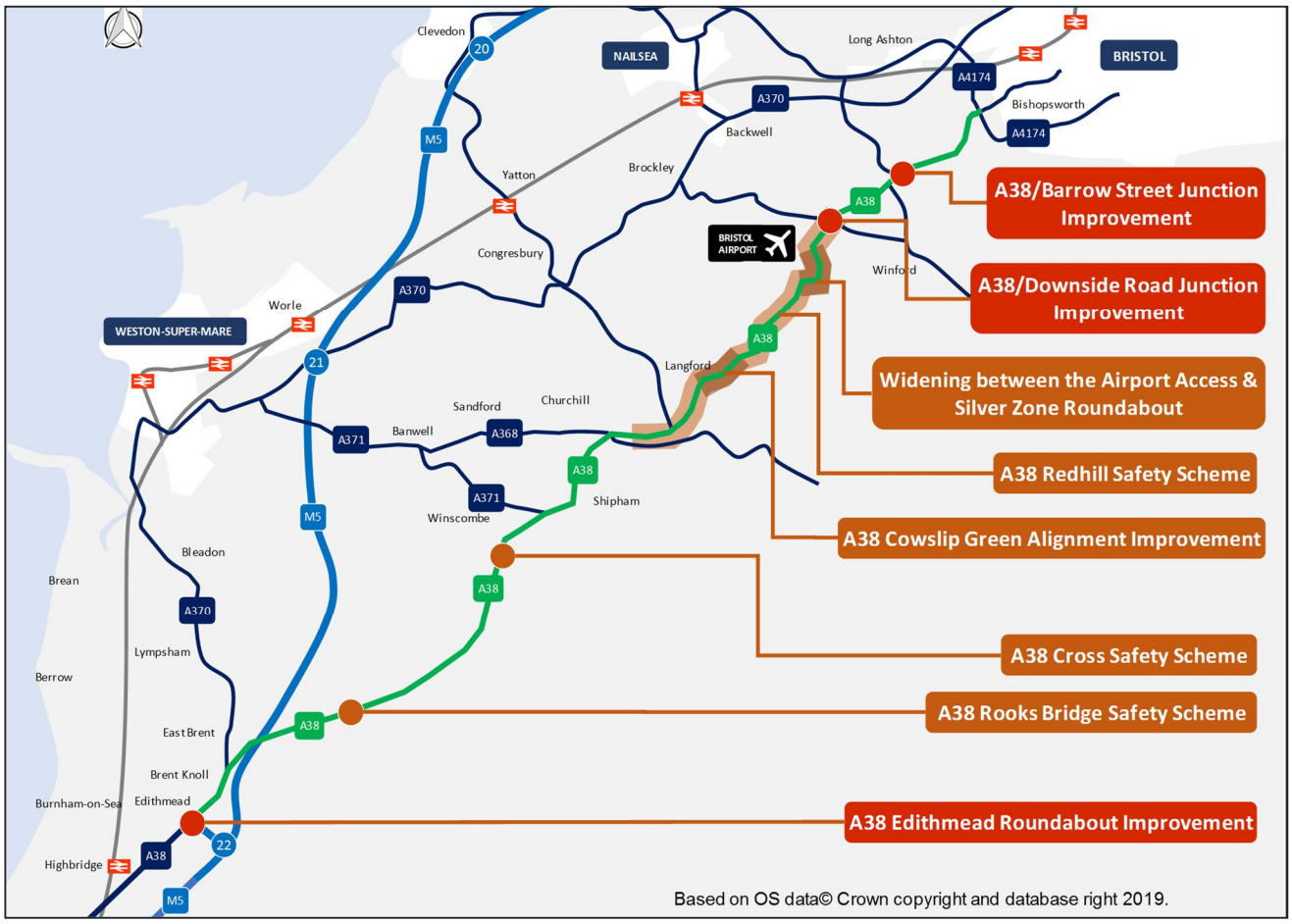
- reduced travel time and vehicle operating costs;
- improved road safety;
- enhanced resilience and reliability;
- supporting housing and economic growth; and
- better journey quality.

2.2.3. The multiple role of the A38 corridor enhances value for money and regional GVA and provides scope for a wider positive impact to the regional economy, including:

- Improved access to Bristol Airport, which is an international gateway;
- Improved links between key centres of population;
- A better commuter corridor that also links rural areas to employment;
- Provides for proposed strategic housing development locations; and
- Improves regional connectivity.

2.2.4. The MRN scheme has minimal environmental impact as it is largely online and within the existing highway boundary.

Figure 2-1 - Schematic of the A38 MRN Scheme



2.2.5. The scheme comprises the following improvements (drawings are included in Appendix A):

A38 / BARROW STREET JUNCTION IMPROVEMENT

2.2.6. The A38 / B3130 Barrow Street junction is an existing traffic signal controlled junction. The SOBC scheme considers two options that will be replaced with a preferred scheme for the OBC following public consultation:

- Option 1: Drawing Number (Drg.No.) 70056968-HGN-SK-041 proposes improving the bus stop adjacent to the northbound carriageway to make it easier and safer for buses to pull back into traffic and installing a MOVA traffic signal controller to provide additional capacity;
- Option 2: Drg.No. 70056968-HGN-SK-042 proposes a more significant change by removing the traffic signals and permitting only a left turn in and left turn out of Barrow Street. The bus stop is also relocated.

2.2.7. This scheme can be provided within the existing highway boundary. Increasing mainline capacity will improve journey reliability and reduce delays to through traffic on this section of the A38.

A38 / DOWNSIDE ROAD JUNCTION IMPROVEMENT

2.2.8. As detailed earlier, proposed improvements at A38 Downside Road, West Lane and Dundry Lane have been identified for the JSP and will address an existing congestion issue at this junction, located immediately north of and connecting to the Bristol Airport access roundabout.

2.2.9. The improvement shown in Drg.No. 70056968-HGN-SK-040 would provide a reconfigured traffic signal controlled junction and an additional traffic lane on all arms at Downside Road. To secure additional capacity for MRN traffic, the right turn from West Lane would be banned with northbound traffic instead needing to turn left and complete a U-turn at the airport access roundabout.

2.2.10. This scheme requires some third party land that will be secured through negotiation. On completion, the scheme will provide additional highway capacity and significant benefits to MRN traffic with reduced queueing, delays and congestion and better journey time reliability.

WIDENING BETWEEN THE AIRPORT ACCESS & SILVER ZONE ROUNDABOUT

2.2.11. The northbound entry to the airport access roundabout can be affected by queues blocking back from the existing Downside Road junction which affects the northbound traffic and the operation of airport bus services between the Silver Zone car parks and the airport terminal. This situation is exacerbated when the A38 is used for diverted ex-M5 traffic arising from an incident or for maintenance works on the motorway.

2.2.12. An improvement to the A38 across the end of the airport runway (see Drg.No. 70056968-HGN-SK-024) between the airport access and Silver Zone roundabouts would provide additional northbound lanes at the airport access roundabout to (a) reduce delay and congestion and (b) to complement and maximise the capacity benefits secured with the A38/Downside Road improvement. The arrangement would provide a dedicated left turn lane into the airport and two ahead lanes for MRN traffic on the A38. The scheme also provides a foot and cycleway adjacent to the road carriageway and between the roundabouts.

2.2.13. These works can be wholly accommodated within the existing highway boundary and will not affect the hedgerows alongside the A38 carriageway. This scheme, alongside the Downside Road improvement, will contribute to reduced overall journey times for MRN traffic on the A38.

A38 REDHILL SAFETY SCHEME

2.2.14. Drg.No. 70056968-HGN-SK-023 details a safety scheme on the A38 at Redhill. Here the highway climbs as two lanes northbound towards the airport with a single lane southbound. The A38 twists through this section where there are a number of turning, junctions and property accesses. This has resulted in a number of incidents which this improvement seeks to address. With this scheme, the management of the A38 and side road access will be improved to address safety concerns with no detrimental impact to traffic on the MRN but will improve road safety, reliability and resilience.

2.2.15. This scheme can be provided within the existing highway boundary.

COWSLIP GREEN ALIGNMENT IMPROVEMENT

2.2.16. The A38 improvement at Cowslip Green (shown in Drg.No. 70056968-HGN-SK-017) would increase the radius of the bend in the A38 to sustain traffic speeds for MRN traffic. It would reprovide the bus stops and improve the visibility and safety for traffic emerging from Cowslip Green onto the A38. The carriageway made redundant by the improvement would be returned to landscaping.

2.2.17. The improvement can be delivered within the existing highway boundary and would not affect any trees or hedgerows. As with the Redhill scheme, this improvement will improve safety with no detrimental impact to traffic on the MRN and will improve reliability and resilience.

A38 CROSS SAFETY SCHEME

2.2.18. The A38 Cross safety scheme shown in Drg.No. 70056968-HGN-SK-044 addresses safety issues with improved road signing and lane markings and providing pedestrian refuges, helping to ensure a safer, more reliable and resilient network. All works are within the existing highway boundary.

A38 ROOKS BRIDGE SAFETY SCHEME

2.2.19. The A38 Rooks Bridge safety scheme (Drg.No. 70056968-HGN-SK-043) provides improved road signing and lane markings and reduces vegetation adjacent to the carriageway to improve visibility assisting in overall network safety, reliability and resilience. All works are within the existing highway boundary.

EDITHMEAD ROUNDABOUT IMPROVEMENTS

2.2.20. The A38 Edithmead Roundabout is where the A38 to the south of Bristol meets the M5 at J22. The roundabout experiences weekday peak period congestion and holiday period congestion as it provides access to the holiday and caravan parks at Burnham-on-Sea and Brean.

2.2.21. The existing roundabout operates under conventional control and has two circulating traffic lanes. During the weekday morning peak period traffic queues and delays are located on the B3140 eastbound from Burnham and slow-moving traffic forms on the A38 southbound from Bristol Airport and Weston-super-Mare. In the weekday evening peak period the high circulating traffic volumes from the M5 to Burnham and towards the A38 northbound cuts off the northbound entry to the roundabout from the A38 Highbridge causing queue and delay on this arm.

2.2.22. In addition, congestion also occurs on the M5 J22 link from the motorway towards the roundabout entry. This link road is relatively short at 135m; northbound and southbound ex-motorway traffic merges on the link road before arriving at the roundabout. This results in traffic congestion and queues that do occasionally extend back onto the motorway carriageways, especially during holiday periods.

2.2.23. The roundabout forms the southern extent of the A38 MRN. An improvement is shown in Drg.No. 70056968-HGN-SK-037 to provide full traffic signal control, road widening and additional lanes on all entries, three circulating lanes and spiral road markings to better manage traffic flows onto and within the roundabout.

2.2.24. The scheme as currently designed is within the existing highway boundary. Overall it will significantly reduce delays and congestion at Edithmead Roundabout to the benefit of the MRN and SRN (M5).

2.3. BUSINESS STRATEGY

2.3.1. The A38 provides an important economic link between Bristol and Somerset and the communities south of Bristol. It is a key route to Bristol Airport and is a signed diversion route for the M5 motorway between M5 J22 and J18 (a diversion route length of 46km / 29 miles).

2.3.2. Congestion and road safety on the A38 corridor to the south of Bristol are highlighted as cross-boundary issues of concern in the West of England Joint Local Transport Plan. The A38 section is of varying standards and is generally provided as a single carriageway with only short sections of two lanes in one direction and a single lane in the other.

2.3.3. To be resilient to planned housing growth and economic growth in North Somerset and Somerset, particularly at Bristol Airport, a package of measures for the A38 MRN is required to:

- Reduce congestion
- Improve resilience of the corridor and the M5 SRN (in part because the A38 between J18 and J22 is a signed diversionary route for the M5) and also provide relief during peak travel periods (e.g. school holidays);
- Support economic growth across the Region's gateway;
- Support housing delivery;
- Support growth of Bristol airport;
- Support all road users; and
- Support the Strategic Road Network (SRN).

2.3.4. This SOBC is submitted with the support of the Western Gateway and South West Peninsula Sub-National Transport Bodies (SNTBs).

2.3.5. The Western Gateway SNTB has identified the following 'Key Challenges' as a need for intervention:

- Improving metro connectivity;
- Improving network resilience;
- Improving strategic connectivity;
- Improving access to Bristol Airport;
- Improving access to Bournemouth Airport & the south coast ports; and
- Improving digital technology and innovation.

2.3.6. The emerging Western Gateway strategy also details a set of draft objectives. The key points to note are as follows:

- Achieving higher average speeds between the city regions and other employment areas (particularly north-south) to support innovation and productivity growth clusters, particularly in the technology sector. It will also help to re-balance the Western Gateway's economy by spreading the positive impacts of growth in these sectors.
- Achieving higher average speeds within city regions and to city regions, as well as to other places of employment to help to overcome barriers to effective operation of labour markets, support productivity gains and encourage inward investment.
- Reducing delays on the MRN and SRN will improve journey time reliability, thereby reducing business costs of transport (such as driver costs), support just-in-time delivery manufacturing and enhance business productivity. Better network management can also maximise the integration of the MRN and SRN and the resilience of our strategic highway network.

- Better management of the MRN can benefit all road users, including those using public transport, pedestrians and cyclists by improving journey times and journey time reliability, improving safety and reducing vehicle emissions. These benefits support the SNTB's ambition to provide sustainable alternatives for journeys resulting from growth in the number of homes and jobs in the area. They also help to maintain and enhance the quality of life in the Western Gateway, encouraging attraction of high-skilled jobs and inward investment.
- Achieving higher average speeds and improving connectivity to and from international gateways within the area will support the competitiveness and productivity of businesses with international supply chains and/or markets. The same applies for links to international gateways beyond the area, where connectivity to the SRN becomes the key factor.
- Providing access to development land for employment and housing will support businesses to expand by providing access to larger labour markets and/or new growth opportunities. Development land must be located where the demand for travel between homes and jobs can be minimised, and where the performance of the strategic transport networks serving them is attractive to investors and supportive of sustainable travel choices.
- Improving connectivity to the more peripheral parts of the Western Gateway will support jobs and housing growth, inward investment and productivity of local businesses in those locations.

2.3.7. The A38 MRN Scheme has been identified and prioritised as part of a short-listing process by the SNTB within the Western Gateway area. The following themes were used in the shortlisting process:

- improve urban travel within city regions to enable future housing and employment growth:
- improve north/south connectivity within the Western Gateway area, especially between the M4/M5 and south coast:
- improve connectivity to international gateways:

2.3.8. Improving access to Bristol Airport has been identified by the SNTB as a key challenge to enhance access to international gateways and this SOBC was short-listed under that final theme, i.e. to improve connectivity to international gateways and specifically to Bristol Airport. The Scheme could also have been included in the other two themes, as it improves urban travel between Bristol and Somerset and supports housing and employment growth and improves north/south connectivity - and network resilience - between Bristol, Taunton and the South West peninsula.

2.4. PROBLEM IDENTIFICATION

2.4.1. The A38 is one of the main arteries connecting Bristol, Weston-super-Mare, Bristol Airport and the South West. Many villages and settlements are located in the corridor and consequently are prone to regular peak period congestion and delays. The A38 MRN study has identified the following issues:

- Traffic congestion affects journey time reliability on all networks;
- Traffic uses inappropriate routes to avoid congestion hot spots affecting accessibility to businesses and services;
- Road geometry in the A38 corridor limits opportunities to overtake agricultural and slow-moving vehicles leading to longer and unreliable journey times; and
- Existing network issues do and will act as a throttle to housing and economic growth along the A38 MRN corridor.

2.4.2. Traffic congestion and the relatively rural/constrained highway network results in economic barriers to business. The problem creates higher business costs, reduced productivity and reduced access to labour markets. This Scheme specifically addresses the need to improve access, journey time reliability and network resilience to Bristol from the South West, its airport and other businesses in the A38 corridor.

Transport Networks and Travel Patterns

2.4.3. A combination of factors, including topography, restricted space in villages, and conflicting movements at junctions, limits capacity on main corridors, causes congestion and slow journeys. The sub-region is also heavily reliant on the M5 for strategic connections; when incidents occur on the motorway, congestion is widespread across the study area and poor network resilience is apparent with few alternative routes able to accommodate high traffic volumes arising from diverted traffic. Indeed, high traffic volumes are not limited to traditional peak periods but occur on all days of the week and all times of the day.

2.4.4. The proposed West of England JSP strategic development locations in the study area are forecast to place increased volumes of additional traffic on the two east-west road corridors (A38 and A370) and between Bristol and the South West, which risks hindering strategic journeys to the airport unless the road network is upgraded.

2.4.5. Reliability is a key issue in the study area, particularly on the Airport to Bristol City Centre corridor, with delays caused by factors including traffic congestion and limited bus priority infrastructure.

