Strategic Outline Business Case

June 2019

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Acronyms and Abbreviations

AMCB	Analysis of Monetised Costs and Benefits
AoDM	Area of Detailed Modelling
AQMA	Air Quality Management Area
AWE	Average weekly earnings
BCR	Benefit to Cost Ratio
CIF2	Communities Infrastructure Funding Round 2
COBALT	Cost and Benefit to Accidents – Light Touch
CPI	Consumer Price Index
DfT	Department for Transport
EMP	Employers business
FMA	Fully Modelled Area
GBSLEP	Greater Birmingham and Solihull Local Enterprise Partnership
GDP	Gross domestic product
GHF	Growth and Housing Fund
HAM	Highway Assignment Model
HBW	Home based work
IDB	Internal Drainage Board
LRN	Local road network
LTP	Local Transport Plan 4
MRN	Major Road Network
MRTM	Midland Regional Traffic Model
NO^2	Nitrogen Dioxide
NPIF	National Productivity Investment Fund
NPV	Net Present Value
OAR	Option Assessment Report
OBC	Outline Business Case
ONS	Office for National Statistics
OPIs	Output price indices
PA	Public Accounts
PID	Project Initiation Document
POM	Project Operating Model
PRINCE2	PRojects IN Controlled Environments
QRA	Quantitative Risk Assessment
RSI	Road Side Interview
SLR	Southern Link Road
SOBC	Strategic Outline Business Case
SRN	Strategic Road Network
SRO	Senior Responsible Officer
TEE	Economic Efficiency of the Transport System

TRO	Traffic Regulation Order
TUBA	Transport user benefit appraisal
VDM	Variable Demand Model
VoT	Value of time (VoT).
WCC	Worcestershire County Council
WebTAG	DfTs Transport Analysis Guidance
WLEP	Worcestershire Local Enterprise Partnership
WTS	Worcester Transport Strategy

Preface

Worcestershire County Council (WCC) is pleased to submit this Strategic Outline Business Case (SOBC) to the Department for Transport (DfT) to obtain funds from the Major Road Network (MRN) Fund. The scheme being promoted – the A38 Bromsgrove Route Enhancement Programme - will deliver a major upgrade of the A38 corridor, (a key part of the MRN network in Worcestershire), between the junction of the A38 Eastern Bypass with the B4094 Worcester Road to the south, and M5 Junction 4 to the north.

The scheme is a high priority both for WCC and Worcestershire Local Enterprise Partnership (WLEP), which have also allocated circa £6m of Local Growth Funding (LGF) for this scheme. The scheme is well developed, has a strong strategic case, is backed by political support and is included in Worcestershire's LTP4 and the City and Town Centre Investment Programme of WLEP's Strategic Economic Plan (SEP). The A38 improvements are also a priority within the Regional Evidence Base, compiled by Midlands Connect.

The A38 corridor acts as a route that performs a range of different functions, providing a link to the Strategic Road Network (SRN), a bypass to Bromsgrove town centre, a distributor road for journeys that have an origin and/or destination in Bromsgrove and a local access route for residents and businesses that have direct frontages on to the corridor. The pattern of surrounding land use changes along the corridor mean the overall character and feel of the route varies along its length, with differing speed limits and levels of provision for pedestrians and cyclists.

The corridor experiences congestion and delay at key junctions, leading to unreliable journey times. This situation is projected to worsen as additional traffic associated with significant levels of new housing and employment planned for the local area are delivered. To effectively support future development and to deliver economic growth, significant improvements are required to the corridor itself, supported by targeted improvements for other modes.

This SOBC builds on the work presented in an Outline Business Case (OBC) to WLEP in 2016 (equivalent to a DfT SOBC). The first package of the corridor improvements is being progressed ahead of this MRN bid and is being delivered in two phases. Phase 1 is currently under construction, delivering enhancements to the junction of the A38 with Barley Mow Lane. Phase 2 works will bring key improvements to the junctions of the A38 with M5 Junction 4 and M42 Junction 1. These works will be delivered in 2020/21 subject to final funding approval by WLEP and GBSLEP and following the successful funding award from Highways England through their Growth and Housing Fund (GHF) initiative in 2018.

The remaining junctions in the original 2016 OBC submission were focussed on improvements to junction capacity that would reduce delay and improve reliability on the highway corridor. Since this time, the overall context for transport in Bromsgrove, as well as understanding of the performance of the A38 corridor and its ability to cater for traffic growth from development pressures, has evolved.

To maximise the benefits that can be achieved from improvements to the A38 corridor, a process of reviewing the schemes included in the A38 package at 2016 OBC stage has been undertaken. This MRN bid seeks funding for an updated scheme for the A38 corridor which:

- Is based on a new traffic model, including latest forecast year models, which provides a more sophisticated tool to aid understanding of the performance of the A38 corridor and has enabled a better understanding to be gained about how traffic growth should be catered for.
- Uses new traffic modelling information to evolve proposals for junction enhancements to ensure these are optimised to cater for future traffic conditions.
- Builds on the nine corridors and associated walking and cycling schemes, currently being delivered via the National Productivity Infrastructure Fund (NPIF) process, to identify additional interventions to support walking and cycling on and near the A38 corridor.
- Seeks to identify schemes that will help to address the actual and perceived barrier caused by the A38, enabling more walking and cycling across the town and delivering better linkages to the railway station. There is also opportunity to improve north south links between residential and employment areas.

The A38 Bromsgrove Route Enhancement Programme addresses the MRN priorities by:

- Reducing congestion – Without improvements, existing congestion at junctions will continue to worsen leading to increased journey time and increased cost to the economy. The traffic modelling shows that in 2040, in the do-minimum scenario, junction capacity is exceeded at multiple locations on the corridor and journey times are increased.
- Supporting economic growth and rebalancing – Congestion on the A38 affects the wider economy, restricts labour markets and impacts on the ability of employees to access potential employment. Improvements are required to enable the A38 corridor to function effectively for businesses and workers.
- Supporting housing delivery - The ability to accommodate future housing growth will be restricted without improvements, due to limited capacity on the network. Junction improvements will enable the network to cater for planned development and support delivery of the Local Plan requirements.
- Supporting all road users – Opportunities to support mode shift to walking and cycling are restricted due to actual and perceived severance caused by the A38, impacting on local trips and those to the railway station. Walking and cycling improvements included in this scheme address severance issues by providing better facilities along and across the A38, building on schemes being delivered through NPIF. These schemes will aim to improve safety and security for non-motorised users crossing the A38, resulting in a reduced number of collisions and subsequent economic active mode user benefits.
- Supporting the SRN - Congestion affects the strategic role of the A38, delaying traffic that is trying to reach the SRN via M5 junction 4 and M42 Junction 1 or using the corridor as a diversionary route, as well as traffic using the corridor to access urban areas and key employment areas south of Birmingham. Improvements to the corridor will provide efficient and reliable access to the M5 via Junction 4 and M42 via Junction 1.

Ultimately, not delivering significant enhancements to the A38 corridor will mean the MRN national priorities will not be achieved in the region. The objectives of key policies set out by the LEPs in their SEPs, by WCC in the LTP and the District Council's in the Local Plans, will also not be realised.

WCC has the necessary resources and proven expertise to deliver the scheme in accordance with the programme and budget. By carrying forward the project team and governance structure already in place to deliver the Package 1 schemes, this bid benefits from an established process, with a clear process for assurance and approvals. The project has a clear and achievable programme that aligns well with the overall timeframe of the MRN process. In addition, the project team demonstrates a good understanding of likely risks, reflecting the fact that the proposed schemes are at a good stage development. The scheme has a good level of support at a high level from relevant stakeholders.

The estimated total cost of the scheme, which includes eight highway schemes and five sustainable mode schemes, is £49.84m (Q3 2019 prices including inflation and Part 1 claims). The scheme costs have been based upon construction rates of projects currently under construction within the Worcestershire County Council area by the term contractor, as such they are expected to represent a robust estimate of scheme costs at this stage of scheme development. Local contributions have been identified from a combination of local funds and developers, equating to a total of £7.644m (15.34%) of total scheme costs.

The A38 Bromsgrove Route Enhancement Programme is supported by a robust case for change, the initial benefit to cost ration (BCR) demonstrates **Very High Value for Money (BCR>4)**, has sound commercial footing, is very well supported by stakeholders and is deliverable. Upon approval of this SOBC the scheme is well positioned to move effectively and efficiently to Outline Business Case stage.

1. Introduction

1.1 This Strategic Outline Business Case

The A38 in Bromsgrove is an important corridor on the Major Road Network (MRN). It acts as a key strategic link, providing access to the Strategic Road Network (SRN), as well as offering an important local function as an eastern bypass to Bromsgrove and providing access to housing, service and employment frontages.

This Strategic Outline Business Case (SOBC) seeks funding to deliver a major upgrade of the A38 corridor between the junction of the A38 Eastern Bypass with the B4094 Worcester Road to the south, and M5 Junction 4 to the north. This is shown on Figure 1.1.

Figure 1.1 – Scheme location

The corridor, around 7.5 miles (or 12.5km) in length, experiences congestion and delay at key junctions leading to unreliable journey times. This situation is projected to worsen as new housing and employment planned for the local area are delivered. To effectively support the future development of Bromsgrove and to deliver economic growth, significant improvements are required to the corridor itself, supported by targeted improvements for other modes.

The proposals recognise the A38 corridor performs a range of functions and has varied character. The proposed scheme includes a range of measures for walking and cycling along and across the A38 corridor. This reflects that whilst the corridor has a strategic function, it also passes through urban and semi urban areas close to schools, shops, employment and residential areas.

The A38 Bromsgrove Route Enhancement Programme (the scheme) for which funding is sought through this MRN bid is an important part of the overall approach to transport in Bromsgrove. It would support ongoing work that is aiming to enhance both the major and local road network, as well as encouraging walking, cycling and the use of public transport.

1.2 Background to the A38 Route Enhancement Programme

This scheme is a high priority both for WCC and for Worcestershire Local Enterprise Partnership (WLEP), which have also allocated circa £6m of Local Growth Funding (LGF) for this scheme. The scheme is well developed, has a strong strategic case backed up by political support and is included in Worcestershire's LTP4 and the City and Town Centre Investment Programme of WLEP's Strategic Economic Plan. A38 improvements are also a priority within the Regional Evidence Base, compiled by Midlands Connect.

Details on the work undertaken to date are provided in the Options Assessment Report (OAR), which supports this SOBC.

Work on the development of this scheme has included the presentation of an initial Outline Business Case (OBC) to Worcestershire Local Enterprise Partnership (WLEP) in 2016 (note that WLEP's OBC requirement is equivalent to a DfT SOBC). The WLEP OBC identified five packages of works focussed specifically on junction capacity.

Package 1 is being progressed ahead of this MRN bid and is being delivered in two phases. Package 1, phase 1 is currently under construction, delivering enhancements to the junction of the A38 with Barley Mow Lane. This has followed a Full Business Case submission (FBC) and funding award from both WLEP and Greater Birmingham and Solihull Local Economic Partnership (GBSLEP). Phase 2 of the Package 1 works will bring key improvements to the junctions of the A38 with M5 Junction 4 and M42 Junction 1. These works will be delivered in 2020/21 subject to further funding approval by WLEP and GBSLEP and following the successful funding award from Highways England through their Growth and Housing Fund (GHF) initiative in 2018.

The remaining four packages of the original 2016 scheme were focussed on reducing delay and improving reliability on the highway corridor. Since this time, the overall context for transport in Bromsgrove (for example with improvements to the rail station and ongoing investment in walking and cycling infrastructure, following the aware of NPIF funding) as well as understanding of the performance of the A38 corridor and its ability to cater for traffic growth from development pressures, has evolved.

1.3 Overview of this MRN bid

To maximise the benefits that can be achieved from improvements to the A38 corridor, a process of reviewing the schemes originally included in the WLEP OBC has been undertaken. This MRN bid seeks funding for an updated and refined scheme for the A38 corridor. The scheme development:

- Has used a new traffic model, including latest forecast year models, that provides a more sophisticated tool to aid understanding of the performance of the A38 corridor and surrounding network, which has enabled a better understanding to be gained about how traffic growth should be catered for.
- Uses new traffic modelling information to evolve proposals for junction enhancements to ensure these are optimised to cater for future traffic conditions.
- Builds on the nine corridors and associated walking and cycling schemes, currently being delivered via the National Productivity Infrastructure Fund (NPIF) process, to identify additional interventions, over and above those initially included within the OBC, to support walking and cycling on and near the A38 corridor.
- Seeks to identify schemes that will help to address the actual and perceived barrier caused by the A38, enabling more walking and cycling across the town and delivering better linkages to the railway station and employment sites to the east of Bromsgrove. There is also opportunity to improve north south links between residential and employment areas.

1.4 Purpose of this document

This document presents a Strategic Outline Business Case to DfT for consideration through the MRN programme. Through this SOBC, funding is sought for an updated scheme for the A38 corridor that will support the Package 1 schemes and ensure the A38 fulfills its role in providing a link to the SRN as well as support the delivery of housing and employment growth, tackle congestion and reliability and improve conditions for pedestrians and cyclists along the A38 corridor. It includes:

- Targeted improvements to key junctions to improve capacity and tackle locations where delay is experienced
- Improvements to traffic signalling, to improve traffic flow and help improve journey time reliability
- Provision of new and improvement of existing facilities for pedestrians and cyclists to help improve accessibility by non-car modes and reduce the severance effect of the A38

1.5 Structure of this document

Following this introduction:

- Chapter 2 sets out the strategic case
- Chapter 3 presents the economic case
- Chapter 4 explains the commercial case
- Chapter 5 sets out the finance case
- Chapter 6 presents the management case.