2.4.6. Active travel connections within and between the study area settlements are mainly by road, augmented by a small number of surfaced off-road routes.

2.4.7. Bus journey times on the A38 into the main urban areas are recognised as being long and unreliable, caused by traffic congestion, limited bus priority and exacerbated by large numbers of passengers boarding, alighting and purchasing tickets along the routes and adding to general delay for all traffic along the A38.

2.4.8. Bristol Airport is 9 miles (14km) south of Bristol city centre. Road conditions from Bristol are congested during weekday peak periods, especially for routes crossing the city centre and in south Bristol. The airport is not directly connected to the Strategic Road Network (SRN), with the M5 only accessible via the A38 single carriageway of varying standard. The airport is signed from the north at M5 J18 (Avonmouth), a driving distance of 13 miles (20km). From the South West drivers are directed to leave the motorway at M5 J22, 17 miles (27km) to the south. Drivers with local knowledge of the rural roads use M5 J19 and M5 J21.

2.4.9. Bristol Airport does not have direct access to the national rail network, and rail passengers are reliant on using bus connections via the A38 to stations in Weston-super-Mare or Bristol before changing to connecting rail services.

Congestion and Journey Time Reliability

2.4.10. Congestion is one of the main challenges for residents and commuters navigating the A38. There are multiple congestion hot-spots and a range of issues contribute to congestion on roads including:

- A lack of overtaking opportunities;
- The vertical and horizontal alignments of roads, limiting vehicle speeds;

- Conflicting movements at junctions; and
- Limits to capacity along main corridors.

2.4.11. Collectively these conditions create unreliable journey times, with journeys undertaken at certain time periods being more adversely affected than others and incurring long delays and extended journey times. This adds uncertainty into journeys with consequent reliability issues, particularly when connecting to flights at Bristol Airport, and impacts those using public transport.

2.4.12. On sections of the A38 journey times can be long and unreliable. The highway may also not be used at full capacity, caused in some cases by slow speeds arising from the mix of through and local (agricultural) traffic, limited overtaking opportunities and congestion at downstream junctions.

2.4.13. At Bristol Airport, journey time reliability to the airport and the reliability of bus services is affected by peak period congestion. The airport has shown through its Airport Flyer services that there is potential and propensity to use public transport, but perceptions of poor reliability could affect the overall attractiveness of the service and act as a cap on realising its full potential.

2.4.14. The four West of England Councils (North Somerset, Bath and North East Somerset, Bristol City and South Gloucestershire) have produced a West of England Joint Spatial Plan (JSP) which is currently under examination. It sets out a prospectus for sustainable growth to help the Region meet its housing needs to 2036. The JSP is the first such joint planning approach in the UK that considers the impact that development in one area has across council boundaries.

2.4.15. The A38, which provides access to Bristol Airport and some JSP development, is congested during peak periods. Without targeted interventions, traffic growth and that from new development would result in:

- Increased congestion and delays; and
- Poor journey time reliability for both private car travel and public transport services along key routes.

leading to:

- Potentially reduced or constrained growth at Bristol Airport;
- Decreased use of public transport due to increased unreliability and delays to bus services;
- Decreased uptake of walking and cycling as commuters will feel unsafe travelling in a congested transport network environment; and
- Increased use of minor roads to avoid congestion.

2.4.16. Without new transport infrastructure, new housing and employment development in the corridor would exacerbate existing problems resulting in a further increase in journey times, more congestion and a deterioration in the service provided by the existing public transport network.

Accessibility

2.4.17. Roads connecting to the A38 are of variable standard, comprising a network of B-roads and country lanes, some with sections of steep and narrow carriageway. An improved A38 would encourage more vehicles to remain on the MRN and reduce the likelihood and attraction of rat running along less appropriate routes.

2.4.18. Reduced traffic congestion in the corridor and improved junctions at key locations will also improve the bus service reliability and journey times, including those at Bristol Airport, helping the drive to encourage more people to use sustainable transport. In 2018, the Airport Flyer carried more than one million passengers contributing significantly to a 12.5% mode share for public transport.

Bristol Airport's Catchment

2.4.19. Bristol Airport has a wide regional catchment. In 2017, 27% (2.3m of its 8.6mppa) came from the Bristol region and 15% (1.3mppa) from South Wales. Airport customers from Devon, Somerset and Gloucestershire together accounted for a further 24% (2.1mppa).

2.4.20. Expressed in terms of car park arrivals, the main draw of passengers arriving by car is from the North Fringe of Bristol, and Bath and Wiltshire, Cardiff and Newport in South Wales, and rural areas to the south in Somerset, Devon and Dorset.

2.4.21. Bristol Airport is the only airport in the UK without direct access to the SRN. The A38 is the main access road for the airport to and from the South West and it must provide reliable journeys to support the continued economic success of the airport and the benefits it provides to the region (see Figure 2-3).

Socio-Economic Context

2.4.22. The West of England economy is strong, with performance better than national GVA averages per head. However, congestion, housing and labour shortages are highlighted as key concerns; average house prices are eight times the level of average earnings.

2.4.23. Most of North Somerset has low or below average levels of deprivation, as defined by the Indices of Multiple Deprivation, and there are pockets of deprivation and higher unemployment in parts of Weston-super-Mare and South Bristol which are lower than the national average. Educational attainment and participation in higher education are below the national average and there is a skills shortage in the manufacturing, transport and construction sectors. An improved A38 would provide a boost to economic activity in the corridor and help North Somerset to achieve parity with the wider West of England.

2.5. IMPACT OF NOT CHANGING

2.5.1. Traffic and planned economic growth are likely to result generally in increased traffic congestion in the study area, increased journey times and reduced journey time reliability. The consequences of this would be:

- Increased congestion and delays and poor journey time reliability for both private car travel and public transport services along the A38 and other key routes;
- Deteriorating north-south access caused by traffic congestion, extended journey times and poor journey reliability;
- A negative impact on growth, productivity, access to labour markets and international gateways;
- A negative perception of access to Bristol Airport, with a knock-on impact on the reputation of the airport and reducing its potential to grow;
- Decreased use of public transport services due to increased unreliability and delays to bus services;
- Decreased uptake of walking and cycling as commuters will feel unsafe travelling in a congested transport network environment;

- Increased use of minor roads ('rat-runs') to avoid congestion; and
- Adverse environmental impact resulting from congestion, delays and rat-running.

2.5.2. Without the infrastructure proposed by the A38 MRN scheme, a significant amount of pressure will be placed on the existing highway network resulting in increasing levels of congestion. This has the potential to negatively impact economic growth and cause increased levels of pollution and driver stress, not only for people living and working in North Somerset but also for those in the wider region and travelling through the area on the M5 to other destinations. It will also limit the travel choices available to passengers and employees at Bristol Airport and affect the potential to realise the social and economic benefits arising from the airport.

2.6. OBJECTIVES OF THE SCHEME

2.6.1. The objectives of the scheme are comparable to those of the MRN, being to:

- Improve journey times and average speeds to preserve the primary route function of the A38 and reduce traffic diverting onto less appropriate routes through sensitive villages or narrow lanes.
- Improve signage and visibility at concealed entrances to reduce number of collisions and improve resilience of this primary route which also serves as a formally designated diversion route for the SRN
- Reduce disruption to through traffic as a result of traffic accessing the airport.
- Improve the functioning of the primary route corridor in the vicinity of the airport by creating additional running lanes to provide more reliable access for general traffic and for buses including those serving the airport. As has been mentioned earlier, the Airport Flyer carried one million passengers in 2018; to maintain this, it needs to sustain reliable journey times to ensure passenger confidence when using sustainable transport, particularly when connecting to flights.
- Improve business confidence in the current and future function of this corridor to provide an effective international gateway to underpin and drive sustainable growth.
- Improve public transport infrastructure to facilitate current services and facilitate future service improvements to support growth.

2.7. HOW THE SCHEME ALIGNS WITH MRN AND NATIONAL TRANSPORT OBJECTIVES

EASING CONGESTION AND PROVIDING UPGRADES

2.7.1. Reliability is a key issue in the study area, particularly on the Airport to Bristol City Centre corridor, with delays caused by factors including traffic congestion and limited bus priority infrastructure. The MRN scheme will ease congestion and provide an upgrade to important regional route.

2.7.2. The A38 is one of the main arteries connecting Bristol, Weston-super-Mare, Bristol Airport and the M5 south of Bristol. It is also the signed diversion route for the M5 motorway between J18 and J22. The corridor is prone to regular peak period congestion and delays at congestion hotspots and other sections along its length.

2.7.3. Congestion is one of the main challenges for residents and commuters navigating the BSWEL study area. There are multiple congestion hot-spots along the A38, A368 and A371 and a range of issues contribute to congestion on roads including:

- A lack of overtaking opportunities;
- The vertical and horizontal alignments of roads, limiting vehicle speeds;

- Travel conditions in built-up areas;
- Conflicting movements at junctions; and
- Limits to capacity along main corridors.

2.7.4. During school holiday periods congestion occurs on the SRN motorway mainline between M5 J15 and M5 J21 (sometimes extending to J25 at Taunton). This in turn results in a complex pattern of journeys within the wider study area with traffic using alternative routes to reach their destinations, which includes the A38 south of Bristol.

2.7.5. Collectively these conditions create unreliable journey times, with journeys undertaken at certain time periods being more adversely affected than others and incurring long delays and extended journey times. This adds uncertainty into journeys with consequent reliability issues, particularly when connecting to flights, and impacts particularly on those using public transport. They also affect economic decisions for investment in the region, be it for business or when choosing a new home, and ultimately affect economic growth.

UNLOCKING ECONOMIC GROWTH

2.7.6. The West of England economy is strong, with performance better than national GVA averages per head. However, congestion, housing and labour shortages are highlighted as key concerns; average house prices are eight times the level of average earnings.

2.7.7. The South West economies of North Somerset, Somerset, Devon and Cornwall contribute proportionately less to the UK economy than other regions as measured by gross value added (GVA) per head[11,12]. North Somerset's wages are below the average for the whole South West, which themselves are below the national average and those in the City of Bristol[13].

2.7.8. Most of North Somerset and Somerset have low or below average levels of deprivation, as defined by the Indices of Multiple Deprivation, and there are pockets of deprivation and higher unemployment in parts of Weston-super-Mare and South Bristol which are lower than the national average. Educational attainment and participation in higher education are below the national average and there is a skills shortage in the manufacturing, transport and construction sectors.

2.7.9. The Councils have a unique opportunity to contribute more to the national economy, and improvement of the A38 will help to unlock economic growth and job creation opportunities and support rebalancing of the regional economy.

[11] http://researchbriefings.files.parliament.uk/documents/SN05795/snep-05795local-table.xlsx. ONS, Regional gross value added (balanced), UK: 1998 to 2016, Dec 2017. GVA per Head, 2016: UK £26,339; South West £23,091; Bristol £31,513; Cornwall £17,069; Devon £20,843; Somerset £19,994; Bath & NE Somerset, South Gloucestershire & North Somerset are grouped together by ONS, £27,943.

[12] https://www.westofengland-ca.gov.uk/wp-content/uploads/2019/02/1.-WofE-LIS-Summary-of-evidence-1.pdf, p.11. GVA per Head 2015: South Gloucestershire £31,581; Bristol £30,850; Bath & NE Somerset £24,746; North Somerset £22,263.

[13] https://www.adzuna.co.uk/jobs/salaries/labour-market?location=86440,86448,86409,86456. Average annual salaries January 2019: North Somerset £28,587; Somerset £30,969; Devon £30,090; Cornwall £29,876; Bristol £36,279; National Average £34,240.

Figure 2-2 - Average GVA and Salary in North Somerset and the South West

ENABLING NEW HOUSING

2.7.10. Proposed JSP strategic development locations in and adjacent to the BSWEL study area are forecast to place substantial volumes of additional traffic on the north/south road corridors south of Bristol (A370 and A38), which risks hindering strategic journeys to the airport unless the road network is upgraded.

2.7.11. Growth at Burnham and Highbridge included in Sedgemoor Local Plan will provide 670 new homes and 2ha of employment (B1) land within two miles of Edithmead Roundabout.

2.7.12. The MRN scheme will provide additional capacity in the A38 corridor which will support and enable the delivery of new housing (and employment) development in North Somerset and Somerset.

SUPPORTING ALL ROAD USERS

2.7.13. Bristol Airport had a public transport (bus) patronage of around one-million passengers in 2018, representing a 12.5% mode passenger share for buses at the airport. It has ambitions to significantly reduce the mode share for cars and increase its public transport mode share as it grows to 20mppa by the 2040s[14]. Without highway and priority for public transport in the A38 corridor, these changes in mode share are unlikely to be achieved.

2.7.14. Bus journey times on radial corridors into the main urban areas are recognised as being long and unreliable, caused by traffic congestion, limited bus priority and exacerbated by large numbers of passengers boarding, alighting and purchasing tickets along the routes.

2.7.15. Capacity and junction improvements will reduce journey times and improve journey reliability which will support all road users and allow bus operators to provide a service efficiently and to their advertised timetable.

[14] https://www.bristolairportfuture.com/planning-for-the-future

METRO CONNECTIVITY

2.7.16. The Western Gateway SNTB has identified a need to achieve higher average speeds between the city regions and other employment areas to support innovation and productivity growth clusters, and help to re-balance the Western Gateway's economy by spreading the positive impacts of growth. It also looks to achieve higher average speeds within city regions to help to overcome barriers to effective operation of labour markets, support productivity gains and encourage inward investment. The MRN does this and will ensure reduced journey times and improved journey reliability in the A38 corridor, and wider network resilience making the region's highway network – including the SRN - better able to accommodate traffic peaks and exceptional traffic conditions to the south of Bristol.

SUPPORTING THE STRATEGIC ROAD NETWORK

2.7.17. The sub-region is heavily reliant on the M5 for strategic connections; when incidents occur on the motorway, congestion is widespread across the study area and poor network resilience is apparent with few alternative routes able to accommodate high traffic volumes arising from diverted traffic.

2.7.18. The M5 motorway provide the main route between the Midlands, South Wales and London to South West England. The motorway and roads into Bristol from the south are frequently congested and viewed by businesses as highly unreliable.

2.7.19. Congestion is frequently reported throughout the year which affects business productivity levels locally and into the South West along the M5, A371-A368-A38 corridor and A370. In addition, the A38 provides the signed diversion route between M5 J18 and J22, a distance of almost 50km / 30 miles.

2.7.20. Congestion also occurs on the M5 J22 Link Road where north and southbound traffic leaving the motorway converge and must weave to gain appropriate lanes before the A38 Edithmead Roundabout.

2.7.21. Improvements to the A38 Edithmead Roundabout (providing access to M5 J22) and along the A38 corridor will provide an effective diversion route during congestion and incidents on the M5 motorway and will provide a realistic alternative route to the M5 for access to south Bristol and Bristol Airport which will support the operation of the Strategic Road Network.

2.8. IDENTIFICATION OF THE PREFERRED OPTION

2.8.1. An Options Assessment Report (OAR) was been completed for BSWEL. It is included in Appendix B of this SOBC and describes the process of analysing transport challenges, defining the corridor-specific objectives, and identifying and assessing potential interventions to mitigate travel and transport issues and problems in North Somerset. The A38 MRN Schemes at Rooks Nest, Cross and Edithmead Roundabout did not form part of BSWEL but have been identified and detailed separately by Somerset County Council.

2.8.2. A long list of options was generated in BSWEL with a focus on strategic options included in the JTS and JSP. Options comprised of highway and public transport schemes, with public transport options including bus improvements, light rail, trams, tram-trains, mass rapid transit and heavy rail. Autonomous Vehicles, Smarter Choices / Car-free Developments and improvements to conventional bus services and Park & Ride sites were also assessed.

2.8.3. An initial sift of the Long List of options was undertaken using the Department for Transport's Early Assessment and Sifting Tool (EAST). Based on this assessment, options were either progressed or

discarded. In line with best practice guidance, consideration was given to ways in which elements of the shortlisted options could be packaged together. The aim was to create a sensible number of distinct and feasible option packages for further development and assessment.

2.8.4. Options that performed well in the EAST assessment were taken forward for a more detailed assessment. These options were developed to a sufficient level of design / specification, collating further evidence to be assessed against the Transport Business Case Criteria of the Option Appraisal Framework (OAF). The OAF is a WebTAG tool and was used to assess options which passed the EAST appraisal. Six elements of technical work were undertaken to inform this step:

- Design assumptions;
- Estimated costs;
- Environmental assessment;
- Flood risk assessments (FRAs);
- Highway and public transport modelling assessments; and
- Economic appraisal.

Eight BSWEL packages were recommended for further appraisal and business case development, with a delivery programme to complement the expansion of Bristol Airport and JSP development. These packages are listed in Table 2-1. The A38 MRN was identified as Package 2 to remove several speed constraints and improve journey time reliability and reduce overall journey time for MRN traffic.

2.8.5. Edithmead Roundabout includes access to the M5 SRN at J22 and provides the main access to Burnham-on-Sea and, via the A38, to Highbridge in the south. The northbound approach to Bristol Airport is signed at M5 J22 directing traffic to use the A38. It is also the start/end point of the M5 designated diversion route between M5 J18 and J22 (There is no suitable alternative route between M5 J19, 20 or 21, which means that any incident on any section of the M5 between J18 and J22 leading to congestion or road closure will result in SRN traffic being directed onto the A38).

2.8.6. The key congestion issues at the Edithmead junction affect the A38 approaches and traffic leaving the M5 (which can extend back onto the motorway mainline at times of peak demand). The improvement scheme included in this A38 MRN bid will mitigate these issues and aligns well with the objectives of the MRN and the Western Gateway SNTB.

2.8.7. The safety schemes at Rooks Nest and Cross will contribute improved safety for pedestrians, cyclists and traffic crossing and on the A38, and will positively influence MRN journey time reliability.

Table 2-1 – BSWEL OAR Shortlisted Schemes

Package	Option Elements
Package 1	Weston-super-Mare bus network re-casting; Weston-super-Mare to Bristol bus services MetroBus compatible
Package 2	MRN: A38 online improvements between A368 to Bristol Airport, along with Downside Road junction improvements and A38 widening at Bristol Airport.
Package 3	Weston Parkway station; Improved Weston-super-Mare – Weston Parkway – Bristol Airport bus service. Banwell Bypass.
Package 4	A38 offline improvements between Bristol Airport and A4174 A38/A4174 P&R Sandford and Churchill Bypass
Package 5	M5 J21A
Package 6	Bristol Airport Mass Transit Phase One: Bristol Airport to Bristol Temple Meads
Package 7	Bristol Airport Mass Transit Phase Two: Bristol Airport to Severn Beach; Bristol Airport to Bath Spa; and Bristol Airport to Weston-super-Mare & Taunton
Package 8	A370-A38 Link.

2.9. CONSTRAINTS

Land Assembly

2.9.1. Most of the land required for the MRN Scheme is currently under the control of North Somerset Council and Somerset County Council as highway authorities. There is also land already in the ownership of Bristol Airport.

2.9.2. If the SOBC is successful, Bristol Airport has agreed in principle to transfer land to North Somerset Council as highway authority to enable the Downside Road improvement.

2.9.3. A further parcel of land is required upon which Bristol Airport has commenced negotiation to acquire.

Planning Permission and Statutory Approvals

2.9.4. Most of the infrastructure works will not require planning permission prior to works commencing as they are located within the existing highway boundary. These works are subject to permitted development rights under Part 9, Class A of the Town and Country Planning (General Permitted Development) Order 2015 as amended. This allows for works carried out by the Highway Authority

to be undertaken for the improvement or maintenance of the road within the boundaries of the road or immediately adjacent (adjoining) to it. This excludes laying out or widening of any access on to the existing highway.

2.9.5. The A38 Downside Road scheme will require planning permission as it involves the construction of a new road outside of the current highway boundary. This will be secured by Bristol Airport.

2.9.6. It is unlikely that any MRN Scheme component will fall within the Planning Act 2008 regime for Nationally Significant Infrastructure Projects (NSIP). The criteria under section 22 of the Act for highways schemes requires that an NSIP be wholly within England, that the Secretary of State for Transport will be the highway authority, and, in the case of a construction project, will be above a specified size threshold. As the Secretary of State will not be the highway authority for the scheme and has no prospect of being so in the future, a Development Consent Order (DCO) under the Planning Act 2008 is not required. It is possible for the promoter to seek a Direction under section 35 of the Act to bring a scheme within the DCO regime if appropriate, for example if it supports regional housing and employment growth, lies within more than one local authority area, is relied upon by other NSIPs or is large and complex requiring many different types of consent (e.g. planning and compulsory acquisition from a large number of parties). It is considered unlikely that a section 35 Direction would be required for the scheme.

2.9.7. The risk of a public inquiry in the planning application process relates to the risk of the application being called in for determination by the Minister for Housing, Communities and Local Government. This may occur at any time during the determination process if the Minister considers that the decision is in the wider public interest (although it can be called in for any reason). A public inquiry could also be held if planning permission was refused and an appeal against that refusal was lodged with the Planning Inspectorate.

Approval of Statutory Environmental Bodies

2.9.8. Some early engagement has already been completed through BSWEL and further discussions will be held with the statutory environmental bodies including Environment Agency, Natural England and Mendip IDB to secure formal approval of the MRN scheme, including screening processes.

2.10. INTERDEPENDENCIES

Infrastructure Funding

2.10.1. To ensure delivery of MRN infrastructure to support housing and economic growth, it is essential funding is secured at the earliest opportunity. The airport has already made clear its intention to contribute to the MRN scheme and the council will continue to identify additional developer contributions.

Resource Procurement

2.10.2. It will be essential to plan for procurement to ensure all necessary resources are martialled and in-place to meet the programme for the business case through to scheme completion.

2.10.3. The procurement strategy envisages the following resources being needed;

- Internal Council resources from both the Highway and Major Projects Services (Corporate agreement for this to happen is already in place);
- Contractor appointment (to enable D&B on some elements of the infrastructure, the intention is to appoint early in the process where possible); and

- Professional services (Employment of the full range of external professional services including design and environmental)

2.11. DEVELOPMENT SUPPORTED BY THE A38 MRN OBC

2.11.1. The Councils are located within or adjacent to a highly successful West of England city region where economic growth has exceeded the national average and ambitions for growth are strong through innovation, knowledge and quality of life.

2.11.2. North Somerset benefits from the designation of an Enterprise Area close to the M5, offering 72 hectares of employment land with planning permissions and Development Orders in place. On completion, the J21 Enterprise Area will provide 10,000 jobs and 9,000 new homes by 2026 and is part of the wider expansion and regeneration of Weston-super-Mare. Ongoing infrastructure work would continue to provide new investment opportunities to support the growth and employment plans for the area.

2.11.3. The West of England Joint Spatial Plan (JSP) proposes the delivery of 82,500 new jobs and 105,600 new homes across the West of England by 2036 (of which 66,300 are already consented). Of these, 4,700 new homes are located close to the A38 at Banwell Garden Village and Mendip Spring Garden Village (Churchill).

2.11.4. Growth at Burnham and Highbridge included in Sedgemoor Local Plan will provide 670 new homes and 2ha of employment (B1) land within two miles of Edithmead Roundabout.

2.11.5. The package of measures proposed in this MRN document will provide a more reliable journey time on the A38 and, in the short and medium term, will reduce local congestion and delay. The additional capacity will enable continued economic development in the corridor and will also allow Bristol Airport to achieve its growth aspirations beyond the 10-12mppa.

2.11.6. None of the schemes included in this MRN bid will be superseded by any scheme included in BSWEL, rather they will complement each other to provide further benefits.

2.12. IMPACT ON NATIONAL INFRASTRUCTURE

STRATEGIC ROAD NETWORK

2.12.1. The A38 MRN corridor is complementary to the M5 SRN and provides one of the diversion routes should the operation of the motorway be compromised for any reason. The A38/M5 J22 Edithmead Roundabout improvement will reduce peak period queueing on the M5 J22 Link Road for traffic leaving the M5 motorway.

2.12.2. WECA has been using the Greater Bristol Area Transport Study (G-BATS) strategic transport model to inform the transport modelling undertaken to assess the effects of the JSP on the motorway network. Traffic modelling shows that in the PM Peak Hour the M5 southbound between Junctions 18 and 21 is forecast to be close to or over capacity in 2036. The problem is due to a combination of increases in flow forecast due to both committed growth in Local Plans and growth related to JSP.

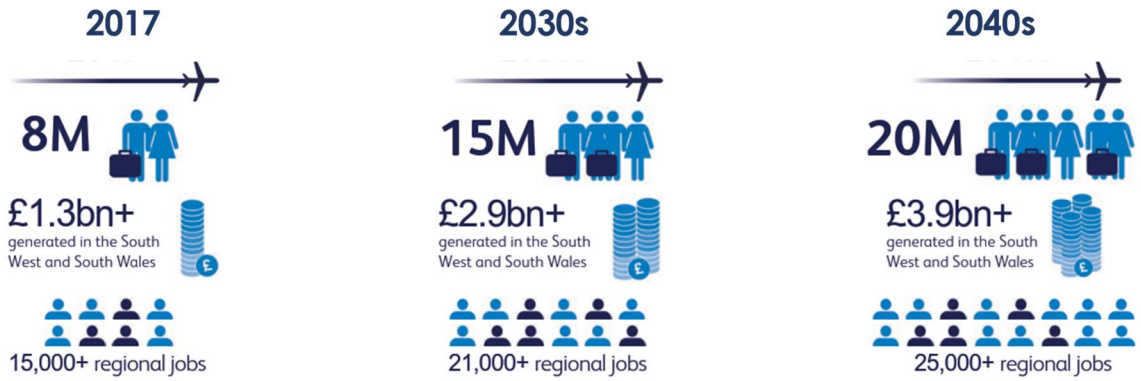
2.12.3. Analysis of the traffic data indicated that targeted improvements are required in the A38 corridor between Bristol and Bristol Airport and that an improvement at the A38 Downside Road/West Lane junction was especially effective in providing additional capacity in the corridor and an effective alternative to the M5 for travel between Bristol and North Somerset.

ACCESS TO INTERNATIONAL GATEWAYS

2.12.4. The Western Gateway SNTB has prioritised the A38 MRN as a scheme to improve connectivity to international gateways, i.e. Bristol Airport. The A38 to the south of Bristol provides the main access to the airport. It is the largest single site employer within North Somerset and provides some 4,000 jobs with more than 50 businesses across the airport site. It generates approximately 5,500 full time equivalent (FTE) jobs with a GVA of over £625 million[15]. In the wider region it contributes over £1.3bn to the local economy. However, it is connected to the M5 motorway and Bristol by roads of varying standards which themselves are subject to peak period congestion resulting in unreliable journey times – which adds uncertainty into passenger journeys, particularly when connecting to flights.

2.12.5. Bristol Airport catered for 8.6 million passengers per annum (mppa) in 2018. It has planning consent to operate at up to 10mppa and is currently applying for this cap to be raised to 12mppa[16]. It has also prepared a masterplan that sets out how the airport could grow to 20mppa by the 2040s[17].

Figure 2-3 - Estimated Present and Future Economic Impact of Bristol Airport



Source: 'Your Airport: your views – A World of Opportunities: Preparing a new Master Plan: Public Consultation, Bristol Airport, November 2017, p.21.

[15] Total GVA across the four local authorities comprising the West of England: North Somerset; City of Bristol; Bath & NE Somerset; South Gloucestershire.

[16] NSC Planning Reference 18/P/5118/OUT.

[17] 'Your Airport: your views – A World of Opportunities: Preparing a new Master Plan: Public Consultation, Bristol Airport, November 2017, p.21

2.13. MEASURES FOR SUCCESS

2.13.1. The following specific outcomes are expected upon completion of the A38 MRN scheme, and can be used as a measure of its success:

- Opportunity of the key stakeholders to achieve key policy objectives;
- Journey time savings and journey time reliability;
- Improving the resilience of the transport network;
- An increase in public transport and sustainable modes of travel used for access to jobs and Bristol Airport;
- An improvement in local air quality;
- Maintaining the level of economic activity; and
- Enabling delivery of housing numbers.

2.14. STAKEHOLDERS

2.14.1. The Councils have developed this SOBC in consultation with Bristol Airport, Sedgemoor District Council, Highways England, Network Rail, Bristol City Council and the West of England Combined Authority (WECA). The A38 MRN Scheme is complementary in delivering the requirements of the West of England Joint Spatial Plan (JSP) and associated Joint Transport Study (JTS) which are being developed by the local authorities of North Somerset, Bristol, Bath & North East Somerset and South Gloucestershire who together make up the West of England sub-region.

2.14.2. Extensive West of England governance and scrutiny arrangements are in place to ensure political accountability, supported by a full set of officer and technical groupings within a government approved Assurance Framework.

2.14.3. This West of England joint working also extends to a much wider range of partners, including Western Gateway SNTB, South West Peninsula SNTB, West of England Local Enterprise Partnership (LEP), developer forums, Registered Providers, the Strategic Solutions Forum (statutory undertakers), Highways England, Natural England and NHS colleagues, amongst others.

2.14.4. Bristol Airport has jointly funded the BSWEL project, is contributing to the capital costs of the A38 MRN scheme and will remain a key stakeholder.

2.15. CONSULTATION ACTIVITIES

2.15.1. The A38 MRN Scheme has its origin in the BSWEL project described earlier. As such it has been scrutinised by the BSWEL Project Board which has representatives of Highways England, the West of England Combined Authority, Bristol Airport, Bristol City Council and Sedgemoor District Council in addition to North Somerset Council and Somerset County Council.

2.15.2. This SOBC is being submitted with the support and agreement of the Western Gateway and South West Peninsula SNTBs and has been discussed in detail with Highways England.

2.15.3. The scheme was included in JSP consultations undertaken by North Somerset Council in autumn 2018 and was presented at a business and transport forum in June 2019. The A38 MRN will be included in wider public consultation in autumn/winter 2019.

3. ECONOMIC CASE

3.1. INTRODUCTION

3.1.1. The Economic Case considers the extent to which the MRN scheme represents value for money. The economic, environmental, social and distributional impacts of the scheme are all examined, using qualitative, quantitative and monetised information. In assessing value for money, these are consolidated to determine the extent to which the scheme's benefits outweigh its costs.

3.1.2. This appraisal at SOBC is proportionate to the stage of the project, and thus is more limited and in less detail than will be provided for the Outline and Full Business Cases.

3.2. SUPPORTING DOCUMENTS

3.2.1. The A38 MRN forms part of the wider BSWEL project. It is one of a number of highway schemes which form part of an overall highway improvement package. Option assessment work has therefore been completed as part of the wider BSWEL study. The BSWEL Options Assessment Report is included in Appendix B.

3.2.2. Work completed between the BSWEL options assessment and a separate Strategic Outline Business Case (SOBC and included at Appendix C) has involved creation of a new traffic model which, as well as confirming the main conclusions of the BSWEL OAR, has identified a further medium-term improvement at M5 Junction 22 (Edithmead roundabout). The MRN scheme has been further enhanced with two safety related improvements on the A38 within the County of Somerset.

3.2.3. Further technical work to support the economic case has also utilised the BSWEL study outputs. A number of BSWEL reports have been appended to this bid, these documents are as follows:

- Local Model Validation Note (Highway Assignment Model) – Appendix E
- Forecasting Note – Appendix F
- Economic Assessment Note – Appendix G

3.2.4. Data collection is covered within the Local Model Validation note. At this stage in the project's development forecasting has been completed using fixed matrix techniques (i.e. excludes variable demand modelling), therefore there is no demand model validation report available at this time. The assessment of Social and Distributional Impacts has also not been completed.

3.2.5. Further technical reports detailing the identification of operational problems on the A38 leading to Edithmead roundabout (adjacent to M5 Junction 22), assessment of options and the economic appraisal is detailed in Appendix G and H.

3.3. ASSESSMENT SUMMARY

3.3.1. Data has been provided by North Somerset Council across the BSWEL study area, for the period 2011-2016. Data comprises a mixture of manual classified junction data and automatic link counts. Further junction count data at M5 Junction 22 has been provided by Highways England for 2018. Journey time data has been provided from the TrafficMaster data system provided by DfT for 2015.

3.3.2. Traffic count data has been arranged into screenlines for model calibration and validation. Counts which fall away from these screenlines have been assessed separately under model calibration and validation. Journey times have been compiled for key routes across the study area.

3.3.3. A highway assignment model (HAM) has been developed using SATURN software. The model is derived from a cordon of the South West Regional Traffic Model (SWRTM). The HAM has been calibrated and validated, broadly in line with thresholds prescribed in DfT Transport Appraisal Guidance (TAG). The model is considered to be fit for the purpose of appraising the BSWEL highway improvements.

3.3.4. M5 Junction 22 is on the periphery of the BSWEL model network. Therefore, a separate modelling exercise has been undertaken using ARCADY software, making best use of the outputs from the SATURN model. The model has been validated using available queue data.

3.3.5. Traffic growth for the future year HAM scenarios is based on the forecast assumptions developed for the BSWEL study. This includes development sites which have planning consent or are very likely to come forward, in addition to traffic associated with the Strategic Development Locations (SDLs) in North Somerset (as set out in the West of England Joint Spatial Plan). These forecasts also assume expansion at the airport to 20 million passengers per annum.