2. Strategic Case

2.1 Introduction

This section sets out the Strategic Case for the scheme. It explains the wider context, presents the rationale for the scheme and makes the case for why the investment is required. The Strategic Case should be read alongside the supporting Options Assessment Report, included as Appendix A.1 to this SOBC, as this provides further detail on the issues set out.

The remainder of this section:

- Sets out the role and character of the A38 corridor
- Summarises the problems and challenges identified and the justification for intervention
- Provides an overview of the business strategy and policy context
- Explains the impact/consequences of not changing
- Outlines the objectives of the scheme and how they align with problems identified and the MRN requirements
- Presents the key measures for success for the scheme
- Sets out the scope of the project
- Identifies high level constraints and explains the factors (interdependencies) upon which the successful delivery of the project is dependent
- Outlines how stakeholders have been involved in the development of the scheme
- References the option identification process.

2.2 Role of the A38

The A38 corridor has a unique character which contributes to the problems and issues discussed in the following section. The key characteristics are:

- Overall a route that performs a range of different functions, acting as a link to the Strategic Road Network and as a bypass to Bromsgrove town centre, a distributor road for journeys that have an origin and/or destination in Bromsgrove and a local access route for residents and businesses that have direct frontages on to the corridor.
- The corridor comprises various sections with differing speed limits, frontages and access points and varying levels of provision for pedestrians and cyclists. In addition, the pattern of surrounding land use changes meaning that the overall character and feel of the route varies.
- Generally high levels of car dependency across Bromsgrove.

2.2.1 Route function

2017 road-side interview data has been used to understand the various functions of the A38 corridor. This shows that the route caters for a range of different types of trips, both strategic and local.

Figure 2.1 shows the dispersal of origins and destination locations recorded at three Roadside Interview Surveys (RSI) sites on the A38 (these were located south of M5 J4, just north of A38/Birmingham Road and south of A38/Worcester Road Roundabout). The data shows that most of the trips are concentrated within the geographical area bound by the following: East: Redditch; West: Kidderminster; North: South Birmingham; South: Droitwich.

Figure 2.1 – Origin and destination locations recorded

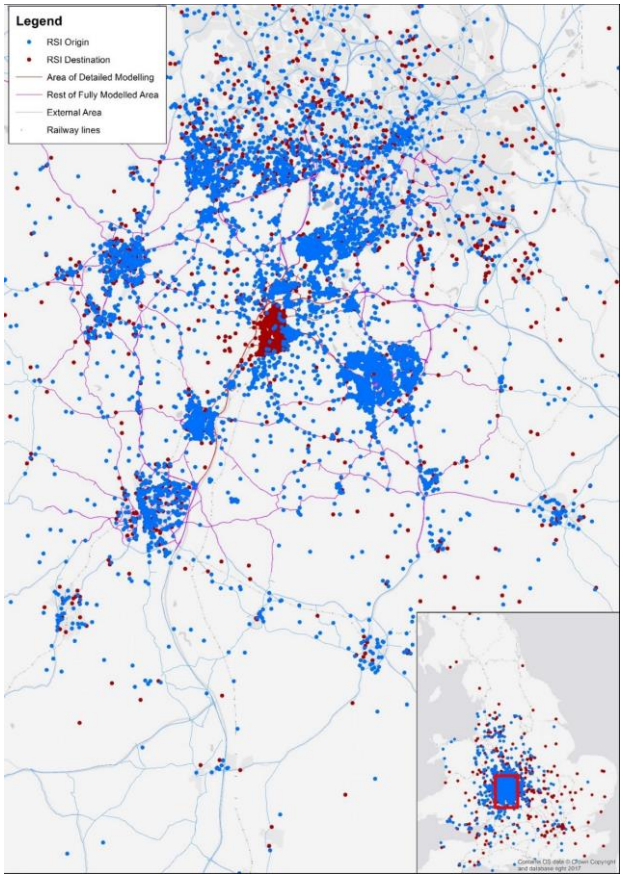


Figure 2.1 clearly shows that the A38 is accommodating traffic to and from other locations within Worcestershire as well as across the wider region. It is therefore functioning as an important part of the MRN, complementing the SRN, as well as catering for trips within the Bromsgrove area. The following sections provide further details.

A38 as a strategic link

The A38 is a critical part of the MRN, providing access to both the M5 (via Junction 4 and 5) and the M42 (via Junction 1). As there are no west facing slip roads at M42 Junction 1, the A38 takes on a pseudo strategic role as a link in the network. This means traffic originating in the Bromsgrove area and wishing to access the M5 (and vice versa) has to route via the A38 between M42 Junction 1 and M5 Junction 4 to access the M5 motorway for destinations to the north of the town. The A38 is also important in providing access to Birmingham Airport as an international gateway and High Speed 2 rail station, via M42 Junction 1. A substantial amount of traffic is, therefore, 'through traffic' that utilises the A38 to access the motorway and for southbound access to the M5 corridor.

The A38 also provides an important route for trips around Bromsgrove, effectively acting as an eastern bypass.

Analysis of RSI data shows that 25.5% of trips on the A38 corridor have origins and destinations outside Bromsgrove, so are therefore of a strategic nature.

A38 as a distributor road

The A38 corridor is important for local car journeys that have an origin and/or destination in Bromsgrove. It also provides access to local shops and services, including to large supermarkets and employment sites. It also provides access to the rail station, situated to the east.

Analysis of RSI data shows that 74.5% of the trips on the corridor have origins or destinations within the Bromsgrove area, so use the A38 as distributor road.

A38 as a local access route for residents and businesses

Importantly, the A38 also acts as the 'front drive' for a range of business and residential properties that line the corridor. In particular the A38 interacts with communities at Stoke Heath, Lickey End and Catshill.

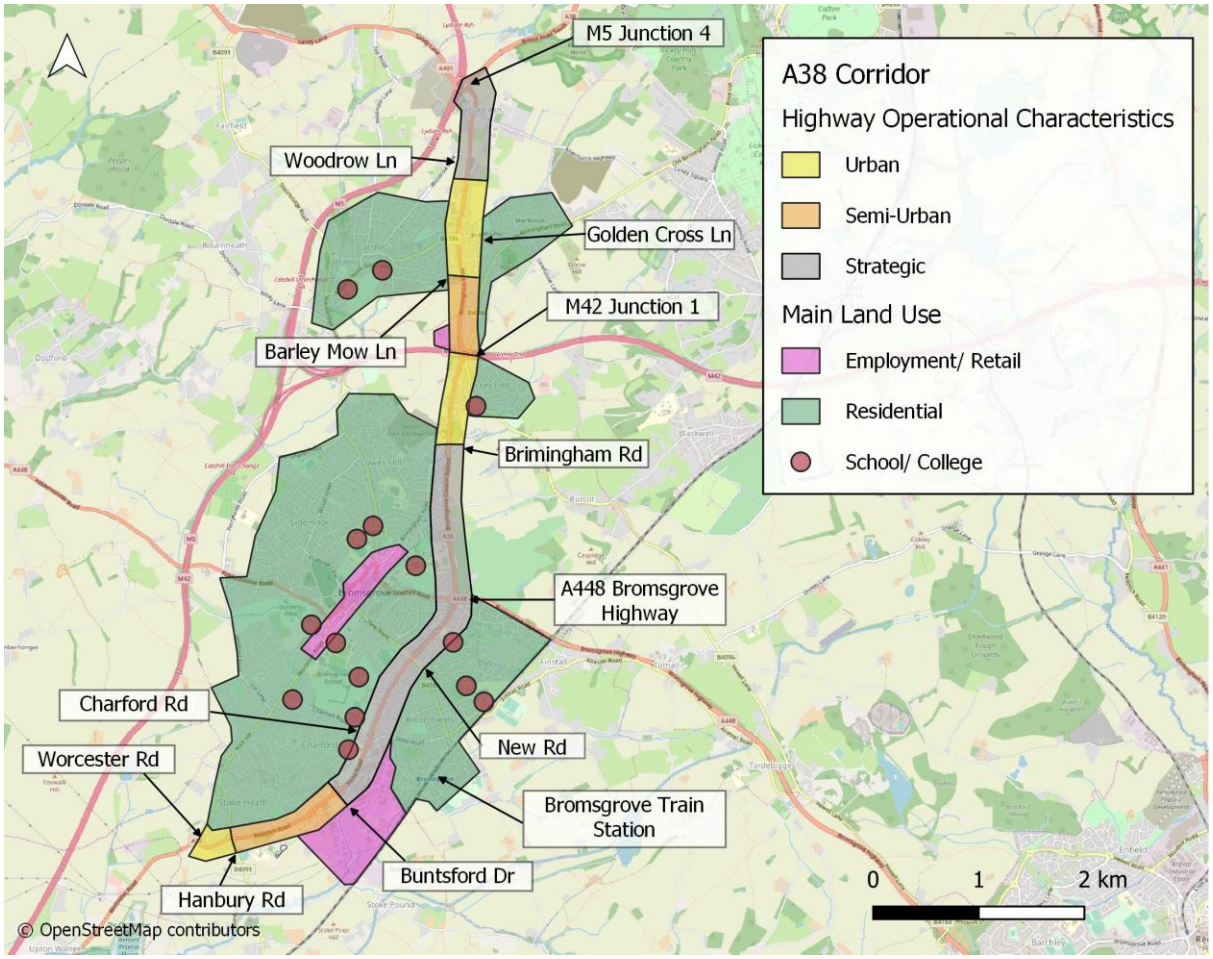
2.2.2 Route character

Along the A38 corridor there are various sections/areas with differing character and feel. Predominantly these areas reflect:

- The highway design characteristics of the route itself, which varies along the corridor in terms of frontages, speed limits and the extent of provision for pedestrians and cyclists.
- The surrounding land uses.

Figure 2.2 shows the different character sections of the corridor.

Figure 2.2 – Character areas, reflecting highway design standard and adjoining uses



Some sections of the route have a 'strategic' highway character. These sections are high quality, high speed and offer high movement functionality. However, there is limited sustainable mode provision along or across the corridor. As shown on Figure 2.2, route sections with this type of design include:

- Austin Road to Birmingham Road junction
- M5 Junction 4 to Old Birmingham Road

Parts of the Austin Road to Birmingham Road section pass through the built-up area of eastern Bromsgrove. In this location, supermarkets and schools are adjacent to the corridor. The A38 separates the residential areas to the west from the railway station and employment areas to the east, and residential areas to the east from the high school on the west. Notably, in this area the A38 speed

limit is a mix of national speed limit and 40mph, and the design of the road, which is wide with multiple lanes and limited crossing facilities, exacerbates a severance effect. At key locations additional facilities for pedestrians and cyclists along and across the A38 would help to better support movement across and along the A38 in this part of Bromsgrove.

On other parts of the corridor, the A38 has the feel of a semi-urban route. In these areas, identified on Figure 2.2, speed limits are either 30mph or 40mph, footways are provided with some crossing points, and there is typically frontage access only from a single side of the A38 corridor, or sporadic dwellings. Both residential and employment properties are accessed from these sections, which include:

- Hanbury Road to Austin Road junction
- M42 Junction 1 to Barley Mow Lane

In the Hanbury Road to Austin Road area, additional enhancements for pedestrians would help to address the severance effect of the A38.

Other sections of the corridor have a more urban character, with speed limits at 30mph or 40mph, and footways and pedestrian crossings provided. This reflects that there are frontage accesses on both sides of the A38 corridor:

- Worcester Road/B4094 Roundabout to Hanbury Road (Stoke Heath)
- Birmingham Road to M42 Junction 1 (Lickey End)
- Barley Mow Lane to Birmingham Road (Catshill)

In these areas the A38 has a role to play in place making and there is a need to better balance the strategic needs of the corridor with the local function/urban nature. It needs to be ensured that key sections of the route, in particular the junctions, have sufficient capacity whilst also providing high quality facilities for pedestrians and cyclists within the land available.

Overall, it is important to recognise that the character of the A38 is varied, reflecting the way the corridor is used, the way it is designed and the nature of adjoining land users. The future strategy for enhancing the corridor needs to respond to this context.

2.2.3 Car dependency

Overall, Bromsgrove has a high level of car dependency. The 2011 census data shows:

- 51% of households have access to at least two vehicles. This is particularly high compared to the overall figures for West Midland and England (34%).
- Overall levels of reliance upon the car for travel to work are higher than elsewhere in the West Midlands and across England, with 78% of journeys to work made by car as driver or passenger (compared to 71% across the West Midlands and 62% nationally). 40% of work trips are over 10 km in length.
- A high proportion of people in Bromsgrove travel outside of the area to work, notably with 27% of work trips being to Birmingham. People in Bromsgrove travel further to work than those in the West Midlands as a whole, or nationally.

This pattern of car dependency is important context for the A38 corridor enhancements, which seek to improve the strategic and local highway network to better cater for car trips, whilst also providing significantly improved facilities for pedestrians and cyclists across and along the A38 encourage better take up of sustainable modes.

2.3 Challenges affecting the A38 corridor and problem identification

The A38 MRN scheme aims to address both existing and future problems. The identification of problems has been based on those identified in existing and evolving policy, as well as modelling and other data sources.

The Worcestershire County Council Local Transport Plan 4 (LTP4) identified that the main challenges for North East Worcestershire, including the Bromsgrove area, are:

- To relieve congestion
- To enhance transport network reliability and resilience
- To enable and promote growth
- To tackle air quality issues
- To improve all aspects of road safety.