3.3.6. A more conservative forecast has also been prepared which does not include the SDLs and assumes a lower level of growth at the airport to 12 million passengers per annum (in line with current planning applications).

3.3.7. The two forecast scenarios reflect an upper and lower bound for scheme impacts, therefore the core economic appraisal results presented below are taken as an average of these scenarios.

3.3.8. Background growth factors for the Edithmead Roundabout assessment have been derived from the HAM, however further growth has also been applied to reflect developments coming forward in Sedgemoor district which are likely to impinge on the junction.

3.3.9. Economic appraisal has been completed using TUBA v1.9.11 to monetise changes in user travel times, vehicle operating costs, carbon impacts and indirect tax revenues. The TUBA model has been fed outputs from forecasts from the BSWEL HAM and the ARCADY and LinSig models. The appraisal has been undertaken for the period from 2026 to 2075.

3.3.10. It is recognised that there is a separate proposal within the BSWEL project for an improvement at Junction 21. This has the potential to reduce flows at Edithmead, however the proposed scheme is still necessary with these lower flows. Due to the status of the Junction 21 improvement, it has not been reflected in the modelling or economic appraisal.

3.3.11. To account for the uncertainty in the appraisal relating to lack of reassignment in the model used to assess the Edithmead improvements, delays at the junction have been capped to the current year journey time savings (i.e. savings which would be realised if the scheme opened immediately).

3.4. OPTIONS APPRAISED

3.4.1. A single option exists for the improvements proposed as part of this A38 MRN bid. However, the bid is considered to be scalable if any element of the scheme is later shown to be undeliverable in the timescales, or if costs increase beyond those allocated in the bid. Later in the scheme's development, the scheme will go through value engineering. The economic analysis will be revisited at each business case stage to reflect the scheme design as it evolves.

3.4.2. The A38 MRN scheme includes the following elements:

- A38 / Barrow Street Junction Improvements
- A38 / Downside Road Junction Improvements

- A38 widening between the airport access and silver zone roundabout
- A38 Redhill Safety Scheme
- A38 Cowslip Green Alignment Improvement
- A38 Cross Safety Scheme
- A38 Rooks Bridge Safety Scheme
- A38 Edithmead Roundabout Improvement

3.5. ASSUMPTIONS

3.5.1. The DfT Transport Users Benefit Appraisal (TUBA) program (version 1.9.11) has been used to calculate economic benefits.

3.5.2. Table 3-1 sets out the key appraisal assumptions, and Table 3-2 the annualisation factors. The modelled Opening Year is 2026 and the Appraisal Period is from 2026 to 2075. The modelled opening year is a legacy assumption from the work completed during the BSWEL project. It is later than the actual planned opening year for the scheme, but retaining this assumption is unlikely to affect the conclusions regarding value for money.

3.5.3. The economic appraisal for Edithmead Roundabout is based on AM and PM peak hours only and does not capture benefits for the inter-peak period.

Table 3-1 – Key Appraisal Assumptions

Criteria	Assumptions	Source/Rationale
Discount Rate	3.5% 0-30 years 3.0% 31-75 years	WebTAG databook
Opening Years for individual schemes:	2026	Legacy assumption from BSWEL study. VfM category is not sensitive to the discrepancy between modelled and planned opening year
Present Value Year	2010	Green Book/WebTAG
Appraisal period	60 years	Based on anticipated asset life
Forecast Years	2026, 2036	Broadly aligns with timescale for scheme delivery, airport expansion and local/strategic planning policy.
Capital expenditure	100% by year of opening	General assumption

Table 3-2 – Annualisation Factors

Time Period	Peak Hour to Peak Period Factor	No. of Weekdays in year	Annualisation Factor
AM 0800-0900	3	253	759
IP average 1000-1600	6	253	1518
PM 1700-1800	3	253	759

3.6. ECONOMIC APPRAISAL RESULTS

3.6.1. Table 3-3 below shows a breakdown of Present Value Benefits (PVB). This includes benefits from each of the forecast scenarios assessed and an average PVB which is taken forward as the core appraisal result.

Table 3-3 – Breakdown of scheme benefits

Type	Lower Bound Conservative forecast not accounting for specific point loaded development around the A38.	Upper bound Includes additional growth at airport and SDLs.	Core Average of lower and upper bound
Travel Time	52,433	143,376	97,905
- Commuting	14,207	48,518	31,363
- Other	14,511	45,966	30,239
- Business users	23,715	48,892	36,304
Vehicle Operating Cost	4,543	11,334	7,939
- Commuting	523	1,600	1,062
- Other	833	2,953	1,893
- Business users	3,187	6,781	4,984
Indirect Tax Revenues	-1,463	-4,064	-2,764
Greenhouse Gases	627	2,016	1,322
Total PVB	56,140	152,662	104,401

3.6.2. Cost estimates have been converted to 2010 prices and discounted to 2010 in line with HM Treasury Green Book appraisal guidelines. The costs used in the economic appraisal are based on the latest cost estimates and are an update on those used in the BSWEL study.

3.7. APPRAISAL SUMMARY TABLE

3.7.1. The Appraisal Summary Table (AST) at SOBC is shown in Table 3-4 and is a summary of the key aspects of the economic case. The AST focuses on the four key appraisal areas:

- Economy
- Environmental
- Social
- Public accounts

3.7.2. The following conclusions were identified from the Options Assessment Framework assessment:

- The MRN scheme fits with the strategic case, having a beneficial or large beneficial assessment score.
- The impact on the economy is positive, having a large monetised impact in terms of travel times and vehicle operating costs, and a range of other slight to moderate beneficial impacts.
- The impact has the potential to have negative impacts across many topics. At this stage of the appraisal, it is only possible to say that it is very unlikely that any of these impacts will be large due to the scheme mostly falling within existing highway boundary.
- The impact on society is largely beneficial, with substantial monetised savings for non-business users. The package incorporates several safety schemes which aim to improve known safety problems. The remaining impacts are either neutral or slight beneficial.

3.7.3. No large adverse impacts have been identified for the MRN scheme.

3.8. IMPACT ON THE ENVIRONMENT

3.8.1. The A38 MRN scheme was assessed in accordance the WebTAG appraisal methodology for the following environmental topics:

- Noise;
- Air quality;
- Greenhouse gases;
- Landscape;
- Townscape;
- Historic environment;
- Biodiversity; and
- Water Environment.

3.8.2. WebTAG appraisal methodology requires the level of assessment to be proportionate for the stage of scheme development. At SOBC, it was not considered appropriate to complete full WebTAG work sheets for each environmental designation. At this early stage, the principles of the WebTAG worksheets were adopted to establish an overall anticipated level of impact.

3.8.3. WebTAG appraisal methodology for noise and air quality impacts requires the outputs from traffic modelling to undertake a quantitative and monetary assessment. This level of modelling is not available at SOBC and, as such, a qualitative appraisal was undertaken instead.

Table 3-4 - Appraisal Summary Table at SOBC

Case	Assessment Area	Further Assessment Areas	A38 MRN Scheme
Strategic Case	Regional Policy Fit	WoE JSP and JTS	++
	Local Policy Fit	NSC Core Strategy	++
	Meeting intervention objectives	Scheme Objectives Fit	++
Value for Money	Impact on the Economy	Business users and transport providers (£)	£ 41.286m
		Reliability	Beneficial
		Regeneration	Slight
		Wider Impacts	Scheme falls outside the Functional Urban Areas defined in TAG Unit A2.4.
	Impact on the Environment	Noise	-
		Air quality	-
		Greenhouse gases	0
		Landscape	0
		Townscape	0
		Historic Environment	0
		Biodiversity	-
		Water environment	0
	Impact on Society	Non-business-users (£)	£ 64.556m
		Physical activity	0
		Journey quality	Beneficial
		Accidents	++
		Security	0
		Access to services	+
		Affordability	+
		Severance	0
		Option values	+
	Public Accounts	Cost to broad transport budget	£ 21.930m
		Indirect Tax Revenues	£ 2.764m
	Distributional Impacts	No Distributional Impacts identified at this stage.	
	Indicative BCR	Indicative NPV	£ 81.148m
		Indicative BCR	4.7

3.8.4. Appraisals for many of the assessment areas have not consider the effect of mitigation measures. This is because these will be dependent on future work, such as ecological surveys, which will identify specific impacts. The water environment appraisal considers that industry best practise measures would be incorporated into the scheme design to mitigate adverse operational effects. These include a suitable Sustainable Urban Drainage Scheme which considers increased run-off from impermeable surfaces and pollution and contamination associated with the package.

3.8.5. An Environmental Constraints Plan is included in Appendix J. An assessment of environmental impacts is summarised in the following paragraphs.

NOISE

3.8.6. There are eight Noise Important Areas (NIAs) associated with the corridor and proposed area of works along the A38 from its junction with Colliters Way, down to its junction with Langford Road. Transport is likely to be the most significant contributor to existing noise levels, although localised noise and vibration is likely to occur from light industrial sites, commercial premises and farms. There are numerous residential dwellings and community facilities located within 300m of this stretch of the A38.

3.8.7. The proposed A38 MRN scheme has the potential to result in noise and vibration impacts from changes in traffic flows and changes to the layout of the existing roads. Consideration of appropriate mitigation would be required to minimise potential adverse impacts on sensitive receptors.

AIR QUALITY

3.8.8. There are no AQMAs located in proximity to the A38 MRN scheme. However, there are residential properties, community facilities and ecological receptors which would be sensitive to any changes (beneficial or adverse) in air quality.

3.8.9. The closest Air Quality Management Area (AQMA) is the Bristol AQMA located approximately 1.85 km to the north east of the A38 at its junction with Colliters Way. This covers the city centre and parts of the main radial roads. The majority of the NO_2 air pollution in the study area is likely to arise from traffic sources, with Bristol International Airport being a significant local source of emissions.

GREENHOUSE GASES

3.8.10. If the MRN scheme were to result in increased vehicle trips, then there is the potential that greenhouse gas emissions will also increase. However, trends in renewable energies' contribution to the electricity production mix of motorised vehicles are increasing over time and would offset greenhouse gas emissions across the transport network in the medium to long term.

3.8.11. It is also proposed that the design, development and construction activities will be undertaken in accordance with PAS2080:2016 Carbon Management in Infrastructure. Extensive planting will also enable carbon offsetting.

LANDSCAPE

3.8.12. The landscape within the study area is predominantly agricultural. There are numerous villages, hamlets, and individual properties which are connected by a network of A and B roads, forming a fragmented landscape.

3.8.13. The A38 MRN scheme falls within the Bristol, Avon Valleys and Ridges National Character Area (NCA). The Mendip Hills Area of Outstanding Natural Beauty (AONB) is located directly south of the A38 online improvements. There are numerous Public Rights of Way (PRoW) within the study area.

3.8.14. The components of the A38 MRN scheme as described in Section 2.2 are likely to be similar in appearance to existing highway infrastructure and hence are not likely to result in a significant change of the local setting or visual amenity.

TOWNSCAPE

3.8.15. Townscape refers to areas where the built environment is dominant. There are no anticipated effects on townscape arising from the A38 MRN scheme This is because the works being considered are in rural areas which are not dominated by the built environment.

HISTORIC ENVIRONMENT

3.8.16. Within 100m from the A38 MRN online improvements, there are 2 identified Scheduled Monuments and 2 Grade II Listed Buildings.

3.8.17. The impacts on designated assets by A38 online improvements are assessed to be broadly neutral.

BIODIVERSITY

3.8.18. The A38 MRN online improvements are located approximately 3.5 km south east of the North Somerset and Mendip Bats Special Areas of Conservation (SAC), although the site is not directly impacted by the proposed online improvements.

3.8.19. The Hartcliff Rocks Quarry and Lulsgate Quarry Site of Special Scientific Interest (SSSI) are both located within 1 km of the A38 online improvements.

3.8.20. It is noted that A38 MRN widening and junction improvements close to the airport are adjacent to the Felton Common Local Nature Reserve and the Felton Hill and Common Site of Nature Conservation Interest (SNCI), although these sites are not directly impacted by any works.

3.8.21. Habitat loss from undeveloped land in the highway corridor, including hedgerows and other trees, for any scheme would potentially adversely affect flora and fauna, including protected and non-protected species. Future design work would be informed by ecological surveys and impact assessments and would include mitigation aiming to avoid and / or minimise potential adverse impacts. Biodiversity Net Gain will be a requirement as the design progresses.

WATER ENVIRONMENT

3.8.22. It is considered unlikely that watercourses, water quality or groundwater resources would be negatively affected by the A38 MRN scheme. The A38 passes between the Barrow Tanks reservoirs, but no works directly affect them. Construction works will need to be carefully planned near the reservoirs and close to any other watercourses draining into the reservoirs to avoid contamination of the water supply. This will require consultation with the Environment Agency and Bristol Water. Other watercourses that might affected include multiple smaller watercourses and land drains.

3.8.23. A Preliminary Flood Risk Assessment (FRA) has been completed for BSWEL to:

- Identify the likely existing and future fluvial and tidal flood risk to the proposed scheme alignments;

- Highlight Areas Benefiting from Defences and Standard of Protection;
- Provide a high-level assessment of the potential implications of flood risk to and because of the route alignments and to identify the need to apply the Exception Test;
- Make a judgement on, and the likely achievability of management and mitigation; and
- Highlight the likely need and scope of further assessment.

3.8.24. The majority of the A38 online works are outside EA Flood Zones 2 or 3. The Cowslip Green Alignment Improvement works, however, are near a Flood Zone 2 or 3. These zones are not anticipated to be negatively affected due to flood risk, provided appropriate mitigation measures are included within the designs.

3.9. IMPACT ON SOCIETY

NON-BUSINESS USERS

3.9.1. The scheme will reduce journey times for non-business users along the A38 and is expected to improve connectivity to Bristol Airport and to the Strategic Road Network. It will also improve journey reliability between Bristol and the airport.

PHYSICAL ACTIVITY

3.9.2. There is anticipated to be no impact on walking and cycling trips made because of the MRN scheme.

JOURNEY QUALITY

3.9.3. Transport infrastructure designed to modern standards for all user groups will improve journey quality, including for pedestrians, cyclists, motor vehicle drivers and public transport users. The MRN scheme is expected to reduce traveller stress through decreased journey times and shorter distance journeys, with consequent reduction in the fear of accidents and frustration.

ACCIDENTS

3.9.4. There is expected to be a reduction in the number of personal injury collisions, due to some or all the following factors:

- Transport infrastructure providing dedicated space for pedestrians, cyclists and motor vehicles and designed to current design standards which is expected to improve road safety relative to baseline levels for existing highways; and
- Existing traffic is expected to re-route to use the new highways in preference to existing roads, and therefore reduce the number of accidents on side roads and rural lanes.

3.9.5. Fear of potential collisions is expected to decrease as the transport infrastructure will be designed with appropriate provision for pedestrians, cyclists and motor vehicles (in terms of widths, junction design, lighting, visibility, markings and signage). The human costs of collisions resulting in personal injuries (pain, grief, loss of economic output) would also reduce if fewer collisions occur. Material damage to the road, police costs, insurance administration and legal and court costs are also expected to reduce.

PERSONAL SECURITY

3.9.6. The scheme is likely to have a neutral impact on crime and the perception of crime.

ACCESS TO SERVICES

3.9.7. The physical accessibility of public transport services is not anticipated to change because of the scheme, although journeys will be more reliable.

AFFORDABILITY

3.9.8. Costs for private vehicle users (in terms of fuel consumption) have been shown to fall marginally due improved efficiency relating to reduced congestion.

3.9.9. Increased accessibility to public transport should see an increase in the affordability of transport for some users.

SEVERANCE

3.9.10. The severance effect of the MRN scheme is likely to be neutral to slightly beneficial as the Downside Road scheme incorporates safe crossing locations for pedestrians and cyclists and locally improved cycling facilities.

OPTION VALUES

3.9.11. The highway scheme does not directly change or introduce new public transport services.

3.10. VALUE FOR MONEY STATEMENT

3.10.1. The BCR of the A38 MRN Scheme is 4.7, representing Very High value for money.

4. MANAGEMENT CASE

4.1. INTRODUCTION

4.1.1. The A38 MRN Scheme will be delivered by North Somerset Council and Somerset County Council. It is sponsored by the Western Gateway Sub-National Transport Body and has the support of the South West Peninsula SNTB.

4.1.2. The MRN scheme has been identified in the Bristol South West Economic Link Study (BSWEL), developed by the Councils and their partners[18] as an investment case to significantly improve the A38 and A370 road corridors between Highbridge, Weston-super-Mare, Bristol Airport and Bristol. The study aims to assist in and to support economic and housing growth, and the development and expansion of Bristol Airport and the Junction 21 Enterprise Area. The catalyst for this work has been the desire to consider an infrastructure project that supports development and stimulates local economic growth.