In addition, the policy and vision of Worcestershire County Council for Bromsgrove recognises additional challenges in terms of addressing barriers to walking and cycling.

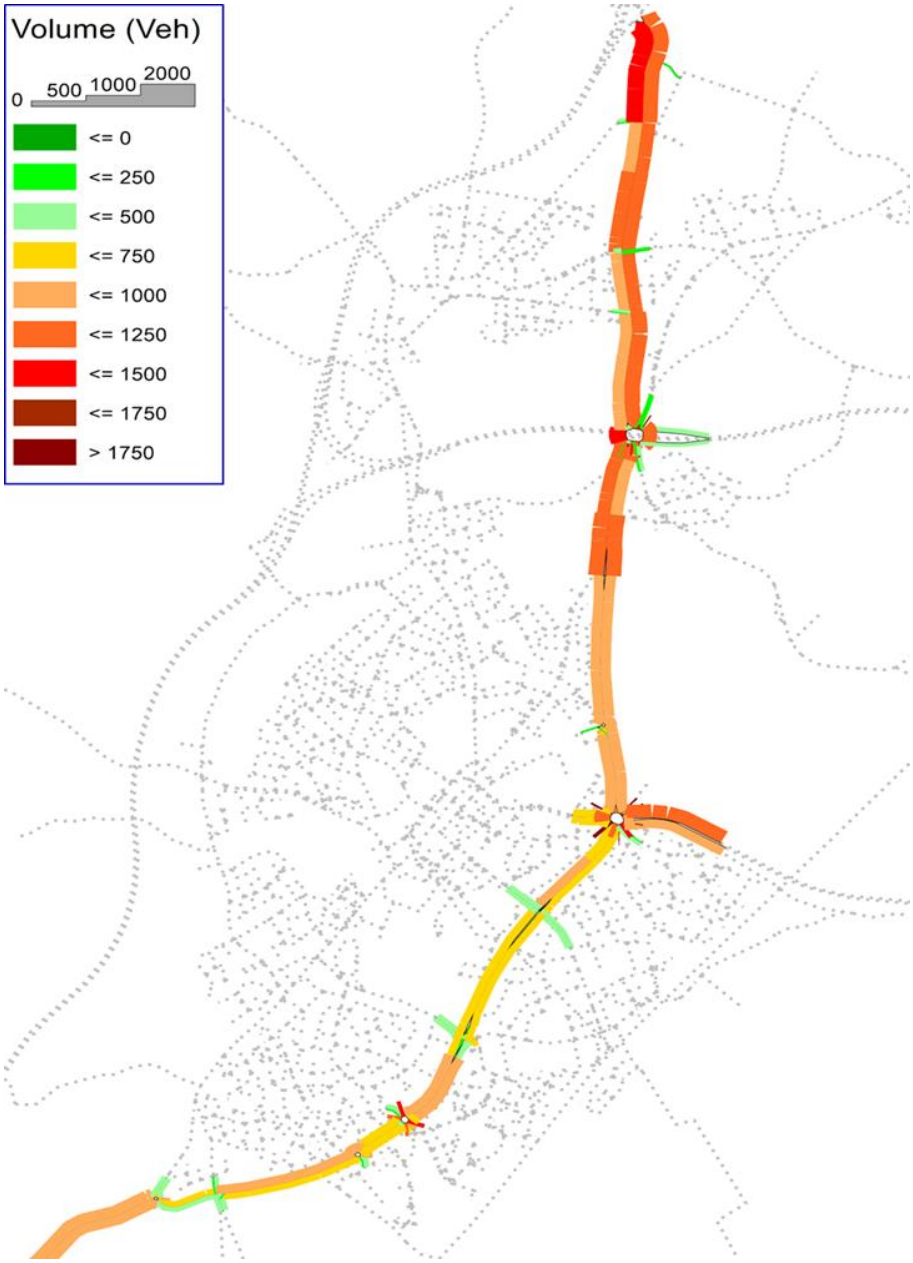
The following section considers the specific challenges affecting the A38 corridor at Bromsgrove in the context of the above. It identifies specific problems that require attention in respect of congestion, reliability, enabling growth and catering for pedestrians and cyclists. Issues around air quality and safety are noted as further important considerations.

More detail on each of the problems and considerations is included in the OAR.

2.3.1 Congestion

A significant volume of traffic uses the A38, as shown in Figure 2.3.

Figure 2.3 – Modelled baseline traffic volume – AM peak



Whilst the traffic volumes on the corridor are high, these are generally within the design flow criteria for a route of this type. However, the corridor currently experiences significant weekday morning and evening peak congestion due to issues associated with the junctions. This results in delay that in turn results in unreliable journey times. Ultimately, this congestion hinders local movements within Bromsgrove and access to the Strategic Road Network, specifically to the M5 and the M42.

Analysis of current ATC demand data, manual queue survey data and tracked vehicle journey time data (taken from June 2017 surveys) shows that:

- Peak hour link flows on the A38 corridor are typically more than 20%-40% higher than the inter-peak.
- Delays are experienced at many junctions along the A38, including at the junctions with: Hanbury Road, Charford Road, New Road, Braces Lane, and M5 J4.
- Journey time is impacted by delays, which are generally more pronounced in the AM/PM peaks toward the northern end of the A38 corridor, north of the Buntsford Drive roundabout. For southbound movements journeys in both the AM and PM peak periods take around 5 minutes longer than during the interpeak. In the northbound direction this difference is more pronounced, particularly in the PM peak when journeys take around 6 minutes longer than in the interpeak.

These factors all indicate that the high demand is exceeding capacity, which is resulting in high levels of congestion.

The VISUM modelling work undertaken to appraise the scheme (explained further in the economic case) provides information about journey times in the future year (without the scheme). This is summarised in Table 2.1. The modelling shows that:

- In 2040 AM peak in the northbound direction journey time increases circa 7 minutes compared to the 2017 base.
- In the 2040 AM peak in the southbound direction, journey time increases by over 5 minutes compared to the base situation.
- In the 2040 PM peak increases are smaller, but in the southbound direction increases of 1.5 minutes are expected in the southbound direction.

Table 2.1 – Journey Time Information from VISUM modelling (Base plus Do Minimum Scenario)

Peak / Direction	2017 Base	2025 DM	2040 DM
AM Northbound	21 mins 52 secs	23 mins 6 secs	28 mins 44 secs
AM Southbound	22 mins 22 secs	24 mins 3 secs	27 mins 44 secs
Inter Peak Northbound	19 mins 12 secs	19 mins 17 secs	19 mins 53 secs
Inter Peak Southbound	19 mins 10 secs	20 mins 15 secs	21 mins 19 secs
PM Northbound	23 mins 23 secs	22 mins 19 secs	23 mins 25 secs
PM Southbound	23 mins 52 secs	23 mins 33 secs	25 mins 26 secs

Problem: Congestion and delay at junctions affect the strategic role of the A38, both delaying traffic that is trying to reach the SRN or using the corridor as a diversionary route, as well as hindering local traffic trying to move around Bromsgrove. Congestion also affects the wider economy restricting labour markets and affecting employees' ability to access potential employment.

2.3.2 Reliability and resilience

Journey time data from surveys undertaken in June 2017 show that for journeys along the A38 corridor, from M5 Junction 4 to M5 Junction 5, there is considerable variation in journey times. It is notable that AM journey times ranged from 16 minutes to 33.5 minutes in the southbound direction, whereas the range was much tighter in the inter-peak period.

Current levels of congestion and poor journey time reliability mean that the A38 is close to capacity, so it is unlikely that the A38 is resilient in the case of an incident.

Additionally, the A38 is the designated motorway diversion route for strategic traffic in the case of blockage on the M5. The same issues of congestion and reliability indicate that the A38 does not provide high levels of resilience for the SRN.

Further detailed evidence of the reliability related problems and issues is presented in the OAR.

Problem: Unreliable journey times impact on the role of the corridor as a strategic link for accessing the SRN, urban areas and key employment areas south of Birmingham. Local trips are also more likely to use local roads rather than the A38 Eastern Bypass if journey times are more unreliable, leading to an increase of traffic using less appropriate routes. As with congestion, these issues also affect labour markets.

2.3.3 Enabling and promoting growth

Pressure on the A38 corridor will increase in the future due to the development targets for both housing and employment growth set out in Local Plans.

In terms of planned development, the following is provided for wider context (information on the specific development assumptions made in the traffic modelling is detailed separately in Appendix B.3 - A38 Bromsgrove Traffic Forecasting Technical Note).

- The Bromsgrove District Plan (adopted in 2017) includes major residential development sites around the edge of Bromsgrove. Smaller residential allocations are also found in surrounding areas. In total the Local Plan identifies a need for 7,000 dwellings and 28 Hectares of employment land in the period 2011-2030. Of these, 2,300 homes are still to be identified following a Green Belt review which will inform a review of the District Plan (currently underway). The plan review will also identify development allocations for growth targets beyond 2030 and is currently examining various scenarios which consider up to an additional 10,200 dwellings over the period 2018 to 2046 (where 2,500 of these are already allocated in the current Plan and will count towards the new target).
- Within close proximity of the A38 corridor area there are significant cross-boundary allocations within the adopted Local Plan for Redditch. This includes an additional 3,400 dwellings on the border with Redditch but located within Bromsgrove District, to meet Redditch's housing need, as identified in their own Local Plan.

The quantum of proposed development within the adopted plan requires enhancements to transport infrastructure, including the A38, to support the delivery of housing and employment and this is recognised in the Transport section of the Infrastructure Delivery Plans for each District.

The key development sites in the vicinity of the A38 that would potentially benefit from improvements to the network are described in Table 2.2. Whilst no individual development site currently has planning obligations that restrict development in advance of delivery of the A38 schemes, there are strong linkages between this scheme and the delivery of allocations identified in existing Local Plans. Worcestershire County Council and Bromsgrove District Council are currently assessing planning applications for major housing development sites within Bromsgrove and there is the potential for Conditions to be attached to any permission limiting development prior to the implementation of elements of the scheme. Going forward Worcestershire County Council has identified the A38 in its current form is a key constraint to additional future development allocations through the District Plan review process.

Table 2.2 – Key development sites that would potentially benefit from improvements to the A38

Site	Authority	Status
Perryfields Road	Bromsgrove	Outline application submitted April 2016 (awaiting determination). 1,300 dwellings, 200 bed care facility, 5 Hectares of B1 employment space, mixed-use local centre and associated community infrastructure.
Whitford Road	Bromsgrove	Outline application submitted December 2016 (awaiting determination). 490 dwellings Class A1 retail local shop and associated infrastructure.
Brockhill East	Redditch/Bromsgrove	Local Plan allocations for 1625 dwellings, 8.45 Hectares of employment and local centre. The County Council are currently in pre-application discussions with the applicants for the remainder of the scheme which is around 1000 dwellings, the local centre and first school.
Foxlydiate	Bromsgrove/ Redditch	Hybrid application submitted in March 2016 and awaiting determination. 2,800 dwellings, up to 900m^2 local centre, up to 900m^2 health and community facilities, a 3-form-entry first school and associated community infrastructure. A detailed application has been made for the primary access, drainage, landscaping and utilities works.
Webheath	Redditch	Local Plan allocation for 400-600 homes. Of these, 270 dwellings are consented and under construction.
Note that no dependency testing has been undertaken to date. This table is provided to give an overview of the current planning context. At OBC stage further work will be undertaken to evaluate development dependency.		

The planned growth in housing will increase the demand for travel. The future year transport modelling work captures this increased demand.

Problem: Capacity along the A38 corridor will need to be improved if trips generated by key large-scale housing and employment sites are to be accommodated on the network.

2.3.4 Conditions for pedestrians and cyclists

The transport network in Bromsgrove is car dominated (particularly for local trips). The links between key trip attractors such as the railway station and the town centre lack definition, and connections over busy routes, including the A38, are inadequate. This poor connectivity results in low mode share for sustainable modes, which contributes towards local congestion and poor air quality, as well as higher than average car ownership.

The OAR provides a description of existing facilities for crossing. This shows that whilst there are some formal crossings currently provided, away from these points there are limited crossing facilities. In the future the corridor will become harder to cross at due to the increase in traffic flows projected in 2025 and 2040 on the A38 corridor, thus presenting either more deterrence of trips or increasing the chance of collisions with vulnerable users.

WCC was recently successful in securing funds for improvements to walking and cycling infrastructure through the NPIF process, therefore some enhancements are currently being delivered. Further enhancements are required to deliver a more robust, safe, comprehensive and integrated network.

Bromsgrove's new station, opened in 2016, provides enhanced rail services, with four trains per hour to Birmingham. However, access to the station by walking and cycling is currently not well provided for. As such, the predominant mode of travel to the station is by private car, enabled by the large car park provided. Cycle parking is provided at the station, but the walking and cycling routes to the station are not clearly defined and there is a perception of severance caused by the A38. Improved access is important if the station is to fulfil its full potential.

Problem: Poor conditions and severance caused by the A38 deter the use of walking and cycling for local trips and to the railway station. This contributes to congestion and poor air quality, directly impacting on the communities that live along the corridor.