4.1.3. The MRN scheme has been scrutinised with a Project Board formed for BSWEL. It has three Voting Members, these being representatives of North Somerset Council, Somerset County Council and Bristol Airport.

4.1.4. Other members of the BSWEL Project Board have no voting role but do provide guidance and scrutiny of the project. They are:

- West of England Combined Authority;
- Bristol City Council;
- Sedgemoor District Council;
- Highways England; and
- Network Rail.

4.2. EVIDENCE OF SIMILAR PROJECTS

4.2.1. Both Councils have a proven track record of successful major project delivery. Delivering projects on time and budget is core to their success such that benefits are secured for their communities as swiftly as possible. Strong and robust governance, project and financial management is supported by robust communication plans recognising the demands of the local communities whilst ensuring delivery is streamlined and managed effectively during construction.

4.2.2. Both Councils are well advanced in:

- Delivering major transport schemes on time and within budget;
- Successfully obtaining consents for major infrastructure schemes;
- Developing and maintaining good working relationship with key partners and stakeholders; and
- Internal resourcing and governance requirements for major schemes.

[18] Bristol Airport, Somerset County Council, the West of England Combined Authority, Bristol City Council, Sedgemoor District Council, Highways England and Network Rail.

4.2.3. Examples of recent major highway projects delivered by Somerset County Council to budget and programme include the:

- **Yeovil Western Corridor** major scheme (£14m)[19] completed in June 2019;
- **Colley Lane Southern Access Road** (£18m)[20] in Bridgwater which is on track for completion in September 2019; and
- Close to M5 Junction 24 roundabout, **Huntworth Roundabout upgrade** as a local growth fund scheme (£4m) in summer 2016[21].

4.2.4. Significant schemes which North Somerset Council has successfully delivered include the following:

- **Parklands**

  North Somerset Council is delivering the £13m North South Link Road in Locking Parklands. The new highway will form the main link through Parklands Village on the former RAF Locking base and surrounding land. It will run from the A371 in Locking towards Churchland Way in West Wick and will open land allocated for up to 1,800 homes and 2,700 jobs at Parklands Village, as well as providing access to a new Parklands Primary School.

  Construction started in November 2018 and is likely to be open to traffic by late 2020.

- **A4174 South Bristol Link**

  North Somerset Council partnered with Bristol City Council to deliver the A4174 South Bristol Link. This was a £45million project to provide a 4.5km single carriageway highway with parallel bus lanes between the A370 in Long Ashton and Hengrove Park in South Bristol. It required the planning and construction of a new railway bridge to enable the Bristol-South West mainline to cross over the road. Many local businesses view the road as vital to the regeneration of the area and believe it will encourage investment and create more jobs.

  A new link into the Brookgate business area from the South Bristol Link provides local businesses with a direct connection to the national road network. The highway creates the right conditions for valuable new jobs, new business and new opportunities that can help the local economy grow. It is forecast to bring £224m of economic benefit to the area and to unlock approximately 2,500 jobs in the local area.

  This project was developed in advance which allowed project commencement immediately after approval of the funding.

  The management and delivery of this project was successfully undertaken by North Somerset Council using the Council's Corporate Project Management methodology which is based on PRINCE2. The highway extends into Bristol City Council's area and demonstrates North Somerset Council's ability to work successfully on cross-boundary projects.

[19] https://somersetnewsroom.com/2019/06/12/yeovil-western-corridor-junctions-completed/

[20] https://www.clsar.co.uk/

[21] https://heartofswlep.co.uk/projects/huntworth-roundabout-bridgwater/

Construction of the scheme started in March 2015 and the road was opened in January 2017. It was delivered on time and on budget. A Ministerial opening took place in January 2017. The Link won at the CIHT Southwest Regional Awards 2017 as Transport Project of the Year.

Figure 4-1 – A4174 South Bristol Link

- **Weston Package**

  The Weston Package was a £15million scheme to improve traffic flows around Weston-super-Mare and reduce congestion at M5 J21. In addition to improvements to M5 J21, it included dualling of the A370, a new car park and bus interchange at Worle Station (now named Diamond Batch) and bus priority lanes. The Weston Package was delivered ahead of programme and under budget. Completed by February 2014, it has provided benefits such as large reductions in congestion and queuing at Junction 21 of the M5 and across the town.

  North Somerset Council has been in partnership with Highways England on several occasions to deliver incremental improvements to M5 J21. Following the major improvement in 2014, further sliproad improvements were completed in 2016 as part of a £1.2million project to provide an additional lane on the northbound sliproad onto the M5. North Somerset Council contributed £0.45m towards the project with the balance provided by DfT.

IN PARTNERSHIP WITH WEST OF ENGLAND AUTHORITIES

4.2.5. The West of England authorities (North Somerset Council, Bristol City Council, South Gloucestershire Council and Bath & North East Somerset Council), both individually and collectively, have a proven track record of delivering major transport infrastructure including:

- Cycling City
- Greater Bristol Bus Network (GBBN)
- MetroBus

4.2.6. These projects were complex and demanding and required new ways of working across the authorities and with stakeholders such that the authorities have considerable internal knowledge, experience and capability of major transport schemes and their delivery.

4.2.7. GBBN was a £70 million project and included new bus priority measures, improved shelters, real-time information and new buses. The route network included the A370 between Bristol and Weston-super-Mare.

4.2.8. MetroBus is the most recent project delivered by the authorities. Costing £230m, it provides three limited-stop, high frequency bus services connecting Bristol city centre to the North Fringe, Hengrove and Long Ashton with significant bus-only infrastructure and priority. The first MetroBus services started operating in summer 2018 and all services were running from January 2019.

4.3. PROGRAMME AND PROJECT DEPENDENCIES

PROGRAMME DEPENDENCIES

4.3.1. The Downside Road junction improvement scheme is subject to planning approval (a planning application from Bristol Airport that includes the scheme component is already under consideration by North Somerset Council) due to work outside the highway boundary.

4.3.2. Procurement of all design and construction services will be required to develop, design and deliver the improvements identified within this SOBC submission. This will need to be undertaken in a timely and co-ordinated manner and will need to dovetail into the existing governance protocols of the Councils.

4.3.3. Environmental surveys can be seasonally restricted with significant programme loss and constraints if a particular habitat and/or species survey misses the window of opportunity.

PROJECT DEPENDENCIES

4.3.4. The MRN Scheme will have dependencies on other stakeholder projects and programmes:

- WECA takes responsibility for the coordination of transport infrastructure and improvements in Bristol, South Gloucestershire and Bath & North East Somerset. It will need to be satisfied that any infrastructure proposed in North Somerset is complementary to existing and proposed infrastructure in its area.
- North Somerset Council will liaise with Bristol Airport to maintain highway access to the airport and to minimise disruption during construction.
- Highways England will take very close interest in how traffic flows change on the M5 motorway and at M5 J22.
- Bristol City Council has been and will continue to be an important partner as improvements to the highway network within North Somerset will have benefits/implications for travel for its residents.

4.3.5. The MRN Scheme has been assessed at a strategic level for:

- Environmental constraints;
- Engineering constraints;
- Acceptability to the public and stakeholders;
- Planning or orders required; and
- Timescales and phasing.

4.3.6. Most of the land required for the MRN Scheme is currently under the control of North Somerset Council and Somerset County Council as highway authorities. There is also land already in the ownership of Bristol Airport.

4.3.7. If the SOBC is successful, Bristol Airport has agreed in principle to transfer land to North Somerset Council as highway authority to enable the Downside Road improvement.

4.3.8. A further parcel of land is required upon which Bristol Airport have commenced negotiation to acquire.

4.3.9. To ensure project programme milestones are met and risks around survey work is minimised timely notification of award would be hugely beneficial in capturing early benefits and delivering the project by 2022.

4.4. GOVERNANCE, ORGANISATIONAL STRUCTURE AND ROLES

4.4.1. The A38 MRN Scheme will be brought into existing corporate project procedures and structures at with sub-groups established for individual elements as required. This allows oversight and monitoring at the most senior level to ensure that the different strands are brought together and driven forward. Infrastructure delivery is recognised in corporate Council performance management systems as key priorities.

4.4.2. North Somerset Council's governance structure is shown in Figure 4-2 and described in the following paragraphs. The requirements of North Somerset Council and Somerset County Council are broadly similar. The tiers identified within the structure and how they relate to the MRN Scheme are explained in the paragraphs that follow.

LEVELS OF GOVERNANCE AND APPLICABILITY TO THE A38 MRN SCHEME

Tier One

4.4.3. Tier 1 represents North Somerset Council's most senior decision-making bodies, including where in partnership with external partners such as the West of England Joint Committee.

4.4.4. Given the financial value of the MRN Scheme, key decisions will require Full Council authority.

4.4.5. Operational delivery decisions are likely to be delegated to Executive, Executive Member or Director level.

4.4.6. All North Somerset's key projects are led by a Project Sponsor. This sponsor is accountable for ensuring that the work is governed effectively and delivers the objectives that meet identified needs; importantly the sponsor owns the business case. They are also the accountable budget holder for the project.

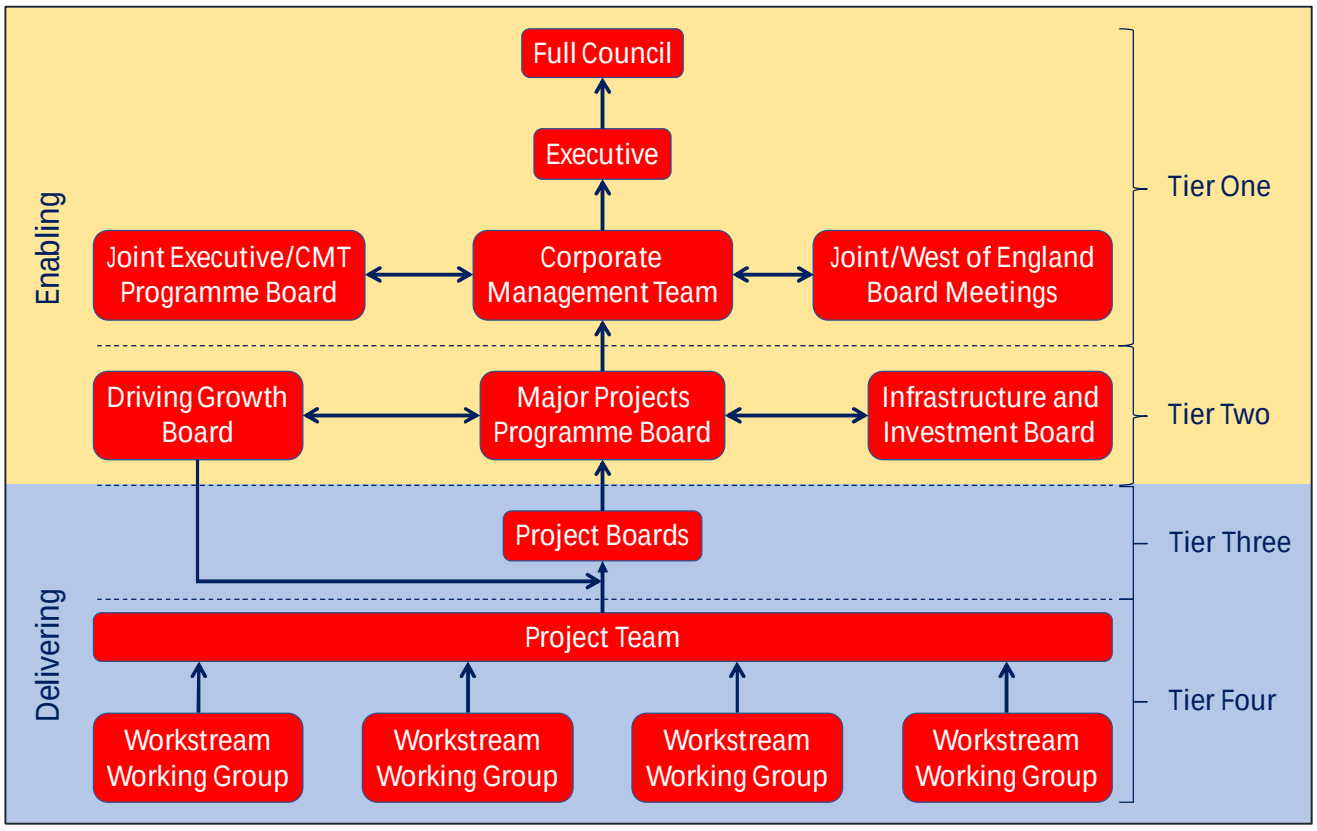
4.4.7. The Project Sponsor for the A38 MRN Scheme is the Head of Transport and Infrastructure, Colin Medus.

4.4.8. The Project Sponsor reports to the Corporate Management Team (CMT) and meets as the Major Projects Programme Board. This board provides the project delivery function for projects generated by the Tier 2 Driving Growth Board (DGB), and approved for funding by the Tier 2 Infrastructure and Investment Board (IIB). It provides strategic oversight for all projects within the council, allowing for joint benefits and opportunities to be assessed as well as project prioritisation throughout a projects life cycle.

4.4.9. The Major Projects Programme Board (MPPB) is co-ordinated and administered by the Major Projects Team (MPT) and chaired by the Chief Executive as part of their role as Director for Corporate Services.

4.4.10. Reporting to the MPPB is monthly, with a RAG rating assessment for the projects in scope. There are regular “deep dives” into specific projects/programmes, based on an agreed forward plan. The Project Client and Project Manager attend the board meetings as required.

Figure 4-2 - The A38 MRN Scheme Governance Structure



4.4.11. The Senior Responsible Owner (SRO) has the overall accountability for the delivery of the project ensuring it remains focused on achieving its objectives. The SRO has the authority to make decisions concerning the delivery of the project within delegated parameters. The SRO is responsible for:

- Providing clear leadership and direction through the life of the project;
- Ensuring the project governance arrangements comply with the Project Plan through:
- Review and sign off key products;

- Ensuring key milestones are managed well;
- Ensuring change is effectively managed and escalated appropriately;
- Ensuring that the project is technically and financially viable and compliant with the Project Plan;
- Managing the interface with key senior stakeholders;
- Commissioning appropriate assurance to determine that the project is fit to proceed to the next stage/phase, for example Peer reviews;
- Approving project risk log changes and mitigating actions;
- Approving the regular Board reports.

4.4.12. The SRO for the MRN Scheme is Jonathan Kirby, Head of Major Projects.

Tier Two

4.4.13. Tier 2 level comprises the:

- Driving Growth Board which sets strategy for growth and economic development; and
- Investment & Infrastructure Board which provides senior officer sign-off and financial monitoring for projects to be included in the Council's capital programme.

4.4.14. The Boards are made up of senior representatives from across the organisation to ensure full corporate understanding and ownership of decisions. They are attended by North Somerset's Section 151 officer and the Director of Development & Environment.

4.4.15. Growth-related programmes and projects are taken first to the Driving Growth Board (DGB) for approval of concept and with Project Initiation Documentation (PID) prior to financial sign-off from the Investment & Infrastructure Board (IIB). Monthly highlight reporting follows, with the IIB focused on the capital delivery and financial elements of the scheme, and the DGB on the wider delivery of infrastructure and development, although both boards retain sight of all elements.

Tier Three

4.4.16. Tier 3 of the project governance structure provides the primary juncture for project delivery and this divides across two main bodies:

- Strategic Infrastructure Programme Board which drives and monitors delivery of capital projects, which would include transport, utilities and flood mitigation. It is chaired by Jonathan Kirby, North Somerset's Head of Major Projects.
- Strategic Development Locations Programme Board, tasked with driving forward delivery of new development, including place-making and infrastructure strategies, land assembly/ acquisition (where appropriate) and liaison with developers. It is chaired by the Head of Placemaking and Growth, Alex Hearn.

4.4.17. The Project Boards provide high level challenge and independent assessment. These Project Boards meet monthly and as a pre-requisite have the following project documentation, which is used also for the 'deep dive' MPPB reviews and RAG exception reporting to more senior levels:

- Project Highlight report
- Budget table
- Programme
- Risk & Issues Log
- Project organogram

4.4.18. Project communications, consultation and stakeholder management are all owned by the Project Board. The communications and stakeholder management plans are prepared for board review and, once signed off at MPPB level, become the responsibility of the Project Board.

4.4.19. As well as the Chairs, the Boards include the workstream leads, appropriate service representatives, lead external consultant (where applicable), cost consultants and client representation.