2.4 Other considerations on the A38 corridor

2.4.1 Air quality

Bromsgrove District Council has declared two AQMAs on the A38 corridor/within the scheme boundary for exceedances in nitrogen dioxide:

- Lickey End AQMA – this was declared on 26th July 2001. Residential properties along four roads emanating from M42 Junction 1 (including the A38) are affected. At declaration the NO_2 level was 45.7µg/m^3, but this has now reduced to 30.8µg/m^3.
- Redditch Road AQMA Stoke Heath – this was declared on 17th February 2010. This AQMA covers a stretch of the A38 from Austin Road to the B4094 Worcester Road and includes a number of residential properties. At declaration the NO_2 level was 45.6µg/m^3, but this has now reduced to 33.1µg/m^3.

A third AQMA lies in close proximity to the corridor/scheme boundary at Worcester Road. A fourth AQMA is designated in Bromsgrove district, but this lies outside of the scheme boundary at Worcester Road.

Proposals should be consulted on with Worcestershire Regulatory Services, to ensure the impacts of the proposed works on air quality are fully considered and, where possible, disbenefits to air quality are minimised and benefits are maximised.

Implication: The development of the A38 scheme will need to take account of the AQMA. Works within these areas may require specific assessment or consenting approaches.

2.4.2 Road safety

Over the five-year period March 2014-February 2019 there were 75 collisions along the A38 corridor, 79% of these were slight, 19% were serious and 3% fatal. All the fatal collisions involved pedestrians. Relevant to this scheme:

- 40 collisions took place at junctions within the corridor being considered as part of this bid. Most of these were classed as slight.
- Most collisions occurred at the junction of the A38 with the A448, followed by Charford Road Junction, M42 J1 and New Road Junction. One of the collisions at Charford Road junction and one at the New Road junction resulted in a fatality of a vulnerable road user.

The main causes of collisions have been recorded as poor turn / manoeuvre and failed to look properly. Rear shunts are common at the A448/A38 junction. Further detailed evidence of the road safety related problems and issues is presented in the OAR.

Implication: The safety of the A38 corridor can influence mode choice as well as the resilience and reliability for all trips along the corridor. This impacts on both longer-distance trips as well as local trips within Bromsgrove. Improving the safety of pedestrians on the corridor is important to support increased walking and cycling.

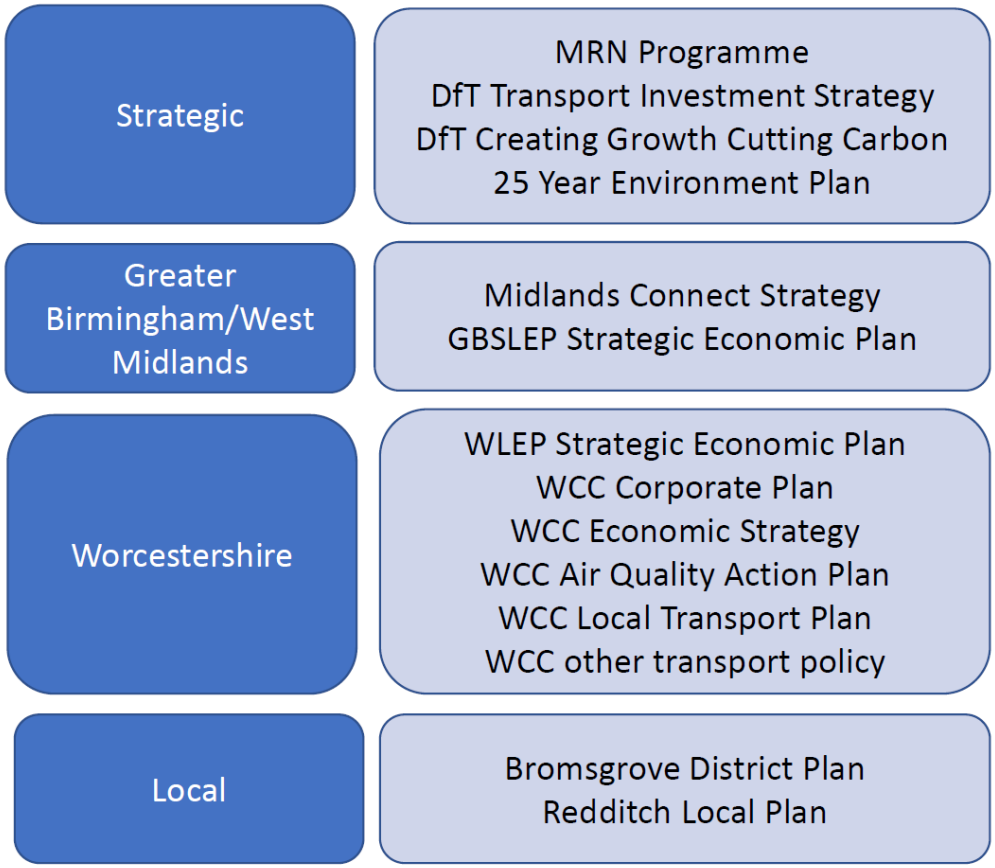
2.5 Business Strategy

2.5.1 Overview of policy context

The A38 scheme aligns closely with the overall aspirations for the LEPs, WCC, Bromsgrove District Council. As the scheme has been under development for some time it is directly referenced in many of the key policy documents including the LTP.

A detailed review of the policy context is included in the Options Assessment Report. This section of the Strategic Case provides an overview out the overall policy context within which this scheme sits. The main policies and strategies considered are shown in Figure 2.4.

Figure 2.4 – Policy context (key documents)



2.5.2 Strategic policy context

Table 2.3 highlights the national level strategic policy context, within which the A38 scheme has been developed. The scheme aligns closely with the objectives of the DfT's MRN programme and wider policy.

Table 2.3 – Strategic policy context

Policy/strategy	Relevance/key ambitions	Contribution of this scheme
DfT MRN programme	Recognises the key roles that routes such as the A38 play in the wider Local Authority network and in linking to the SRN.	Junction improvements will reduce delay on the A38 corridor and improve journey times onto the SRN.
DfT Transport Investment Strategy	A key aim is to create a more reliable, less congested and better-connected transport network.	The scheme will reduce congestion and improve reliability on the SRN.
DfT Creating Growth Cutting Carbon	An objective to "Encourage sustainable local travel and economic growth by making public transport and cycling and walking more attractive and effective, promoting lower carbon transport and tackling local road congestion".	The scheme will reduce congestion on the A38, making public transport more reliable and improving the attractiveness of walking and cycling.
25 Year Environmental Plan	People who live near busy roads are most likely to be exposed to dangerous levels of air pollution, and long-term exposure of this kind reduces life expectancy	The A38 has known air quality issues, so the schemes will be developed in this context and in consultation with Worcestershire Regulatory Services

2.5.3 Greater Birmingham and Midlands policy context

Table 2.4 highlights the Greater Birmingham and Midlands level strategic policy context and highlights the key importance within the region on promoting growth and overcoming barriers to growth. Hence, whilst the A38 scheme falls within Worcestershire it is clear that the scheme has a regional significance.

Table 2.4 – Greater Birmingham/Midlands policy context

Policy/strategy	Relevance/key ambitions	Contribution of this scheme
Midlands Connect	The vision is for a stronger economy and a Midlands Engine which powers the UK. It focusses on investment that overcomes barriers to growth. The Midlands Connect strategy identifies the A38 as part of the MRN within the region.	The A38 scheme will help to support growth by improving a key route through the Midlands and supports access to the SRN and international gateways, including Birmingham Airport.
GBSLEP SEP	Sets out the importance of providing appropriate infrastructure improvements to support proposed development.	Improvements to the A38 corridor will make journeys onto the SRN, and into Birmingham, more reliable.
West Midlands Local Industrial Strategy	Recognises that infrastructure is one of the five foundations of productivity and also outlines the following ambition: "setting out plans to develop inclusive growth corridors. This will ensure infrastructure is integrated with other programmes locally to maximise impact on employment and skills, high quality housing and development viability and improved public green space and air quality".	The scheme will help to connect employment and skills and support the support the wider industrial strategy for the region.

2.5.4 Worcestershire policy context

Table 2.5 summarises the key policy drivers across Worcestershire ambition and strategy. This shows that improvements to the A38 are a clear priority for Worcestershire and that the scheme is closely aligned with the overall business strategy of both the LEP and WCC.

Table 2.5 – Worcestershire policy context

Policy/strategy	Relevance/key ambitions	Contribution of this scheme
WLEP SEP	Additional investment in Worcestershire's transport infrastructure and services is essential to provide businesses with improved access to markets and employees and to encourage economic growth.	By enhancing the A38 corridor, the scheme will help to support the wider development aspirations of WLEP and the local Councils.
WCC Corporate Plan	'Open for business' is the key priority. Continued investment in transport infrastructure is noted as essential and the Plan states that 'Transport infrastructure investment will be targeted to unlock the potential of key employment and housing development site across the county'.	The A38 scheme improve journey time reliability on the corridor. Improvements will support development and trips onto the SRN.
WCC Economic Strategy	Sets out the importance of 'Supporting the sustainable development of the county through infrastructure development, especially transport'.	Improvements to the A38 will improve journey time reliability and reduce congestion, supporting journeys to work and providing greater opportunities to use sustainable modes.
WCC Air Quality Action Plan	The AQAP sets out actions that will be implemented to improve air quality and work towards meeting objectives	The scheme will be developed in this context and in consultation with Worcestershire Regulatory Services

Policy/strategy	Relevance/key ambitions	Contribution of this scheme
WCC LTP4	Identifies key issues in north Worcestershire and the Bromsgrove area in relation to congestion and the need to ensure infrastructure can support development. Identifies the A38 as a key corridor requiring improvements. Includes Strategic Active Travel Corridor Schemes, including 8 improvement schemes in Bromsgrove and several on the A38 itself. The LTP4 also notes the Bromsgrove longer term strategy will include a comprehensive active travel (walking and cycling) network.	This scheme will address the priorities of the adopted LTP. The refined scheme for the A38 corridor includes targeted improvements for pedestrians and cyclist and supports the development of Active Travel Corridors on and adjacent to the A38.
Other transport policy	Rail Investment Strategy – a Bromsgrove and Worcestershire Parkway to Bristol service would support the significant committed housing growth in the District and any further growth required under the Greater Birmingham Housing Market Area considerations. It would utilise the new capacity and focus that the re-located Bromsgrove Station offers. NPIF - WCC was successful in securing NPIF funding to investigate and identify improvements to nine cycle routes in Bromsgrove. 3 of these cross the A38. Following this success WCC has been actively identifying further opportunities for enhancements to walking and cycling infrastructure including adjacent to and across the A38.	Removing the barrier/segregation caused by the A38 would increase the attractiveness of the railway station and using more sustainable modes to travel around the town. Improved connectivity to and from the railway station, combined with improved services, will support access to the planned HS2 stations in Birmingham.

2.5.5 Local policy context

Table 2.6 summarises the local level District Council policy context. This shows that improvements to the A38 are critical to support ambitious levels of development locally.

Table 2.6 – Worcestershire policy context

Policy/strategy	Relevance/key ambitions	Contribution of this scheme
Bromsgrove District Plan	The adopted Bromsgrove District Plan includes major residential development sites around the edge of Bromsgrove. Smaller residential allocations are also found in Hagley, Catshill. Alvechurch,Barnt Green and Wythall. Within close proximity of the A38 corridor area there are significant cross-boundary allocations. The Local Plan supports sustainable transport infrastructure improvements to provide a better walking and cycling experience in and around Bromsgrove's urban area.	In Worcestershire County Council's response to the ongoing Bromsgrove District Plan review Issues and Options consultation, they noted that whatever timescale or housing number is the ability of the road network in Bromsgrove to accommodate further growth is severely constrained. This scheme will deliver the capacity required to support the development envisaged across Bromsgrove District and will also support the important cross- border sites.
Redditch Local Plan	The Redditch Local Plan allocates cross boundary sites within Bromsgrove district, located close to the A448 corridor, which in turn connects to the A38 at Bromsgrove.	Improvements to the A38 corridor will support the housing growth, as it is close to the A448 corridor, which in turn connects to the A38 at Bromsgrove and provides for southbound access to the M5 corridor in addition to the M42 junction.
Bromsgrove Economic Priorities	Bromsgrove District Council has adopted a number of strategic priorities that will help to deliver economic growth within the District. One of the key priorities is identified as follows: Improve connectivity within Bromsgrove (Digital and Transport)	Clearly, improvements to journey time and reliability is a key issue for businesses in Bromsgrove and the proposed scheme will help to improve this for the good of the local business community.

2.6 Overarching approach for Bromsgrove and the A38 corridor

The overarching approach currently being taken to transport in Bromsgrove by WCC, developed in response to current and predicted challenges and reflected in local level planning and transport policies and strategies, is to enhance the A38 corridor as a key priority. Policy recognises the critical importance of improving the A38 and this is reflected in the LTP, which prioritises a scheme that will improve junctions, increase capacity and reduce queues and delays.

However, WCCs wider approach to transport in Bromsgrove also recognises the importance of other improvements to the town's provision and network. The vision for enhancement of the A38 is supported in the ambitions set out in policy and the actions currently being taken by WCC, by a desire to improve:

- Public transport connectivity –To further promote the use of the station and rail services, there is an ambition to improve walking and cycle routes, including to the railway station.
- Cycle and walking infrastructure – it is recognised that the A38 acts as a barrier/causes severance for walking and cycling movements within Bromsgrove and the volume of traffic in conjunction with a lack of infrastructure makes walking and cycling unattractive. WCC is continuing to build on walking and cycling improvements started through NPIF, developing a targeted list of schemes and promoting active travel campaigns as identified in the LTP4. Improved routes across and adjacent to the A38 are an important part of this wider ambition.
- Local road network (LRN) – improvements to the LRN are required to accommodate planned housing and employment growth in Bromsgrove. These works will be delivered by developers. However, it is recognised that the LRN will only operate efficiently if the delays on the A38 are resolved.