Tier Four

4.4.20. Tier 4 is the Project Team level which is managed and led by Senior Project Managers as part of the day to day project management. In the case of the MRN Scheme, a Working Group will meet fortnightly or monthly as needed by the scheme programme. It is expected that if/when funding is secured, the overarching Project Team will meet less frequently but that separate teams will be set up with officers representing appropriate disciplines for each project led by specialist Project Managers.

4.4.21. The A38 MRN Scheme Project Manager (PM) is responsible for managing delivery of the project. The PM leads and manages the project team with the authority and responsibility to run the project on a day-to-day basis.

4.4.22. The MRN Scheme PM is Alex Fear, Senior Major Projects Manager, and is responsible for:

- Managing the project on a day-to-day basis within the remit provided by the Project Board and delegations provided by the SRO;
- Ensuring that the project produces the required products, to the required standard of quality and within the specified constraints of time and cost;
- Establishing the project organisation, defining roles and responsibilities and deliverables for each team member;
- Performing project planning, monitoring and control;
- Ensuring that statutory and regulatory processes are followed and appropriate consents are obtained;
- Ensuring compliance with Partner's standards and processes;
- Managing and administrating any consultant or supplier contracts;
- Managing project risks, including the development of contingency plans and initiating corrective action when necessary;
- Reporting through agreed reporting lines on project progress.

4.4.23. The Project Delivery Teams are responsible for the delivery of the project to cost, time and quality. The teams include both local authority, consultant and developer members (where appropriate) to ensure we maintain the capacity to deliver over the long term.

4.4.24. The teams meet monthly (or as needed) to review progress reports, risks and issues, including those that need to be escalated to the SRO and Board.

4.4.25. The Project Delivery Teams consider the following items as a minimum:

- Progress reports
- SRO/Board decisions;
- Project progress in relation to programme;
- Issues;
- Identification of new risks or changes to risk rating;
- Change control/exception plans.

PROJECT DELIVERY FRAMEWORK:

4.4.26. North Somerset Council has an established Major Projects Delivery Function and a Head of Major Projects (Jonathan Kirby). This has built upon the Council's successful previous major project delivery to further enhance the resource capacity and capability to meet the needs of major projects being delivered seamlessly across the functions of highways and built environments supporting the Council's ambition to drive growth and regeneration across North Somerset.

4.4.27. The core objectives for this team are outlined below;

- Focused on delivering housing, regeneration, property and highways initiatives
- Ensure robust analysis and management of major works from initial concept, through feasibility, detailed design and delivery to completion
- Ensure adherence to appropriate internal and external governance arrangements
- Ensure accurate and timely reporting to internal clients, external funders and other agencies and maintain clear boundaries between delivery, client and maintenance functions.
- Embed commercial astuteness to project delivery
- Increase the efficiency of project delivery and manages resources more effectively
- Work within a framework which clearly distinguishes between the function of setting priorities & securing funding from project delivery
- Maximise retention by empowering staff and creating more visible career pathways
- Develop a business case and required structures to support trading of MP&TSDT services to clients other than North Somerset Council on a commercial basis.

PROJECT DELIVERY TEAM

Senior Responsible Owner (SRO)

4.4.28. The A38 MRN Scheme SRO is Jonathan Kirby, Head of Major Projects. Jonathan has helped to successfully deliver a wide range of major projects in recent years, including £16m property projects, £60m highways schemes and £10m annually on local transport schemes and maintenance. Projecting forward to 2022, North Somerset Council anticipates spending a further £220m on a range of new projects including regeneration schemes, new schools, housing, transport projects, leisure and flood relief schemes,

4.4.29. The Council has set up a Major Projects and Technical Services department. This department is to compliment and support the development and delivery of the Place Making and Growth agenda of the council. The MPTS team will provide high quality contract management and corporate compliance across the organisation; via officers having clear roles and responsibilities. The department will provide for robust analysis and management (Leadership) across project and commercial technical services contract delivery for circa £6m revenue responsibility.

Project Manager

4.4.30. The A38 MRN Scheme PM is Alex Fear, Senior Major Projects Manager. Alex is an experienced Service Manager and Project Manager with 30 years of experience managing and delivering infrastructure projects. Alex was behind the successful completion of Weston Civic Pride, Weston Package and South Bristol Link projects.

4.4.31. Alex has extensive connections with a wide range of professionals and stakeholders and understands the need to develop strong collaborative working relationships to support the delivery of the best outcomes. His most recent project management has seen the successful major project scheme delivery of both South Bristol Link and Weston Package – on time and budget ensuring that benefits are secured to North Somerset's communities as swiftly as possible.

4.4.32. The multi-award winning South Bristol Link had a total value £43.3m with a 64% contribution from DfT (Major Schemes) and was delivered on time and on budget

4.4.33. Weston Package was a £15million scheme to improve traffic flows around Weston-super-Mare and reduce congestion at junction 21 of the M5. As a 'package' it included, improvements to a motorway junction, dualling of a carriageway, new rail station car park, new bus interchange and bus priority lanes. The package was delivered ahead of programme and under budget.

WORKING WITH DELIVERY PARTNERS

Public Sector Partners

4.4.34. The Councils work closely with all relevant public-sector partners on infrastructure and development delivery, and work in partnership with the West of England Combined Authority is particularly critical for North Somerset Council.

4.4.35. Partnership working is governed through well-established arrangements including the legally constituted West of England Joint Committee which comprises the Leaders of the four local authorities and the West of England Combined Authority Mayor. The Joint Committee leads and has delegated decision-making powers over a range of matters including the West of England Joint Spatial Plan, Joint Local Transport Plan and various funding streams including the City-Deal and Local Growth Fund. These are set within a government approved Assurance Framework. The Joint Committee is supported by several Boards, for example the Infrastructure Advisory Board which is made up of the portfolio lead Executive Members from the constituent authorities.

4.4.36. This West of England partnership working includes extensive involvement from Homes England, who alongside the local authorities and Registered Providers sit on a recently initiated Housing Delivery Board. This seeks to ensure maximum alignment of funding and delivery activities across the partners, with a focus on additionality to and acceleration of supply of the West of England's Joint Spatial Plan housing numbers.

4.4.37. Partners such as Highways England, Natural England, the NHS and statutory providers meet with the West of England authorities through a Strategic Solutions Panel.

Development Partners

4.4.38. The A38 MRN Scheme demonstrates the Councils' commitment to partnership working and ability to garner support. A project board will be convened for the MRN Scheme comprising North Somerset and Somerset Councils, Bristol Airport, Mendip District Council, Sedgemoor District Council, Highways England, the West of England Combined Authority and Bristol City Council.

4.5. PROGRAMME/PROJECT PLAN FOR THE OBC

4.5.1. A programme for the preparation and delivery of the A38 MRN Outline Business Case is included in Table 4-1. It assumes a successful SOBC submission with a target submission of the OBC to the DfT in December 2019.

Table 4-1 - Timeline for the Production of an OBC

Timeline for production of OBC	Due Date
Production of SOBC, OAR and ASR (if not already produced).	Completed
Production of LMVR.	Completed
Completion of base model (if necessary)	Completed
Forecasting Report	Spring 2020
Start and end of public consultation	Spring/Summer 2020
Adoption of preferred option	Summer/Autumn 2020
Submission of OBC	Autumn 2020

4.6. SCHEME DELIVERY

The anticipated scheme delivery milestones are summarised in Table 4-2.

Table 4-2 – Scheme Delivery Milestones

Milestone	Anticipated Delivery
Submission of Outline Business Case (OBC).	Autumn 2020
Submission of planning application.	Summer/Autumn 2020
Determination of planning decision.	Autumn/Winter 2020
Publication of scheme orders/CPOs.	Winter 2020
Completion of Public Inquiry.	n/a
Confirmation of all statutory orders and consents.	Spring 2021
Completion of procurement.	Spring 2021
Full Business Case submitted to DfT.	Summer 2021
Start of Construction.	Autumn 2021
Scheme open to public.	Autumn 2022

4.7. ORDERS AND CONSENTS

4.7.1. It is not anticipated that CPO will be required. Land is either in the ownership of North Somerset Council, Somerset County Council and Bristol Airport.

4.7.2. Bristol Airport is negotiating to acquire remaining third-party land for the Downside Road improvement.

4.7.3. If the SOBC is successful, Bristol Airport will transfer the land in its ownership and needed to deliver the Downside Road improvement to North Somerset Council.

4.7.4. The following Statutory Orders and consents are anticipated:

(i) Traffic Regulation Orders (TRO)

TRO powers' will be exercised by the respective local highway authority and in line with nationally agreed processes for advertising and consultation. These will be required for any regulatory signs and road markings such as for speed limits and banned turning movements. Temporary TROs will be required during construction to safely control traffic and non-motorised users.

(ii) Ecology and Environmental consents

The following ecology and environmental consents are likely to be required;

a) Environmental Permit(s) for flood risk activities, including Flood Risk Activity Permits through Environmental Permitting

b) Regulations for temporary works. Control of Pollution Act, Section 61 Consent - for out of hours or particularly disruptive works.

(iii) New Roads and Streetworks Act (NRSWA)

Road Opening Notices / permitting is managed by the respective Council as the streetworks authority. Necessary diversionary and protection works will be organised through the NRSWA process.

4.8. BENEFITS REALISATION PLAN

4.8.1. The Benefits Realisation Plan is used to define how benefits will be delivered and when a measurement of the achievements of the project's benefits can be made. The Plan will relate to the Project outcomes and will assume all outputs will be delivered in line with the agreed project approach.

Objectives that could be considered for a Benefits Realisation Plan could be as suggested in Table 4-3.

4.8.2. The benefits could be measured from:

- Number of new jobs created, and the number of new businesses, vacancy rates and employment floorspace using a survey of businesses;
- Repeating the methodology of the initial study;
- Accessibility modelling using specialist accessibility modelling software;
- Static vehicle counters (ATCs or ANPR), TrafficMaster data, and RTI (for buses) as a measure of traffic conditions; and
- AQMA monitoring points.

4.8.3. A Benefits Realisation Plan is not required for SOBC and will be developed to outline for the OBC in line with DfT guidance for business cases.

Table 4-3 – Suggested Benefits Realisation Plan Primary Objectives

Primary Objectives	What are benefits to be realised and measured
Facilitate regeneration and growth in North Somerset and Somerset	Increase in the number of residents in employment Increase in jobs and employment floorspace Contribution to bringing forward investment associated with additional Gross Value Added Improvement in the indices of multiple deprivation in key wards/ output areas Increase in the number of people able to access sites of employment and key services
Reduce congestion in North Somerset and Somerset, at M5 J22 and areas of south Bristol	Reduced congestion, improved air quality, and improved journey time reliability at identified congestion hotspots Reduced traffic flows to improve quality of life in rural lanes and residential streets Businesses report that transport problems are no longer a leading barrier to success Quality of and satisfaction in journey time reliability and network resilience
Improve accessibility from Somerset and North Somerset to Bristol city centre, and to strategic transport links including the SRN and Bristol Airport	Improved journey times between key residential, business, and wider network sites Improved network resilience

4.9. MONITORING AND EVALUATION PLAN

4.9.1. The A38 MRN Scheme represents a substantial investment in the transport network by the Department for Transport (DfT) and the Councils. There is a need to demonstrate that this scale of investment is accountable, provides value for money, and enables lessons to be learned from the delivery of the scheme to inform future decision making.

4.9.2. Providing an evaluation plan is necessary to demonstrate that the proposals meet their objectives effectively and represent a robust intervention consistent with national and local transport policies and needs. The submission of an evaluation plan is therefore a condition for the DfT to grant funding approval for major transport schemes.

4.9.3. The A38 MRN Scheme comprises several components and, whilst the components are individual projects, they are being promoted as a programme and evaluation will be undertaken under a common framework to take account of this.

4.9.4. A detailed Evaluation Plan is not required for SOBC and will be provided for OBC. It will set out what performance measures will be assessed, and the information, associated collection methods and timescales that will be assembled to demonstrate how effective the investment has been. The plan will follow DfT guidance and will structured as follows:

1. Scheme background and context
2. Scheme objective and outcomes (including logic map for each scheme)
3. Evaluation objectives and research questions
4. Evaluation approach
5. Data requirements and Collection Methods
6. Resourcing and governance
7. Delivery plan
8. Dissemination plan

4.9.5. The core evaluation objectives will demonstrate that the MRN scheme has:

- Reduced congestion
- Improved the resilience of the corridor
- Supported economic growth across the Region's gateway
- Supported housing delivery
- Supported growth of Bristol airport
- Supported all road users; and
- Supported the Strategic Road Network.

4.10. PROJECT ASSURANCE AND APPROVALS PLAN

4.10.1. Assurance provides information to those that sponsor, govern and manage a project to help them make better informed decisions which reduce the causes of project failure, promote the conditions for success and increase the chance of delivering the required outcome cost-effectively. It helps ensure the disciplines around delivering projects are followed and highlights where they have not been.

4.10.2. In line with PRINCE2 principles, the Councils' project assurance also provides an independent review of how the project is progressing. Assurance is about checking that the project remains viable in terms of costs and benefits (business assurance), checking the user requirements are being met (user assurance) and that the project is delivering a suitable solution (supplier assurance).

4.10.3. Project Assurance provides the basic framework of controls to ensure that:

- The project is being managed and controlled as directed by the SRO;
- Basic standards are being followed; and
- The project is well managed.

4.10.4. The assurance framework will test that the defined control limits for the project are appropriate and highlight whether they have exceeded or are in danger of exceeding:

- Time - variance against milestones from the project programme
- Cost - variance against planned budget and spend profile
- Quality - degrees off the quality target
- Scope - variance agreed against what will be delivered

- Risks - limits on identified risks as a percentage of the overall budget or as a significant variance on time
- Benefit - variance against level of benefit identified as part of the business justification

4.10.5. Assurance helps enable management by exception and acts as a trigger for intervention, notably if the project starts to exceed agreed control limits on time, cost and/or quality.

4.10.6. The Councils' systems are outcome focussed, not activity focussed and are in place to assure the overall benefits of the project and not for the project itself.

4.10.7. The Councils have undertaken informal assurance reviews for the A38 MRN Scheme. They have established clear criteria for identifying and measuring elements in the project which are uncertain and turned them into understood areas of risk.

4.10.8. The assurance processes have informed the approval of the project to proceed to date and, to ensure continual improvement in project delivery in the future, assurance will act as a primary method for transferring learning between projects and developing an understanding of any systemic issues affecting the delivery of future programmes and portfolios.

CORE ELEMENTS OF OUR ASSURANCE SYSTEM

4.10.9. There are four core elements to the assurance system:

- Plan: from consideration of the assurance needs of the project to the point at which a review team is commissioned to perform a review
- Do: from the point at which the assurance team is commissioned to perform a review to the production of a report
- Report: from the point at which an assurance report is produced to the communication of analysed findings to different stakeholders
- Control: from the point at which analysed findings are received to the escalation of issues for decision making or remedial action

4.10.10. Successful implementation of all four elements through the lifecycle of the project should enable the following benefits to be achieved.

- Primary benefit
  - Reduction in the variance between baseline and forecast profile across the project, judged against time, cost, quality, scope, risk and benefits.
- Secondary benefits
  - Increase in the impact of assurance (time, cost and quality)
  - Increase in project action following assurance
  - Increase in the perception of reviewer quality
  - Evidence that project staff are using and learning from the lessons of past projects; i.e. a reduction in the number of repeated lessons learned
  - Improvement in stakeholder perception of the value of assurance

4.10.11. The primary project assurance controls within the delivery framework are:

- Regular reporting;
- Exception reporting and re-authorisation; and
- Gateway and regular Peer Reviews.

REGULAR REPORTING

4.10.12. Communication of reports is essential to underpin their use as monitoring tools and they will be communicated as follows:

- Project Team meetings – held formally monthly
- SRO Meetings – held formally between the PM and SRO monthly
- By exception in urgent cases

4.10.13. The monitoring processes can be summarised as follows:

- Financial and Management Reporting – Progress reported to Project Board and Major Projects Programme Board (MPPB) at two monthly intervals
- Highlight Report – Monthly reporting on overall project progress
- Project Progress Report – for discussion between PM and SRO monthly
- Exception Report – considered at Project Team meetings and presented to the SRO if / when required
- Programme – considered at Project Team meetings and SRO meetings
- Risk – Project Risk Register owned by PM and reported via Highlight Report
- Issues – Project Issue Log owned by PM and reported via Highlight Report
- Change – levels of delegated power to be established by the Project Board / MPPB; change documented in Exception Report

GATEWAY REVIEW PROCESS

4.10.14. The Gateway Review Process is aligned with the former Office of Government Commerce (OGC) processes. They are a valuable tool for ensuring successful project and programme delivery, providing an independent perspective on issues, external challenge to plans and support to the SRO.

4.10.15. Teams will be put together to provide assurance to check appropriate process is in place and is being followed, as well as sharing lessons learnt from previous major infrastructure projects. The Gateway Review team will support the SRO to ensure confidence in the delivery of the programme through providing sufficient evidence-based findings and recommendations which are confirmed by more than one person across those interviewed.

4.10.16. The Gateway process includes five gates:

- Gate 1 – Business Justification – looks at the What and the Why
- Gate 2 – Delivery Strategy – looks at the How
- Gate 3 – Investment Decision - assessment of the proposed solution – did we do what we said we would at Gate 2; Risk management – are risk and issue logs up to date? Have all risks that have materialised been appropriately resolved or mitigated? Is the project under control? Review of Business Case and Stakeholders to ensure that the project is still required.
- Gate 4 – Ready for Service – very similar to Gate 3 but now post-delivery team involvement; lessons learnt; risk management and closure
- Gate 5 – Benefits Realisation and Operational Review – review of operational phase; is business case still valid? Did NSC achieve more or less than anticipated in terms of delivery? Is the end user satisfied? Review of organisational learning; Plans for continuous improvement, performance and innovation; Value for money?

4.10.17. At each review stage, a concise report is collated following a number of interviews with project team members and delivery partners. The interviews are confidential, and all information is non-attributable. The key is to obtain information about any project concerns and look for evidence of best practice.

4.10.18. The Gateway review process provides project and programme assurance through

- Providing a proactive risk management focus
- Bringing together stakeholders to promote open communications
- Maintaining focus on delivering the benefits throughout and not just at the end of the delivery programme
- Keeping the programme team honest with themselves so that issues can be addresses early and escalated when assistance is required
- Ensuring the SRO is engaged and knows what is expected of them throughout the programme lifecycle
- Setting out clear structures for all those involved
- Providing a clear feedback loop for continuous improvement

BIM (BUILDING INFORMATION MODELLING)

4.10.19. Having developed and delivered at BIM 1 for previous infrastructure projects and securing the efficiency and collaborative benefits which it can derive, it is intended to ensure the infrastructure for this bid is BIM 2 compliant as a minimum. This will also form part of the project assurance processes in line with Government principles.

4.10.20. The Councils will seek - through their professional services supply chain and existing framework arrangements - an appropriate BIM advisor to help integrate the BIM ambition within all processes and procedures and to deliver a BIM strategy for the scheme.

4.10.21. Under the requirements of Section 151 of the Local Government Act 1972, the Councils will ensure the financial administrator has adequate project assurance systems in place to verify that the scheme is fit and able to be procured and delivered using council procedures. This will include an Internal Audit team being engaged with the project at key gateways in its progress.

4.10.22. The Councils also have an ambition to undertake A38 MRN design, development and construction activities in accordance with PAS2080:2016 Carbon Management in Infrastructure.

4.11. COMMUNICATION AND STAKEHOLDER MANAGEMENT

4.11.1. The key objectives of stakeholder management are to ensure that effective communication is undertaken as part of the project to:

- Keep stakeholders aware of the project/scheme's development and progress;
- Meet statutory requirements resulting from environmental consents and planning conditions;
- Increase public and stakeholder awareness of the project/scheme through local publicity, website etc; and
- Provide information and support to those affected by the scheme during construction and operation.

4.11.2. An overarching communications strategy will be developed and managed by the PM, with support from the Project Board. This will ensure a coordinated approach to communicating with, and managing, stakeholders. The strategy will include ongoing regular meetings with relevant internal

and external stakeholders. The Plan will be developed and tailored to suit the requirements of the MRN Scheme and stakeholder requirements as we develop the scheme to Outline and Full Business and delivery.

4.11.3. Communication lines will be established so that the project team and stakeholders are aware of how this will operate and to ensure any issues are dealt with swiftly and appropriately. It is also important that options for feedback and input are established so that the project objectives are met.

4.11.4. A Communication and Stakeholder Management Plan will be used to deliver the A38 MRN Scheme. The Plan will outline the Councils' proposed approach to effective communication of activities and progress throughout the delivery of the MRN Scheme with stakeholders and the community. The objectives of the plan will be to:

- Ensure that stakeholders are aware of the project, that they understand why it is necessary and what benefits it will deliver;
- Ensure 'buy in' from all key stakeholders;
- Create momentum and enthusiasm among internal colleagues and stakeholders involved to contribute towards the successful implementation and delivery of the project;
- Manage expectations among stakeholders;
- Highlight and promote the benefits of the new works streams and their implementation;
- Provide timely and accurate information to the identified stakeholders about the project; and
- Ensure project deliverables meet stakeholders' and customers' needs, and that they can provide feedback on the project.

4.11.5. The Plan will identify key activities prior to and during construction that are likely to have the biggest impact on the local community and stakeholders and will require communications to be carefully planned and managed. These include the impact of traffic management, road closures, footpath diversions, visual impact, noise and air quality during the works, and the possibility of some night time working.

4.11.6. The Plan will also identify key internal and external stakeholders who will be required to be informed and updated prior to and during the works, and how these stakeholders will be engaged during delivery.

4.11.7. The Plan will ensure that there is an ongoing programme of activity to satisfy the need to engage with the public and stakeholders and communicate progress during the scheme's development. The plan will be updated to reflect the most up-to-date information as it becomes available and any changes in programme and related activities.

4.11.8. The PM will ensure a programme of regular meetings take place with the contractors and designers to ensure that the project/package component is on target.

4.11.9. The A38 MRN Scheme has no implications for Network Rail. It also has no direct impact on the Strategic Road Network and Highways England. It does however complement SRN infrastructure and, on completion, will contribute towards wider network resilience by providing an MRN corridor of greater capacity within the wider West of England highway network. Both Network Rail and Highways England sit on the BSWEL Project Board, of which the A38 MRN Scheme is a component within this wider project and are hence inherently aware of the MRN schemes objectives, components and how it would affect their respective transport networks.

4.12. PROGRAMME/PROJECT REPORTING

4.12.1. Responsibility for accurate, timely and appropriate communications within the project team rests with the SRO. Nominated officials and the Project Manager have a responsibility to provide this information when required. The SRO will then ensure that this information is reported through scheduled meetings.

4.12.2. The SRO is responsible for keeping Lead Members aware of the MRN Scheme towards meeting its objectives. Nominated officials and the Project Manager of the Working Group will disseminate this information within their own authority.

4.12.3. Formal management procedures used to monitor the progress of the project are summarised in Table 4-4.

Table 4-4 – A38 MRN Management Procedures

Report type	Detail
Financial and management	Regular financial reporting will be critical to ensure that the Project Board, SRO and PM are able to track progress against timescales and budgets. Progress will be reported to other Boards via the regular calendar meetings.
Highlights	Every month, Highlight Reports will be submitted to the Project Board. This will include an update on progress against project plan, budget plan and report on risk management. These reports will form the basis of the high-level monitoring report to the other Boards.
Exceptions	All project issues that have an impact on either the completion date or the budget (inclusive of the risk budget) will require a formal Exception Report containing the proposed rectification measures. These will be prepared by the Project Team, considered in the monthly team meetings and presented to the PM and SRO where necessary.
Programme	The programme forms the key instrument for monitoring progress and is an essential tool defined within the NEC for this purpose. Monitoring of progress will be matched against the agreed programme and reported at both Project Team Meetings, PM and SRO meetings. The overall programme will be owned by the client team and development partners and subsequently the contractors.
Risks	The PM is responsible for tracking and monitoring the Project Risk Register as part of the formal reporting procedures. The monthly progress meetings will also undertake formal risk reviews. The most significant risks will be reviewed at each meeting of the Project Board via the Highlight report. A risk owner will be identified, who will be best able to manage the risk.

Report type	Detail
Issues	An issue is an event that has happened, was not planned, and requires management action. It could be a problem/query/concern or change to the programme (affecting all or part of the project in some way). All issues raised, from whichever source, will be logged on the Project Issue Log and summarised in the highlight reports. The Issue Log provides a management tool for the PM in the on-going tracking and monitoring of issue resolution.
Change	It is recognised that change will occur during the implementation of the project. A sliding scale of delegated powers will be established and agreed by the Boards to allow different levels of the governance structure to make change decisions. All material changes, for whatever reason, will be documented in an Exception Report. Following any agreed change all relevant project management documentation will be updated in advance of the next PM and SRO meeting.

4.12.4. How monitoring reports will be communicated is described in Table 4-5.

Table 4-5 – Monitoring Report Communication

Meeting	Detail
Progress meeting – project delivery team	The Project Team will have formal meetings as needed, typically monthly. This meeting will be to review key progress in the period and review any issues that may have arisen or are likely to occur. The meeting will be an opportunity for any potential project changes to be discussed and, where applicable, commencement of change control procedures as set out below. Progress against programme will also be discussed and, where appropriate, mitigating measures put in place to ensure the scheme element is brought back in line with the agreed programme.
SRO meetings	The PM will meet formally with the SRO every month following the Project Delivery Team meeting. This meeting will consider budgets, spend and financial forecasting. Risks, programme, changes or exceptions will also be considered at these monthly meetings as appropriate. The Project Progress Report will form the basis of this discussion. The PM will summarise delivery team reports to the board through the exception report and highlight report process.

4.13. RISK MANAGEMENT STRATEGY

RISK MANAGEMENT

4.13.1. Full details of the risk management strategy will be provided in the Outline Business Case. The approach to risk management and quantification of risk, including undertaking a Quantified Risk Assessment, is based on the four-step process prescribed by Transport Analysis Guidance Unit A1.2 which includes:

- Risk identification;
- Assessing the impacts of risk to determine possible outcomes;
- Estimating the likelihood of the possible outcomes occurring; and
- Deriving the probability distribution and expected value of the costs of the scheme.

4.13.2. The risk management strategy will include the following:

- A quantified risk assessment;
- A risk register containing all risks associated with the scheme; and
- A cumulative distribution for forecast risk.

4.13.3. A four-step risk management process will be adopted to ensure that risks are managed effectively. This is shown in Figure 4-3.

Figure 4-3 - Four-Step Risk Management Process

4.13.4. Reports will include:

- Highlights Report: for Stage and Project level risks;
- End of Project Report: for risk status at the end of the Project;
- Exception Report: in the case of a risk tolerance being exceeded;
- Checkpoint Report (optional): for Project Manager regarding work package risks; and
- End Stage Report (optional): for risk status at the end of each stage.

RISK REGISTER

4.13.5. A risk register will be completed for the Outline Business Case which will list identified risks that are likely to impact upon the delivery and operation of the scheme.

4.13.6. Individual risk registers will be developed for each of the work-streams, and will be maintained by the MRN Scheme Project Manager. The initial risk register for the overarching programme will be developed and maintained by the Programme Manager.

4.13.7. The risk registers will be regularly reviewed by the Programme Manager and scheme project managers to ensure risks are effectively managed and contained. The top risks will be provided to the Programme Board meetings for review along with any escalated issues requiring immediate action.

MOST SIGNIFICANT RISKS

4.13.8. The most significant risks to successful project delivery are as follows:

Land

4.13.9. Most of the land required for the MRN Scheme is currently under the control of North Somerset Council and Somerset County Council as highway authorities. There is also land already in the ownership of Bristol Airport.

4.13.10. If the SOBC is successful, Bristol Airport has agreed in principle to transfer land to North Somerset Council as highway authority to enable the Downside Road improvement.

Utilities

4.13.11. Whilst stage appropriate statutory undertaker searches have been undertaken to inform both the design and cost breakdown elements including risk analysis, the risk of utility details provided by the statutory undertakers being incorrect exists which may impact upon scheme development.

Planning

4.13.12. Planning permission is required for the Downside Road element as the works are outside the public highway.

Route sensitivity / traffic management

4.13.13. The strategic importance of the A38, and the MRN Scheme's proximity to Bristol Airport require a careful consideration of construction activities and traffic management planning. It is therefore a significant risk that if this is not planned and implemented effectively, delays to the travelling public and impact on businesses could result in negative public perception. Public and stakeholder engagement will be undertaken to manage this risk and cost and programme impact is low.

Stakeholders

4.13.14. Modification to the highway and changes to allowable vehicle movements could result in public and stakeholder objection. Late changes to the scheme to address these issues would impact cost and potentially programme. A stakeholder management plan will be prepared to manage this risk.

Design development

4.13.15. Further design work will be required to gain certainty of cost. As detailed in the financial case, at this stage the cost estimates consider risk proportionate to the maturity of the design to make a suitable allowance.

Unknown constraints – ecology, ground, services

4.13.16. Further investigatory work is necessary to fully define the site and environmental constraints. Targeted site investigatory work and surveys have been undertaken to manage this risk, which will be developed further as part of the OBC, to establish full details of site constraints. Cost and programme impact are considered medium.

Ground conditions

4.13.17. The works, whilst mainly within the public highway, do involve verge works which can be of uncertain nature and will require major reconstruction of existing highway layers which may have tar bound issues which will need to be resolved.

Project doesn't fit with MRN aspirations

4.13.18. Successful delivery of the project relies on meeting the requirements of the MRN. There is a risk that the scheme does not fit with these objectives, resulting in the need for changes to the scheme. The risk is managed by mapping of scheme objectives with those of the MRN and design reviews against these objectives. Cost and programme impact is considered low.

Financial Risk

4.13.19. The key financial or funding risks have been identified as:

- Failure to obtain funding;
- Delay in obtaining funding;
- Bristol Airport not achieving sufficient commercial growth to secure/enable anticipated funding contributions to schemes;
- Inaccurate inflation allowance;
- Change to VAT;
- Inaccurate fee estimations;
- Failure to identify appropriate market costs or works estimation; and
- Poor financial control.

4.14. PROJECT MANAGEMENT OPTIONS

4.14.1. A project board is in place for the MRN Scheme (in line with North Somerset's approved existing project management and governance arrangements) but with the inclusion of Somerset County Council as a project board member. The board will provide scrutiny of the programme and scheme delivery within the corporate processes detailed earlier in this section. There is also wider stakeholder interest including Bristol Airport, Mendip District Council, Sedgemoor District Council, Highways England, the West of England Combined Authority and Bristol City Council.

5. COMMERCIAL CASE

5.1. INTRODUCTION

5.1.1. The commercial case provides evidence on the commercial viability of the A38 MRN scheme proposal and the procurement strategy that will be used to engage the market. It sets out the financial implications of the proposed procurement strategy and presents evidence on risk allocation and transfer, contract timescales and implementation timescale as well as details of the capability and skills of the team delivering the project and any personnel implications arising from the proposal.

5.1.2. The necessary elements required in the Commercial Case to achieve compliance are:

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

5.1.3. For a Strategic Outline Business Case only the Output Based Specification and Procurement Strategy are required in outline format, i.e. initial findings. Some other elements of the requirements have been drafted to assist with future development of the Outline and Full Business Case.

5.1.4. The Commercial Case will be developed following the outline set out below:

- Set the procurement objectives, outcomes and constraints
- Identify potential procurement / purchasing options
- Assess the procurement options in terms of pros and cons, as a rationale for selecting the preferred sourcing option
- Confirm the preferred payment mechanism and pricing framework
- Assess how different types of risk might be apportioned / shared, with risks allocated to the party best placed to manage them.

5.1.5. This commercial case details the arrangements for North Somerset Council. Somerset County Council aligns with these arrangements too but will be detailed further at OBC stage.

5.1.6. The aim of both councils will be to ensure value for money and timely delivery without compromising build quality.

5.2. OUTPUT BASED SPECIFICATION

5.2.1. The successful delivery of the MRN scheme at an outturn cost within the allocated budget will be determined by a wide range of factors which go beyond the chosen approach to the procurement strategy. For example, the form of contract on its own will not determine whether the project is successful. Factors which will contribute to a successful outcome of delivery within budget include:

- Clarity of objectives and common understanding by all parties;
- Robustness of cost estimates;
- Adequacy of the risk-pot including allowance for inflation;
- Effectiveness of project control processes, including Gateways;
- Quality of the design, specification and contract documents;
- Engagement of the supply chain and timing of the procurement processes;
- Compliance with Procurement Regulations and avoidance of procedural challenges;
- Appropriateness of the selection process and selection criteria;
- Robustness of the tender assessment process;
- Adequacy of the tender sum to deliver requirements;
- Clear understanding and allocation of contractual risks allied to a fair and transparent risk management process;
- Effectiveness of partnership and team working during construction;
- Quality of the project and contract management;
- Alignment of contractual performance incentives between the Employer and Contractor;
- Early Contractor Involvement;
- Effectiveness of dispute avoidance and resolution procedures; and
- Availability of the necessary resources.