2.7 Impact of not changing

Without the A38 corridor scheme, the problems and issues outlined in Section 2.3 will continue and, in the longer-term, be exacerbated. In summary, the impact of not changing would be that:

- Existing congestion at junctions will continue to worsen leading to increased journey time and increased cost to the economy, particularly in the AM peak period. The VISUM traffic modelling shows that in 2040, in the do-minimum scenario, end-to-end journey times on the A38 would be approximately 29 minutes northbound (compared to 22 minutes in the 2017 base) and 28 minutes southbound (compared to 22 minutes in the 2017 base) in the AM peak.
- The ability to accommodate future housing allocations or consent additional development will be restricted, due to limited capacity on the network. The traffic modelling shows that in 2040, in the do-minimum scenario, junction capacity is exceeded at multiple locations on the corridor including
- A38 / Hanbury Road
- A38 / Buntsford Drive to South of A38 / Charford Road
- A38 / Charford Road
- A38 / New Road
- A38 / A448
- A38 / Birmingham Road
- A38 / Golden Cross Lane / Braces Lane
- A38 / School Lane
- The ability to encourage mode shift to walking and cycling will be minimal due to continued actual and perceived severance caused by the A38.

Ultimately, not delivering significant enhancements to the A38 corridor will mean the objectives of key policies set out by the LEPs in their SEPs, by WCC in the LTP4 and the District Council's in the Local Plans, will not be realised. Table 2.7 provides further detail.

Table 2.7 – Extent to which problems are likely to threaten achievement of policy objectives

Problem/issue	How this threatens key local policy, strategy or priorities
Congestion	GBSLEP SEP – Aims to deliver economic growth across the Bromsgrove Area (which forms part of the Enterprise Belt). Continued congestion will discourage investment and development and will prevent residents from accessing employment opportunities. WLEP SEP – Recognises Bromsgove as an important centre for local growth and employment. If pinch points remain on the A38 this will hinder economic growth and the overall potential of Worcestershire will not be realised.
Reliability and resilience	LTP4 – Aims to support Worcestershire's economy through delivery of a reliable and efficient transport network. Currently the A38 demonstrates poor reliability and without intervention this is contrary to the aims of the LTP. WCC Corporate Plan – Reducing journey times is a key objective. Journey times on the A38 currently demonstrate considerable variability.
Enabling and promoting growth constrained by future congestion	Local plans – Recognise infrastructure improvements are required to support the growth aspirations outlined in adopted plans.
Pedestrians and cyclists	LTP4 – Aims to encourage walking and cycling particularly through the promotion of Active Travel Corridors. Without intervention the A38 will remain hostile to non-motorised users and will continue to have a severance effect.

2.8 Objectives

Table 2.8 shows the scheme objectives. Initial objectives were agreed by the Project Board in the initial stages of development of the A38 corridor scheme in 2015/6 and an additional objective has since been added to better reflect that the LTP and Local Plans also seek to improve conditions for pedestrians and cyclists.

Table 2.8 – A38 scheme objectives

A38 objectives	Rationale
Reduce congestion and transport costs	The A38 corridor is currently congested. Limited capacity at key junctions results in queuing, which contributes to delay, air quality issues and a deteriorating environment for the communities and businesses along the route. Reducing congestion on the A38 will help to support economic growth by better linking Bromsgrove with major employment areas across the West Midlands. This objective aligns with the MRN objectives to ease congestion and provide upgrades on important national or local routes and support the SRN.
Maximise the efficiency of the road network	The A38 performs multiple functions, serving as a key part of the Major Road Network, providing a connection to the motorway and SRN, as well as a bypass and local access route. For the route to function in its role as a part of the Major Road Network is important that journeys along the A38 and onto the SRN are seamless, with reliable journey times and without delay. This objective aligns with the MRN objectives to ease congestion and provide upgrades on important national or local routes and support the SRN.
Increased journey time reliability	Journey time reliability on the A38 corridor is currently variable, with journeys in the peak periods taking markedly longer than during the inter-peak and demonstrating considerable variance. Improving journey time is important to ensure that journeys along the A38 and onto the SRN are reliable and to ensure that the A38 is appropriately used by local traffic (and that traffic does not need to divert onto other less appropriate routes to avoid pinch points). This objective aligns with the MRN objectives to ease congestion and provide upgrades on important national or local routes and support the SRN.
Support the delivery of housing and employment growth as outlined in the Bromsgrove District Plan and the Redditch Local Plan	The network around Bromsgrove, including the A38, is currently constrained and significant improvements are required to support future development. This objective aligns with the MRN objectives to unlock economic growth and enable the delivery of new housing developments.

A38 objectives	Rationale
Improve connectivity for pedestrians and cyclists on and across the A38 corridor, including to the rail station	This is a new objective added since the development of the initial scheme in 2015/16. This objective is consistent with the overall approach to transport in Bromsgrove currently being pursued by WCC. This has four broad strands, improving the A38, improving the local road network, improving facilities for pedestrians and cyclists and improving access to public transport (including maximising the role of the new rail station). Improving east west connectivity across the A38 corridor is vital to address the severance effect currently experienced. In addition, new and improved north south connections for pedestrians and cyclists are important to link residential and employment areas. Overall connections need to support the current work which is ongoing to improve routes via the NPIF project. This objective aligns with the MRN objective to support all road users.

The objectives reflect the following key problems and challenges identified.

- Congestion – Delay is experienced at key junctions currently and this will increase in the future. Overall congestion affects the strategic role of the A38 delaying traffic that is trying to reach the SRN or using the corridor as a diversionary route, as well as hindering local traffic. Congestion also affects the wider economy.
- Reliability and resilience – There are considerable variations in journey times. Unreliable journey times impact on the role of the corridor as a strategic link for accessing the SRN, urban areas and key employment areas south of Birmingham and impact route choice for local trips.
- Enabling future housing and employment growth. Pressure on the A38 corridor will increase in the future due to the Local Plan development targets for both housing and employment growth. Capacity along the A38 corridor will need to be improved in order to accommodate planned and future growth.
- Conditions for pedestrians and cyclists - Poor conditions and severance caused by the A38 deter the use of walking and cycling for local trips and to the railway station. This contributes to congestion and poor air quality, directly impacting on the communities that live along the corridor.

Table 2.9 shows how the objectives address/relate to the problems identified on the A38 corridor.

Table 2.9 – A38 objectives and problems

	Objectives of the A38 Bromsgrove Route Enhancement Programme				
Problems identified on the A38 corridor	Support the delivery of housing and employment growth	Reduce congestion and transport costs	Maximise the efficiency of the road network	Increased journey time reliability	Improve conditions for pedestrians and cyclists
Congestion		✓	✓	✓	
Reliability and resilience		✓	✓	✓	
Enabling and promoting growth	✓				
Pedestrians and cyclists					✓

The A38 objectives align closely with the MRN objectives, as shown in Table 2.10.

Table 2.10 – A38 objectives and MRN objectives

	MRN objectives				
A38 Objectives	Reducing congestion	Support economic growth and rebalancing	Support housing delivery	Supporting all road users	Supporting the SRN
Reduce congestion and transport costs	✓				✓
Maximise the efficiency of the road network	✓			✓	✓
Increased journey time reliability	✓			✓	✓
Support the delivery of housing and employment growth		✓	✓		
Improve conditions for pedestrians and cyclists				✓	
Summary	Junction improvements will reduce congestion and delay, improving journey times and reliability	Enable the A38 corridor to function effectively for businesses and workers	Junction improvements will enable the network to better cater for planned development	Walking and cycling schemes address severance issues by providing better facilities along and across the A38	Providing efficient and reliable access to M5 via J4 and M42 via J1

2.9 Measures for success

Table 2.11 sets out how success will be measured for the A38 corridor scheme.

Table 2.11 – Measures for success

Objective	What success will look like?	How will it be measured?
Support the delivery of housing and employment growth.	Local Plan development allocations and aspirations are realised.	Data from the planning authority on progress towards development allocations
Reduce congestion and transport costs.	Reduced queue lengths and delays on the A38.	Junction queue length surveys
Maximise the efficiency of the road network.	Improved journey times on the A38 corridor, from the LRN onto the A38 corridor and from the A38 corridor onto the SRN.	Traffic flow data measured via Automatic Traffic Counters (ATC) Journey time surveys
Increased journey time reliability.	Less variance in journey times on the A38.	Journey time surveys
Improve conditions for pedestrians and cyclists	More users walking and cycling on and across the A38 and on adjacent routes. Existing users benefit from better facilities. More users walking and cycling to the new rail station.	Use/stakeholder feedback Counts of non-motorised users

2.10 Scope

The scheme for which funding is sought via this MRN bid comprises highway and sustainable mode schemes. These are detailed in the following sections. Scheme drawings are included as Appendix A.4. These highlight concept designs which will be evolved through the OBC stage.

2.10.1 Highway schemes

Eight highway schemes form the A38 corridor scheme. The scheme locations and descriptions are detailed in Table 2.12 and on Figure 2.5.

Figure 2.5 – Highway schemes

Scheme	Scheme location
A	A38 / Hanbury Road
B	A38 / Buntsford Drive to south of A38 / Charford Road
C	A38 / Stoke Road / Charford Road
D	A38 / New Road
E	A38 / A448
F	A38 / Birmingham Road
G	A38 / Golden Cross Lane / Braces Lane
H	A38 / Birmingham Road to M42 J1

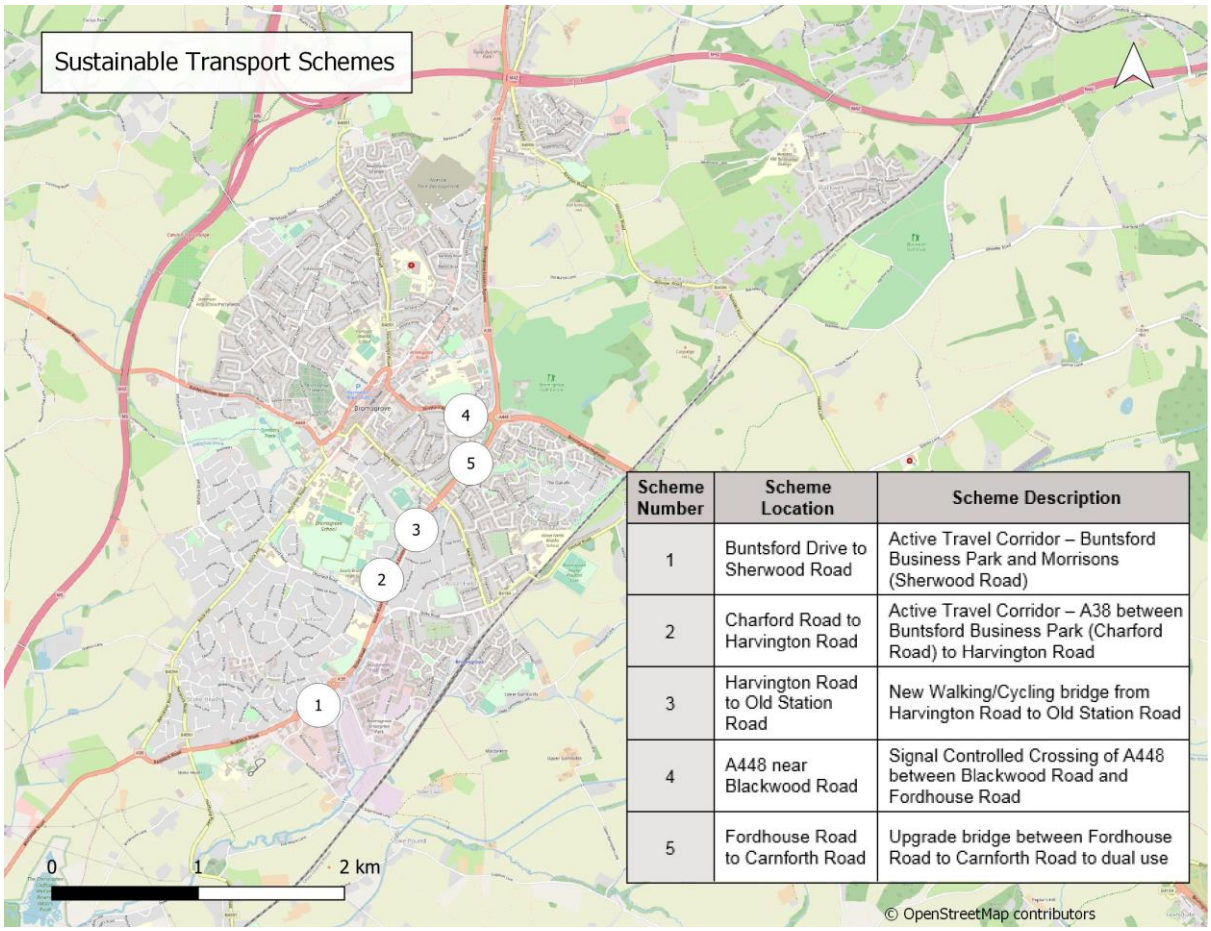
Table 2.12 – Highway schemes

Scheme number	Scheme location	Description of proposed scheme
A	A38 / Hanbury Road	Provide a longer left turn lane on the Eastern A38 approach. Optimisation of signal timings to provide network control.
B	A38 / Buntsford Drive to south of A38 / Charford Road	Provision of two northbound lanes over approximately 100m on approach to Buntsford Drive roundabout, continuing to A38 / Charford Lane approach. Consideration to remove guard railing in line with Worcestershire LTP4 Policy. Reconfigured lane markings on approaches and circulatory at A38 / Sherwood Road / Austin Road junction. Enhanced North-South footway on northern side of A38 between Austin Road and Charford Road.
C	A38 / Stoke Road / Charford Road	Widening of the existing 60m two lane approach to enable vehicles to be able to pass within available stop line width, realignment of approach from Charford Road. Widening of Culvert on Stoke Road to facilitate third lane over structure and realign ahead and right turn movement lane to improve access into the left turn lane to the A38 Southbound. Relocate existing left turn pedestrian crossing on left turn from Stoke Road to A38 South. Enhance pedestrian crossing widths across A38 corridor, to enable provision as toucan crossings. Provision of additional footway from Charford Road to tie in with existing crossing location, and link better with Harvington Road (Scheme 1) sustainable scheme connection. Improve footway connection between A38 North crossing and Warwick Avenue. Optimisation of signal timings to provide network control. Improvements to signal timings, and provision of on crossing detectors.
D	A38 / New Road	Provision of additional southbound traffic lane on A38. Realign Northbound A38 corridor to accommodate changes in southbound direction. Provision of wider crossing widths over A38 corridor to support at grade crossing in the future. (Element may need to be reconsidered at OBC stage, if the bridge located to the south is provided – Sustainable Scheme 3). Optimisation of signal timings to provide network control.
E	A38 / A448	Provision of two additional flare lanes (30 and 85m) on A38 north approach. Provision of a 61m flare lane on A448 East approach. Provision of longer flare lane (100m) on A38 South approach. Signalisation of A38 and A448 approaches with MOVA controller. Revisions to circulatory road markings and approach lane markings with supporting infrastructure.
F	A38 / Birmingham Road	Provision of upgraded signal controllers, and on crossing detection. Optimisation of signal timings to provide network control.
G	A38 / Golden Cross Lane / Braces Lane	Provision of two northbound and two southbound ahead movement lanes on A38 corridor. To provide circa 150m on northbound approach and 125m on southbound approach. Reconfiguration of lane markings southbound to facilitate lane 2 ahead movements. Widening of southbound exit to accommodate two southbound approach lanes. Relocation of A38 NB bus stop into B4185 Golden Cross Lane, to remove from unsafe location within existing merge. Relocation of existing bus stop lay-by on A38 Southbound. Consideration to be given to removing lay-by for bus stop at this location at next design stage. Provision of pedestrian crossing facility on A38 south arm. Installation of on crossing detectors on all pedestrian crossing elements of signal junction. Increased pedestrian stagger on A38 North approach, to enable a larger pedestrian refuge waiting area. Optimisation of signal timings to provide network control.
H	A38/ Birmingham Road to M42 Junction 1	Traffic Management Scheme - Improvements along link, to include road marking alterations and revisions to school lane junction.

2.10.2 Sustainable schemes

The following five schemes for sustainable modes make up part of the A38 corridor scheme. The scheme locations and descriptions are detailed in Table 2.13 and on Figure 2.6.

Figure 2.6 – Sustainable schemes



Scheme Number	Scheme Location	Scheme Description
1	Buntsford Drive to Sherwood Road	Active Travel Corridor – Buntsford Business Park and Morrisons (Sherwood Road)
2	Charford Road to Harvington Road	Active Travel Corridor – A38 between Buntsford Business Park (Charford Road) to Harvington Road
3	Harvington Road to Old Station Road	New Walking/Cycling bridge from Harvington Road to Old Station Road
4	A448 near Blackwood Road	Signal Controlled Crossing of A448 between Blackwood Road and Fordhouse Road
5	Fordhouse Road to Carnforth Road	Upgrade bridge between Fordhouse Road to Carnforth Road to dual use

Table 2.13 – Sustainable schemes

Scheme Number	Scheme Location	Scheme Description
1	Buntsford Drive to Sherwood Road	Active Travel Corridor – Buntsford Business Park and Morrisons (Sherwood Road) Provide 3m wide shared footway/cycleway adjacent to A38 between Buntsford Drive and Sherwood Road. Provide transition from carriageway to cycleway from Buntsford Drive. Provide improved splitter island at Sherwood Road junction. Provide 3m wide footway/cycleway between A38 Roundabout and Sherwood Road.
2	Charford Road to Harvington Road	Active Travel Corridor – A38 between Buntsford Business Park (Charford Road) to Harvington Road Provide 4m wide shared footway/cycleway along existing footpath. Provide cycle transition facility to Harvington Road. Review/Upgrade transition from pathway to Charford Road crossing.
3	Harvington Road to Old Station Road	New Walking/Cycling bridge from Harvington Road to Old Station Road Provide new walking/cycling bridge connection and associated access ramps between Old Station Road and Harvington Road. Stop up existing at grade crossing point over A38.
4	A448 near Blackwood Road	Signal Controlled Crossing of A448 between Blackwood Road and Fordhouse Road Provision of toucan crossing of A448 Amendments on approach to link crossing to adjacent north south routes.
5	Fordhouse Road to Carnforth Road	Upgrade bridge between Fordhouse Road to Carnforth Road to dual use Provision of new larger bridge structure to accommodate cyclist provision.
Note that Active Travel Corridors are defined and identified in the LTP4.		

2.11 Constraints and inter-dependencies

There are a number of constraints that have defined the parameters within which the scheme has been developed. In general terms, the effects of constraints can be either eliminated or mitigated through the design process. The aim of design development (which will continue through the next phase of the project) it to establish how the scheme objectives can be achieved in the most economically advantageous way within the constraints.

Table 2.14 presents a summary of the key constraints. This summary is supported by a detailed review of environmental constraints presented as Appendix A.2.

Table 2.14 – Constraints

Constraint	Issue	Design response
Availability of funding	Scale of works required cannot be funded by the public sector.	Early and ongoing engagement with DfT and the LEPs
Planning permission	Planning permission will be required for some elements due to the nature and scale of works required. See management case for further details.	Early liaison with Planning Authority and with Worcestershire Regulatory Services.
AQMA	Parts of the A38 corridor fall within designated AQMAs. This may affect the assessments and consents required for delivery of the proposed works.	Early liaison with Worcestershire Regulatory Services and appropriate stakeholders
Works within the flood plain or in close proximity to water courses	Several schemes interact with the flood plain and watercourses. Consents may be required from the Environment Agency/Lead Local Flood Authority.	Early liaison with the Environment Agency/Lead Local Flood Authority.

Constraint	Issue	Design response
Potential other environmental issues	Other, as yet unknown, environmental issues may affect design and development.	Early mapping of environmental issues and potential constraints.
Land availability	Areas of third-party land may be required to achieve improvements It is assumed at this stage of scheme development that this land can be secured by negotiation. See Management Case for further details.	Early negotiation with landowners.
Highway standard	Design development may require some variation to DMRB standards given site constraints.	Apply for early departure from standard, if required. Early engagement with WCC as highways authority.
Underground services	Works required may interact with utilities.	Undertake utilities searches. Close liaison with utility companies regarding potential diversions and costs.

2.12 Stakeholders

Overall, the scheme has a good level of stakeholder support at a high level. For example, the scheme is well supported by:

- Midlands Connect, who have ranked it in their top ten schemes within the region, through the Regional Evidence Base.
- WLEP and the Worcestershire Local Transport Board (including Councillors), who previously approved an OBC for the corridor and have recently awarded funding for Package 1, Phase 1. A letter of support from WLEP is included in Appendix A.3.
- GBSLEP who have approved previous stages of the Business Case process and recently awarded funding for Package 1, Phase 1.
- Highways England, who have approved funding for Package 1, via their Growth and Housing Fund (GHF).
- WCC Councillors who have been briefed throughout the development of the scheme from an early stage and actively supported the commencement of Package 1 works on site.
- Homes England, who gave their support via the Housing Infrastructure Fund (HIF) process in 2017.
- WCC Councillors, who approved the overall concept of the (previously developed) scheme for the A38 in July 2018 at a meeting of the full Cabinet and supported implementation of Package 1.
- The MP for Bromsgrove who has provided a letter of support included in Appendix A.3.

A communications plan was developed as part of earlier work and has been updated to support this bid. The project team has a good understanding of the various stakeholder audiences for this project.

Further information on key stakeholders and the proposed communication strategy is provided within the Management Case and within the stand-alone Stakeholder Management Plan presented as Appendix E.4.

2.13 Options

As part of the development of this OBC an Options Assessment Report (OAR) has been prepared. This document accompanies the SOBC as Appendix A.1. It describes the work undertaken to appraise and develop the package of measures for which funding is sought through this SOBC.

The OAR highlights the issues and challenges on the corridor and identifies deliverable schemes to address these. In doing so it builds on the scheme development work initially undertaken to support the 2016 WLEP OBC.

The schemes identified for inclusion in this MRN bid, tackle congestion at junctions, as well as problem locations for pedestrians and cyclists. In each case a preferred approach is identified with indicative alignments.

The schemes identified are illustrated in scheme concept plans, contained within Appendix A.4. These have been used as the basis for the scheme costings, included within Appendix D.1. The scheme costings underpin the financial case for this SOBC.

Further option development work will be undertaken at OBC stage.

2.14 Summary

In summary the Strategic Case identifies that:

- The A38 corridor currently experiences congestion and journey time variability. These problems are expected to become considerably worse in the future. If no improvements are delivered journey times are predicted to increase considerably.
- The adopted Local Plans identify development which will place additional pressure on the A38 corridor into the future. The A38 is a key constraint to potential further future development, currently being considered through the Local Plan review process.
- There are significant opportunities to better provide for pedestrians and cyclists along the A38 corridor and to build on the improvements currently being delivered locally.
- Improvements to the A38 corridor have a strong policy context and will help to deliver the aims and ambitions of policy and strategy set out by Bromsgrove District Council, Worcestershire County Council, the Worcestershire LEP and Midlands Connect.
- Options assessment work has identified a series of deliverable schemes which tackle congestion and resilience of the network and also provide enhanced facilities for pedestrians and cyclists. These have been used as basis the scheme costings which underpin the financial case.
- The schemes identified for the corridor have high level support from key stakeholders. Through this bid process, additional consultation and stakeholder engagement is planned.

3. Economic Case

3.1 Introduction

This chapter sets out the Economic Case for the Bromsgrove A38 Route Enhancement Programme (the scheme). The Economic Case for the scheme has been considered in line with the principles set out in WebTAG. The scheme has been presented in a Do Something scenario and compared against a Do Minimum scenario. The details of the scheme included in the Do Something scenario are provided as part of the Strategic Case. This section provides information on:

- Option Appraised
- Transport Modelling
- Economic Assumptions
- Economy impacts
- Environment impacts
- Social impacts
- Economic Tables
- Conclusions - Value for Money statement
- Appraisal Summary Table.

The scheme comprises of eight highway schemes and five sustainable schemes on the A38 corridor, see Section 2.10 for detailed scheme descriptions. The scheme is expected to generate the following economic impacts, which are considered in turn below:

- Reduced congestion, resulting in highway user benefits.
- Enhanced opportunities for walking and cycling activity, resulting in active mode user benefits.
- Improved safety and security for non-motorised users crossing the A38, resulting in a reduced number of collisions and subsequent economic benefits.
- Wider economic benefits relating to:
  - Output change in perfectly competitive markets
  - Move to more/less productive jobs
  - Agglomeration impacts.
- Unlocking potential development opportunities, resulting in land value uplift.

This economic case summarised the case for the scheme. The background technical analysis is included within the Economic Impact Report (Appendix B.5)

3.2 Option appraised

To remedy the existing highway network issues, the proposed programme includes enhancements to a number of key junctions situated along the A38 Corridor in Bromsgrove between M5 Junction 4 to the north and the junction of the A38 Eastern Bypass with the B4094 Worcester Road to the south.

Additionally, Bromsgrove suffers from inadequate walking and cycling infrastructure. Specifically, walking and cycling links between key attractors on either side of the A38, including the new rail station with increasing patronage, an attractive town centre, key employment destinations, residential clusters, public parks and schools are poorly connected. This poor connectivity contributes to a low mode share for sustainable modes and constrains its ability to grow. Mode share is less than the sub-regional (Worcestershire) and national averages. These trends contribute towards the highway congestion issues. Within this context, the proposed programme includes the provision of a suite of active mode infrastructure that aims to reduce severance across the A38 for pedestrian and cyclists.

Full details of the option development work is set out in the Options Assessment Report (Appendix A.1) and summarised in the economic case.

3.3 Transport modelling overview

To meet the requirements of the economic appraisal, the following models have been developed:

- Highway Assignment Model (HAM)
- A Variable Demand Model (VDM).

Transport modelling was undertaken using VISUM version 17.0, which is strategic macroscopic assignment modelling software.

VISUM allows junctions to be modelled in detail including signals, priorities and roundabouts; enabling an estimation of delays experienced along A38 and other junctions in the Area of Detailed Modelling (AoDM). Additionally, this package allows for wide area re-routing impacts to be considered as part of the economic assessment.