5.2.2. These can be grouped into the following broad categories:

- Project objectives;
- Cost estimating;
- Risk management;
- Project governance;
- Form of contract;
- Supplier selection;
- Performance management; and
- Resource capacity and capability.

5.2.3. North Somerset Council has extensive experience in carrying out successful OJEU compliant schemes with a wide range of contract values, including the recent £26m main works contract of the A4174 South Bristol Link which was delivered on time and within budget with the highway open in January 2017.

5.2.4. The commercial approach will:

- Deliver schemes and infrastructure that support the economic prosperity of North Somerset by making a transformational change that improves connectivity across the area;
- Deliver schemes that are affordable, demonstrate best value and provide good value for money for the investment;
- Deliver schemes that meet the objectives set for the scheme;
- Deliver schemes that meet the needs of all stakeholders; and
- Minimise environmental impacts and provide a net gain to the environment, including its flora and fauna.

5.2.5. Due to the variety of measures, infrastructure types and stakeholders that make up each package, a variety of different procurement strategies are likely to be appropriate, however all of them will be defined against the following key objectives.

- Price certainty;
- Securing optimised whole-life cost;
- Meeting funding timescales for delivery;
- Optimising the apportionment of risk;
- Meeting stakeholders' requirements; and
- Providing a net gain to the environment, including its flora and fauna.

5.2.6. Full details of procurement methods for individual packages will be provided at Outline Business Case.

5.3. PROCUREMENT STRATEGY

DESCRIPTION

5.3.1. The Procurement Strategy for the MRN scheme will be the same as or similar to that proposed by North Somerset Council in its HIF bid for the Banwell Bypass in February 2019.

5.3.2. The overarching objective for the Councils is to deliver infrastructure within budget and to programme.

5.3.3. Procurement objectives are:

- To deliver infrastructure that maximises, underpins and de-risks associated development in the shortest possible timeline;
- To identify and deliver infrastructure that is affordable and provides good value for money;
- To identify and deliver infrastructure that meets the needs of all stakeholders including developers and local communities; and
- To minimise environmental impacts of the infrastructure and to provide a net gain to the environment, including its flora and fauna.

5.3.4. In achieving this, we will:

- Optimise whole-life costs;
- Apportion risk to the party best able to manage those risks;
- Incentivise innovation during both procurement and construction stages;
- Maximise Social Value – tangible and quantifiable benefits in line with North Somerset Council's Social Value Policy.
- Secure biodiversity net gain and carbon management in infrastructure

KEY STEPS AND OUTLINE PROGRAMME

5.3.5. For the development of a sound procurement strategy which can deliver the outputs necessary, some key elements are required:

- Approval of the commissioning plan and procurement plan by the Councils;
- Client and stakeholder objectives translated into measurable, specific and achievable Employer's requirements; Formal assessment of NEC contract options; Selection of the most appropriate procurement procedure and corresponding timescales; Selection of the most appropriate quality and price evaluation process.
- Prepare procurement for suppliers and contractors to carry out design for planning purposes.
- Prepare procurement to appoint contractor to start construction works

OUTPUT BASED SPECIFICATIONS

5.3.6. In the context of an output-based specification, the procurement strategy will be managed dynamically, as follows:

- Robust cost estimates informed by latest industry costings independently checked and verified;
- Early supply chain engagement and contractor involvement;
- Robust risk allocation using QRA assessment including for industry inflation;
- Effective project management processes and controls including formal peer and Gateway reviews;
- Design quality, specifications and contract documents;
- Legally sound and compliance with Public Contract Regulations and the Councils' Contract Standing Orders;
- Robust tender assessment, selection process and appropriate Price/Quality Evaluation criteria;
- Adequate tender sums to deliver the requirements of the intervention across the disciplines;
- Fair and transparent risk management processes which allocate risk and responsibilities to the party best placed to manage them;
- Effective and sound partnership team working; vertically with the supply and delivery chain and horizontally with stakeholders and development partners;
- Quality of contract management to ensure successful delivery;
- Aligning contractual performance incentives between the Employer/Developer and Contractor;
- Sound communication strategy, shared by all stakeholders and transparent to all users;
- Effective and sound dispute resolution procedures; and
- Capable and available resources with the capacity and technical understanding required.

BIM (BUILDING INFORMATION MODELLING)

5.3.7. Design of the infrastructure for the project will be BIM 2 compliant as a minimum. A BIM advisor will integrate the BIM ambition within all processes and procedures to deliver a BIM strategy for the project.

5.4. REASONING FOR THE PREFERRED PROCUREMENT STRATEGY

5.4.1. The Councils could pursue several procurement routes. These include:

- Design only and separate build (Traditional);
- Design and Build (D&B); and
- Early Contractor Involvement (ECI).

5.4.2. Table 5-1 presents the key procurement routes and the advantages/disadvantages of each.

Table 5-1 - Potential Procurement Routes

Option	Advantages	Disadvantages
Construction only - Only the construction of the works is tendered with the design completed prior to tendering by the Employer.	Completed design is tendered to the market, and should result in the most competitive tender prices being returned Tenderers are more likely to price risk lower to provide a competitive tender Standard contract forms Employer retains control of all design and decisions Tender period is shorter, in comparison to a design and build (no ECI) tender	Procurement follows design and is therefore likely to be on the project programme's critical path To comply with Procurement Regulation the tender process should not commence until the design and contract documents are completed No contractor involvement in design, limiting value engineering opportunities Limited flexibility to revise scope to optimise value for money or keep within budget if tenders returned are higher than expected Design risk is retained by the Employer

Option	Advantages	Disadvantages
Early Contractor Involvement (ECI) with separate contract for construction - Early in the development of the scheme design a contractor is appointed to provide input to the scheme during the planning and design phases. The scope can be wide-ranging and flexible, and could include design and/or pricing of key elements to confirm viability. Construction of the works would be tenderer separately, and the contractor who provided the ECI input wouldn't necessarily be one of the tenderers.	Simple contract forms for both ECI and construction procurement Contractor input into planning and design More accurate cost estimating and construction durations Completed design is tendered to the market, and should result in the most competitive tender prices being returned Construction stage tenderers are more likely to price risk lower to provide a competitive tender Employer retains control of all design and decisions	Without any commitment to the construction phase, Contractors may not be fully engaged with the project and provide the best advice One Contractor's preferred design/methodology may not suit others who ultimately tender/construct the scheme Design risk is retained by the Employer Procurement of construction follows design and is therefore likely to be on the project programme's critical path To comply with Procurement Regulation the tender process should not commence until the design and contract documents are completed Limited flexibility to revise scope to optimise value for money or keep within budget if tenders returned are higher than expected

Option	Advantages	Disadvantages
ECI Design and Build - A single tender process, but one that covers 2 (ECI - Design and Construct) or 3 stages (ECI - Design - Construct) with the option for the Employer to proceed to each subsequent phase or terminate the contract without further cost. As part of each phase the contractor develops a price and programme (correlating to a scope provided by the Employer) for the next phase, if the proposal is accepted the contract proceeds to the next stage. Initially only the ECI phase would be fully priced by the tenderers which could be based on a fixed scope or a schedule of rates. For the subsequent stages key contract terms would be included in the tender such as contract form and options, and the tenderers would be required to submit various fee percentages that would be applicable to those stages.	The Employer can choose if to proceed to the next stage without incurring contract termination costs. Therefore, leaving the option open to revert to one of the other procurement options Very flexible, the Employer can change the scope simply to reflect changes in programme/budget etc prior to proceeding to the next stage Successful contractor likely to be engaged with the project development as they have a vested interest in progression through the stages Early and short procurement, so not likely to be on the project's critical path	Contractor not incentivised to reduce risk & contingency allowances during construction stage, so will likely price it higher than if competitively tendered Contract form would be more complex work to incorporate stages

Option	Advantages	Disadvantages
Design and build (no ECI) - Comprises of a single tender for both the detailed design and construction of the project, which typically is issued after planning consent/orders for the project have been confirmed.	Relatively simple form of contract Procurement not likely to be on the project programme critical path Design risk transferred to Contractor Contractor input into planning and value engineering throughout project stages Contractors can incorporate value engineering within their design Project costs determined earlier than other options	Employer has less control over design and decisions, contract documents need to be carefully compiled to ensure all Employer requirements are included Greater risk to Contractors so tendered prices are likely to be higher by comparison Tender costs are high as some design typically needs to be undertaken at risk, so Contractor interest may be reduced Limited flexibility to revise scope to optimise value for money or keep within budget if tenders returned are higher than expected Requires commitment to both design and construction phases, termination costs would be due to the contractor if works don't proceed

5.4.3. The Councils will undertake the procurement route most beneficial at the time of the procurement exercise and dependent upon prevailing market conditions and sentiment but will require the procurement activity to:

- Improve collaborative working;
- Provide better certainty of cost;
- Accurately forecast construction programme;
- Maximise value engineering / buildability;
- Effectively manage and apportion risk; and
- Control design development to achieve the desired outcomes.

PROCUREMENT TENDER OPTIONS

5.4.4. Table 5-2 summarises the key procurement options available and the advantages/disadvantages of each:

Table 5-2 – Procurement Tender Options

Option	Description	Advantages/Disadvantages	Take Forward?
OJEU Open procedure	One stage process	Advantages: • Large potential market with access to a wide range of tenderers. Disadvantages: • Market may not be interested due to small chance of success. • Large evaluation workload for council's team. • Rarely used for similar public procured schemes due to complex nature of scheme.	No
OJEU Restricted procedure	Prequalification followed by inviting a maximum number of bidders to ITT stage.	Advantages: • Widely used for procuring similar schemes • Timescale is shorter. • Prequalification and shortlisting allows filtering of potential tenderers based upon the quality criteria, key outputs and relevant experience / suitability. Disadvantages: • No negotiation period so no scope for scheme specific refinement. • If the design/Works Information is insufficiently developed, the price submission will have significant risk factored in by bidders.	Yes
OJEU competitive procedure with negotiation	Prequalification followed by submission of initial tenders, a negotiation period and then a final tender stage.	Advantages: • Allows refinement of procurement from the supplier's perspective based upon the technical and ITT details.	Yes

Option	Description	Advantages/Disadvantages	Take Forward?
		• Possible to revert to Restricted procedure if negotiation deemed unnecessary. Disadvantages: • Additional time for negotiations could impact upon programme.	
OJEU competitive dialogue	Prequalification followed by Invitation to submit outline solutions, invitation to submit detailed solutions with negotiation periods.	Advantages: • Ability to refine most aspects of the ITT including the award criteria through negotiation with suppliers. Disadvantages: • Additional time and complexity would add risk to scheme budget and programme.	No

5.5. SHARING COSTS AND RISK

5.5.1. Although detail is not required for this SOBC, Project Risk Management is fully supported by using the NEC forms of Contract.

5.5.2. The Contractor would be allocated all risks for which it is able to effectively manage. All risks not to be taken and priced by the contractor would be made compensation events under the contract should they occur. Furthermore, such a contract allows for the development of a separate risk register consisting of tender risks and early warning events, along with a description of mitigation measures.

5.5.3. The NEC4 contracts would support the delivery of the project objectives and would achieve the following:

- A fair allocation of risk with incentives to deliver within budget;
- Provide flexibility in the allocation of risk and the payment mechanism;
- Provide flexibility for the accommodation of change; and
- Provide a strong management stimulus for effective risk management.

6. FINANCIAL CASE

6.1. INTRODUCTION

6.1.1. The financial case details the affordability of the MRN scheme, its funding arrangements and technical accounting issues (value for money is scrutinised in the economic case). It presents the financial profile for the scheme and the impact of the proposed deal on the Department for Transport's budgets and accounts.

6.1.2. This section presents detail appropriate to the Strategic Outline Business Case, which only requires analysis of the budget and funding cover for the project.

6.1.3. The actual costs of delivering the scheme will not be known until the detailed design has been completed, land purchased, and tender prices have been received.

6.2. APPROACH TO ASSESS AFFORDABILITY

6.2.1. Control of costs is critical to the deliverability of the scheme, given the significant constraints on the Councils' finances. The local contribution for the scheme will be secured through Section 106 contributions from developers, with the balance of funding secured from DfT through this bid. No budgets have currently been allocated from either Council to cover cost overruns. However, a relatively small risk allowance has been included within the cost estimates.

6.2.2. Section 106 contributions will be negotiated by the relevant planning authority developer. Where possible, contributions will be tied to the costs of specific infrastructure, thereby removing risk of cost overruns to the Local Authorities at these locations.

6.2.3. For each scheme element, where cost increases are possible, every effort will be made to implement Value Engineering to keep the project within budget. If savings cannot be made then the impact on overall budget will be communicated by the Project Manager to the Project Board. The scheme is scalable, and therefore options to remove elements of the scheme will be considered, provided a strong fit with the scheme's objectives and value for money can be maintained.

6.3. BUDGETS AND FUNDING COVER

CAPITAL COSTS

6.3.1. It is anticipated that scheme design and construction would be funded in part by Central Government through the DfT and funding from North Somerset Council, Somerset County Council and the West of England Combined Authority.

REVENUE COSTS

6.3.2. At this stage the impact on operating costs is assumed to be broadly neutral.

COST BREAKDOWN

6.3.3. The package of components that make up the A38 MRN Scheme have been outlined at a high level. From this information we have estimated the cost of the schemes using a combination of item rates, lump sums and percentage values. This achieves the most accurate estimate of costs possible at the SOBC stage.

6.3.4. Each component has been estimated separately, shown in Table 6-1. The total cost is £23.41m.

6.3.5. Preparation, supervision and a contingency or risk figure have been calculated based on the construction cost. The A4174 South Bristol Link (a recently completed scheme in North Somerset) has been used to benchmark the preparation and supervision costs, relative to the construction cost.

6.3.6. Quantified Risk Analysis will be carried for the Outline Business Case. An allowance for contingency or risk has been calculated from the total cost of each package. Given the low level of the design detail at SOBC stage, a value of 15% has been used. Optimism bias in not included in the Financial Case.

Table 6-1 - Costs including risk, cost base 2019 Q3, £m

Component	Construction	Preparation	Supervision	Land	Risk	Inflation	TOTAL
A38/Barrow Gurney Junction	£1.922	£0.384	£0.077	£0.000	£0.238	£0.272	£2.893
A38/Downside Road Junction Improvements	£4.929	£0.936	£0.197	£0.000	£0.611	£0.699	£7.372
A38 Widening East of Airport	£3.083	£0.567	£0.123	£0.000	£0.382	£0.437	£4.592
A38 Redhill Safety Improvements	£0.303	£0.061	£0.012	£0.000	£0.038	£0.043	£0.457
A38/Cowslip Green	£1.472	£0.244	£0.059	£0.000	£0.183	£0.209	£2.167
A38 Safety Improvements, Cross	£0.132	£0.027	£0.005	£0.000	£0.016	£0.019	£0.199
A38 Safety Improvements, Rooks Bridge	£0.154	£0.031	£0.006	£0.000	£0.019	£0.022	£0.232
A38 Edithmead Roundabout Improvement	£3.683	£0.687	£0.147	£0.000	£0.457	£0.523	£5.497
TOTAL	**£15.678**	**£2.937**	**£0.626**	**£0.000**	**£1.944**	**£2.224**	**£23.409**

Note: Table includes rounding errors.

INFLATION ASSUMPTIONS

6.3.7. Costs in the Financial Case have been in inflated to out-turn prices using the Tender Price Index (TPI)[22]. This method has been selected as TPI represents the increase in price for which the supplier will offer to carry out the project. TPI has been applied separately to preparation and construction costs to match the project programme.

RISK ASSESSMENT

6.3.8. To reflect the uncertainty associated with known risks, a quantified risk assessment (QRA) and a detailed funding profile will be provided at Outline Business Case.

POTENTIAL THIRD PARTY CONTRIBUTIONS

6.3.9. The Councils will ensure a minimum 15% local contribution is provided towards the scheme.

6.3.10. Bristol Airport will be required to contribute towards the improvements via planning conditions associated with the expansion of the airport to 12m passengers per annum[23].

[22] Data from RICS, BCIS "All-in TPI #101" Updated 21/06/2019
[23] Planning Application No. 18/P/5118/OUT

Appendix A

SCHEME DRAWINGS

Appendix B

OPTIONS ASSESSMENT REPORT

Appendix C

BSWEL STRATEGIC OUTLINE BUSINESS CASE

Appendix D

APPRAISAL SPECIFICATION REPORT

Appendix E

LOCAL MODEL VALIDATION NOTE

Appendix F

FORECASTING NOTE

Appendix G

ECONOMIC APPRAISAL NOTE

Appendix H

A38 EDITHMEAD ROUNDABOUT IMPROVEMENT

Appendix I

ENVIRONMENTAL CONSTRAINTS PLAN

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