For each modelled year, three time periods have been considered. These are:

- Morning peak hour (AM): 08:00 – 09:00
- Interpeak period (IP): 10:00 – 16:00 (average hour)
- Afternoon peak hour (PM): 17:00 – 18:00

3.3.1 Base scenario

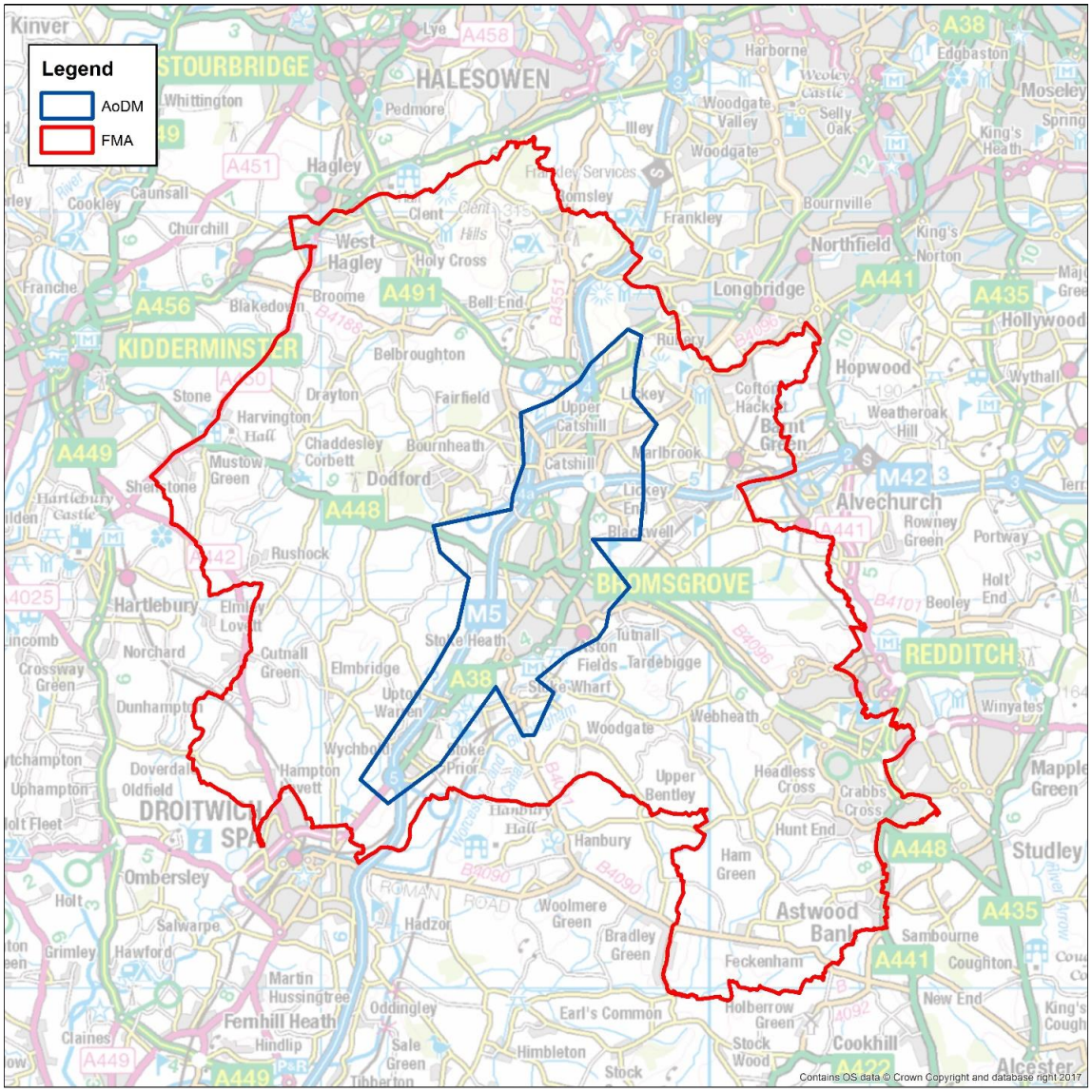
The base year for the transport model is 2017. Traffic data used to calibrate and validate the model was from 2017, and included:

- Junction Turning Counts (JTC)
- Automatic Traffic Counts (ATC)
- Road Side Interviews (RSI)
- Journey Time surveys
- Queue length surveys
- Car park surveys

Full details of data collection can be found in the Traffic Data Collection Report, Appendix B.1.

The study area of the model was defined for the purpose of testing the impacts of improvements schemes on the A38 in Bromsgrove. The AoDM includes the detailed network, such as the smaller residential roads within Bromsgrove. The AoDM covers the urban area of Bromsgrove, Catshill and the north Marlbrook neighbourhood area, and includes the key junctions linking the A38 to the M5. The wider Fully Modelled Area (FMA) includes key routing options from Birmingham, Redditch, Droitwich and Kidderminster. These boundaries are illustrated in Figure 3.1.

Figure 3.1 – Extent of Fully Modelled Area (FMA)



Modelled demand was predominantly based upon Roadside Interview data. The 2011 Census housing and population data was used along with the car park survey data to inform internal trip generation. In addition, Midland Regional Traffic Model (MRTM) was utilised to estimate external movements.

A process of automatic matrix estimation was performed on the prior matrix using the T-Flow Fuzzy module built into the VISUM modelling suite. This module makes minor adjustments to the prior matrix, so that assigned demand matches observed link counts. Matrix estimation was undertaken for three model hours (AM, IP and PM) The base scenario was validated against the Journey Time data along nine routes.

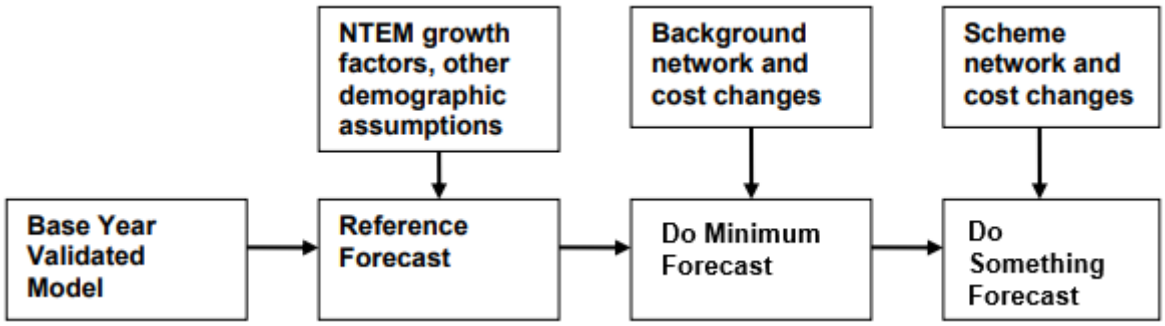
The model has been demonstrated to achieve WebTAG calibration and validation criteria along the A38 and its approaches, as well as across the full model area. It can be concluded that the model robustly reflects observed flows and delays along key routes in the modelled area.

Full details of the base model build process can be found in the Local Model Validation Report (LMVR), see Appendix B.2.

3.3.2 Forecasting

The scheme follows principles set out in the WebTAG Unit M4 Forecasting and Uncertainty as summarised in Figure 3.2 below.

Figure 3.2 – Basic approach to forecasting using a transport model (Source: WebTAG)



The opening year of the scheme is 2025. The design forecast year has been selected to assess the scheme 15 years after anticipated full opening. The Design Manual for Roads and Bridges requires an opening year plus 15 years approach to scheme development. Therefore, the forecast year is set to 2040.

The forecast scenarios which have been modelled and reported are the Do Minimum and Do Something scenarios for 2025 and 2040. The Do Minimum scenario consists of the base network with, committed highway improvement schemes and background demand growth assigned. The demand growth is based on proposed development allocations in the local plan and their uncertainty classification. The Do Something network include all elements of the Do Minimum network and the proposed A38 scheme being appraised. The input reference demand to the Do Minimum and Do Something models are the same.

Fixed demand approaches have the quickest run times as they do not require the demand and assignment models to be run iteratively. However, their use is only valid where it can be demonstrated that changes in cost will not generate a noticeable change in demand (commonly called induced traffic). As such, fixed demand models are inadequate for most transport schemes which are aimed at resolving congestion or relieving overcrowding on public transport.

The A38 transport model includes the demand model functionality to undertake demand responses including trip distribution broadly in line with Department for Transport's (DfT) Transport Analysis Guidance (TAG). Time and cost skims were extracted separately for the highway model user classes: commute, employers business and other trip purposes, LGV and HGV which vary with respect to value of time (VoT) assumptions.

Additional information on VISUM highway model can be found in the Traffic Forecasting Note (Appendix B.3) and the Demand Model Report (Appendix B.4).

3.3.3 Scheme assessment

Highway model

Skimmed distance, time and demand matrices from the VISUM forecast model, were then used as input to the TUBA model for the scheme appraisal.

Collision analysis

Personal Injury Collision data, covering the section of the A38 Corridor in Bromsgrove, was used in analysis. The data provides information on location, date and severity of each collision and covers the five-year period of 2014 to 2019 inclusive.

The data was analysed to understand whether the collision could have been prevented had the proposed scheme been in place. Items such as the collision location and severity, the road and lighting conditions, the manoeuvre that was taking place, and mode of travel were all taken into consideration as part of this analysis.

An important safety benefit will be the improvements associated with sustainable schemes to active travel modes. The analysis in this SOBC focuses on these benefits. The OBC will consider wider accident benefits using a COBALT assessment.

Active travel

Instead of a universal uplift in walking and cycling trips in Bromsgrove, the active mode benefits used are explicitly derived from walking and cycling journeys over the A38 only. This differentiates the current scheme and its impact from that of the NPIF scheme. It has been assumed that there are three main reasons for residents of Bromsgrove to cross the A38:

- Rail passengers travelling to Bromsgrove railway station (from west of the A38)
- Children travelling to school (from east of the A38 to the High Schools located west of the A38)
- Commuters living east of the A38 but working to the west of the A38, and vice versa

The approach to assessing demand for the crossing has involved consideration of the above, both baseline and a forecast level, once the Scheme is implemented.

Further details are provided in Appendix B.7.

Social impact

The social impacts have been assessed with relation to:

- Collisions
- Physical activity
- Security
- Severance
- Journey quality
- Option and non-use values
- Accessibility
- Personal Affordability

The evaluation is based on the relative importance and data availability for the different elements. Wherever possible, analysis has been undertaken to quantify and monetise the impacts, so robust values can be presented in the appraisal.

3.3.4 Traffic forecasting report key outcomes

The key outcomes that inform the economic benefits are changes in northbound and southbound journey times. The results of changes in journey times along A38 in Bromsgrove area are shown in Table 3.1.

Table 3.1. – Comparison of journey times With and Without Scheme

Peak / Direction	2017 Base	2025 DM	2025 DS	2040 DM	2040 DS
AM Northbound	21 mins 52 secs	23 mins 6 secs	21 mins 48 secs	28 mins 44 secs	24 mins 27 secs
AM Southbound	22 mins 22 secs	24 mins 3 secs	22 mins 10 secs	27 mins 44 secs	23 mins 57 secs
Inter Peak Northbound	19 mins 12 secs	19 mins 17 secs	19 mins 18 secs	19 mins 53 secs	19 mins 38 secs
Inter Peak Southbound	19 mins 10 secs	20 mins 15 secs	20 mins 0 secs	21 mins 19 secs	20 mins 59 secs
PM Northbound	23 mins 23 secs	22 mins 19 secs	22 mins 14 secs	23 mins 25 secs	23 mins 18 secs
PM Southbound	23 mins 52 secs	23 mins 33 secs	21 mins 23 secs	25 mins 26 secs	22 mins 18 secs

When disaggregating the outputs of journey time benefits, it can be observed that largest proportion of benefits results from improving travel conditions in AM peak period. It is followed by general improvement of the inter-peak conditions resulting from implementing the scheme. Similarly, highest savings in vehicle operating costs (VOC) are observed during AM peak period.

Additional information can be found in the Traffic Forecasting Technical Note, Appendix B.3.

3.4 Economic assumptions

The main non-project specific economic appraisal parameters and assumptions are drawn from the requisite units of the DfT's appraisal guidance contained in various WebTAG guidance units and the WebTAG databook (May 2019). The relevant discounting parameters and appropriate appraisal period were adopted and used for scheme appraisal in TUBA to assess the highway benefits. Key assumptions made for the economic assessment are as follows.

General assumptions:

- Opening year 2025, preparation and construction profile from 2019-2024'
- Appraisal period = 60 years
- Price base year = 2010
- Current year for discounting = 2019 (*Note: Costs are deflated from 2019 to 2010 using the GDP deflator, then both costs and benefits are discounted to the Present Value Year of 2010*
- Discount rate = 3.5% for 30 years from current year then 3% thereafter

Cost assumptions are as follows:

- The appraisal approach identifies cost items that it is considered will change in real terms with respect to the prevailing inflation rate;
- Optimism bias level for capital costs = 44% applied to costs of Roads, and 66% applied to costs of structures (applied to Schemes 3&5)
- Capital expenditure is assumed to be funded by DfT
- Values of time are drawn from the WebTAG Databook (May 2019)
- Value of time is assumed to grow in line with GDP

3.5 Economic impacts

3.5.1 User benefits

At this stage welfare impacts relating to three forms of user benefits have been formally modelled and assessed. The Scheme is expected to result in a highway user benefit of £195.5m (present value in 2010 prices), primarily relating to journey time savings and reduced vehicle operating costs for

commuters and business users. Detailed economic information is further available in section 3.9 of this report.

3.5.2 Accident benefits

An important safety benefit will be the improvements associated with sustainable schemes to active travel modes. The analysis in this SOBC focuses on these benefits. The OBC will consider wider accident benefits using a COBALT assessment.

It was found that across the 60 years following scheme opening, the sustainable schemes could provide benefits of £1.7m (present value in 2010 prices) through prevention of collisions effecting active modes. This is based on the prevention of one fatal and two slight collisions over a five-year period.

3.5.3 Wider economic impacts

Wider economic impacts have not been quantified or monetised at this stage. More detailed modelling will be prepared for the Outline Business Case which will allow formal analysis of wider economic impacts. At this stage, the following broad qualitative impacts can be estimated:

- Output change in imperfectly competitive markets – typically estimated at 10% of business user benefits.
- Labour supply impacts – by reducing congestion, improving journey times and reducing vehicle operating costs for highway users, the Scheme could reduce travel costs and therefore widen the travel to work area for residents and employees in Bromsgrove. This could have two effects:
  - Allow labour supply to travel further to seek employment that is more commensurate to their skills.
  - Help reduce unemployment and bring economically inactive residents back into the labour market by increasing the number of accessible job opportunities.
- Move to More Productive Jobs – as noted above, accessibility improvements could allow a greater proportion of Bromsgrove's labour supply to travel further for employment, giving rise to a more employment opportunities including potential high value/high productivity jobs.
- Productivity impacts – the accessibility improvements could support agglomeration of key economic activities within Bromsgrove, building on existing strengths in high value industries at Bromsgrove Technology Park, Saxon Business Park and Harris Business Park and supporting the aspiration to further develop nascent high technology and green industries.

3.5.4 Active mode impacts

The total active mode benefits of £8.02m (present value in 2010 prices) are added to other benefits and compared against the present value costs of Bromsgrove A38 MRN Active Modes package to forecast the scheme's benefit cost ratio (BCR).

3.5.5 Dependent development

The potential for the Scheme to unlock 'dependent' development sites has not been quantified or monetised at this stage. That said, it is acknowledged that pressure on the A38 Corridor will increase in the future due to the Local Plan development targets for both housing and employment growth. Policy BDP3 of the Bromsgrove District Plan 2011-2030 (Adopted January 2017) outlines the future housing and employment development targets allocated in Bromsgrove.

Given the position of the various strategic development locations within the planning process (i.e. there is no evidence for explicit planning dependency for any permitted sites) and in the absence of formal dependent development modelling at this stage, the economic benefit associated with dependent development is not quantified or monetised at this stage. Such impacts are recommended for inclusion within the next stage of appraisal following further transport model development.

3.6 Environment impacts

Table 3.2 presents the environment assessment work.

Table 3.2 – Environment Assessment

Indicator	Rating	Reasoning
Noise	Neutral to Slight Adverse	A number of noise important areas along the length of the A38 and sensitive receptors including residential dwellings and schools. Where the scheme will include additional lanes or extension of lanes there is the potential to bring noise closer to sensitive receptors which could result in a slight adverse impact. However, some works including signal changes, active travel corridors and construction of toucan crossings are likely to have a neutral impact.
Air Quality	Slight Adverse	2 AQMAs are designated within the scheme boundary. An additional AQMA is in close proximity and another further away. Detailed air quality assessments and consultation with the relevant statutory body have not been undertaken therefore it is not possible to determine at this stage if the schemes will have a beneficial or adverse impact upon air quality. Sustainable schemes will offer local users safe crossing points which could promote sustainable transport which could have a local beneficial impact. Unlikely that this beneficial impact will be significant enough to have a beneficial impact upon the AQMA therefore in the absence of detailed air quality assessment and the location of the AQMA's within the scheme boundaries, it is likely that the scheme will have a slight adverse impact on the AQMA's during operation.
Landscape	Neutral to Slight Adverse	The scheme is likely to require removal of vegetation which is likely to result in views to the scheme at certain locations. Other areas of the scheme will not require any vegetation removal and works are minor therefore there will likely be a neutral impact. In areas where removal of vegetation is required with mitigation in place there is likely to be a neutral to slight adverse impact.
Townscape	Neutral	The proposed schemes will result in no changes to Traveller Views as most of both Highway and Active Mode schemes are already in existence and are related predominantly to changes in junction layout. Therefore, there would likely be no change in a view.
Historic Environment	Neutral	It is unlikely that the scheme would directly impact upon any designated heritage assets as there are no designated heritage impacts within the scheme boundary. The scheme has the potential to impact upon unknown archaeological and further work is required but with committed mitigation in place there is likely a neutral impact.
Biodiversity	Neutral	Ecological surveys have not been undertaken but the schemes do not lie within ecological designations and it is unlikely that the scheme has direct linkages to any ecological designations. The scheme will require the removal of vegetation which will likely impact upon habitats and species, but direct habitat losses can be compensated by replacement habitat creation within the scheme. Potential indirect impacts of dust, runoff and other pollutants on designated sites and other habitats can be mitigated by implementing construction mitigation measures and through good construction practices. Following survey and assessment, mitigation measures can be developed which will aim to satisfy legal protection or biodiversity obligations for protected species the scheme is likely to have a neutral impact.
Water Environment	Neutral	After mitigation, it is unlikely that there will be changes to the water environment or WFD classification of surface water bodies as a result of changes in discharges of runoff from the schemes. There are main rivers within the scheme boundary and consultation with the relevant statutory body will be required, permits needed and mitigation required. With these in place it is likely the scheme will have a neutral impact upon the water environment. Flood Zones 2 and 3 are present within the scheme boundary and the options to mitigate any adverse impacts upon these will need to be considered but it is considered likely there will be a neutral impact upon them.

3.7 Social impacts

A Social Impact Appraisal Report is included as Appendix B.6. This forms part of the DfT's Transport Appraisal Process, as part of the development of a SOBC. The summary in Table 3.3 provides an overview of the assessment.

Table 3.3 – Social Impact Assessment Summary

Indicator	Rating	Reasoning
Collisions	Slight Beneficial Impact	One fatal and two slight active travel collisions could potentially have been prevented had the scheme been in place. This would have led to a monetary saving of £1.71million (discounted to 2010).
Physical Activity	Moderately Beneficial Impact	Active Mode schemes are expected to generate an estimated 1300 additional daily walkers and cyclists trips. Moderate changes in journey time.
Security	Neutral	The Highways and Active Mode schemes have been designed to the relevant standards and guidance. Schemes expected to maintain the existing levels of Security potentially with some improvements in certain areas.
Severance	Slight Beneficial Impact	Some schemes are replacing existing schemes therefore there will be no change. New schemes are relieving existing Severance issues. Schemes are to be beneficial to existing and new walkers/cyclists.
Journey Quality	Slight Beneficial Impact	Reduced Traveller Stress via congestion and journey times being reduced by Highway schemes. Little/no impact on Traveller Views and Traveller Care.
Options and Non-Use Values	Not applicable	The schemes will not substantially change the availability of transport services within the study area these values shall not be assessed.
Accessibility	Slight Beneficial Impact	Active Mode schemes are expected to improve access across the A38 and provide links to facilities and services.
Personal Affordability	Slight Beneficial Impact'	There will be beneficial affordability impacts from car fuel and non-fuel costs, and with regards to active travel modes. Existing public transport fares will not be affected by the schemes.

3.8 Economic tables

The Economic Efficiency of the Transport System (TEE table) is shown in Table 3.4.

Table 3.4 – The Economic Efficiency of the Transport System (£000's)

Consumer – Commuting User benefits	All Modes	Road
Travel time	80,033	80,033
Vehicle operating costs	3,626	3,626
User charges	0	0
During Construction & Maintenance	0	0
NET Consumer - Commuting Benefits	***83,659***	***83,659***

Consumer – Other User Benefits	All Modes	Road
Travel time	67,020	67,020
Vehicle operating costs	3,448	3,448
User charges	0	0
During Construction & Maintenance	0	0
NET Consumer - Other Benefits	***70,468***	***70,468***

Business	All modes	Personal	Freight
Travel time	36,909	14,617	22,292
Vehicle operating costs	4,509	1,395	3,115
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	41,418	16,012	25,407
Private sector provider impacts			
Revenue	0		
Operating costs	0		
Investment costs	0		
Grant/subsidy	0		
Subtotal	0		
Other Business Impacts			
Developer contributions	0		
NET Business Impact	***41,418***		
Total			
Present Value of Transport Economic Efficiency Benefits (TEE)	***195,545***		
Notes: Benefits appear as positive numbers, while costs appear as negative numbers. All entries are discounted present values in 2010 prices and values.			

Table 3.5 below shows the Public Accounts (PA) table for the scheme.

Table 3.5 – Public Accounts (PA) (£000's)

Local Government Funding	Road
Revenue	0
Operating Costs	0
Investment Costs	0
Developer and Other Contributions	0
Grant/Subsidy Payments	0
NET Impact	0
Central Government Funding: Transport	
Revenue	0
Operating costs	3,878
Investment Costs	41,010
Developer and Other Contributions	0
Grant/Subsidy Payments	0
NET Impact	44,888

Central Government Funding: Non-Transport	
Indirect Tax Revenues	-5,290
Totals	
Broad Transport Budget	44,888
Wider Public Finances	-5,290
Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers. All entries are discounted present values in 2010 prices and values.	

Table 3.6 shows the Analysis of Monetised Costs and Benefits (AMCB) table, including summary information; total present value of costs (PVC) and benefits (PVB), net present value (NPV) and benefit-cost ratio (BCR) for the initial appraisal including wider economic impacts. In summary, the scheme generates an adjusted BCR of 4.46, which represents very high value for money. All numbers are expressed in thousands of pounds, unless stated otherwise.

Table 3.6 – Analysis of Monetised Costs and Benefits (AMCB), (£000's)

	£000's
Noise	
Local Air Quality	
Greenhouse Gases	
Journey Quality	
Physical Activity	8,020
Accidents	1,710
Economic Efficiency: Consumer Users (Commuting)	83,659
Economic Efficiency: Consumer Users (Other)	70,468
Economic Efficiency: Business Users and Providers	41,419
Wider Public Finances (Indirect Taxation Revenues)	5,290
Present Value of Benefits (see notes) (PVB)	***199,986***

Broad Transport Budget	44,888
Present Value of Costs (see notes) (PVC)	***44,888***

OVERALL IMPACTS	
Net Present Value (NPV)	***155,098***
Benefit to Cost Ratio (BCR)	***4.46***
Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.	

3.9 Conclusions - value for money statement

This Value for Money Statement outlines the conclusions of the Economic Case.

3.9.1 Value for money category

Analysis has been undertaken on this study to identify suitable solutions to the problems on the A38. The final solution included a set of highway and active travel improvements.

Potential risks may be associated with the delivery of scheme. Higher proportion of risk may arise from delay in award and funding as well as delays in procurement delays. However, at this stage, some of these risks have been mitigated by including a higher optimism bias and a suitable risk.

The proposed scheme interventions comprise mainly several junction improvements, therefore most environmental and social aspects will most likely yield neutral or slight impacts. Hence, are no significant non-monetised impacts likely to occur. However, moderate increase in physical activity is estimated to be moderately beneficial.

The assessment work presented in the economic case shows that there is a case for the A38 scheme. The initial PVB equals to £190.26M and when compared against a PVC of £44.89M, the scheme demonstrates an initial BCR of 4.24.

When physical activity and collision benefits are included, the adjusted PVB equals to £199.99M and when compared against costs, the scheme demonstrates an initial BCR of 4.46.

There is some uncertainty inherent in the results of economic analysis primarily due to:

- Early design stage
- Cost uncertainty
- No consideration of land value uplift
- No COBALT assessment undertaken

The final BCR is higher than 4, and therefore confidence indicates that the scheme should provide high/very high value for money.

3.9.2 Key impacts on the public

The broad transport budget is £44,888m (2010 present value), based upon an assumed 2019 cost of £74.47m (Including Optimism Bias).

The scheme improvements will reduce congestion and journey times on the junctions along A38 through Bromsgrove area. The main benefits result from a reduced journey time for commuters and other users, resulting in journey time benefits of £147.05m. The vast proportion of time savings were in the magnitude of 5 minutes or greater per each trip. Similarly, business user classes and transport providers time savings benefits are £36.9m. The greatest proportion of journey time savings were in the magnitude of 5 minutes or greater per trip.

The economic assessment demonstrates how the scheme will meet the objectives defined in the strategic case, as set out below:

- **Support the delivery of housing and employment growth** – The modelling work shows that with the scheme in place, the congestion issues associated with future growth are reduced;
- **Reduce congestion and transport costs** – The scheme provides journey time and cost benefits, resulting in PVB of £195 million;
- **Maximise the efficiency of the road network** – The scheme proposed makes good use of the existing infrastructure and the scheme components are targeted at most significant issues on the corridor;
- **Increased journey time reliability** – The reduction in congestion will improve journey time reliability;
- **Improve conditions for pedestrians and cyclists** - The scheme provides five components improving conditions for pedestrians and cyclists. These schemes result in physical activity benefits of £8 million PVB.

3.9.3 Drivers for value for money category

The key driver for this value for money category is the relatively high transport user benefits experienced through a significant reduction in congestion. Additional wider impacts related to land value impacts are also anticipated, and so are recommended for inclusion within the next stage of appraisal.

3.9.4 Confidence in value for money

The initial BCR is higher than 4, and so we have confidence that the scheme provides very high/high value for money.

At the next stage of the business case development, the following enhancements to the economic case will be made:

- Modelling and assessment of dependent development;
- Further refinement of development infrastructure required in the model;
- Incorporation of wider impacts into calculation of benefits;
- A COBALT assessment will be undertaken at OBC stage;
- Further work required on the distribution of benefits throughout the day;
- In line with WebTAG, sensitivity tests to provide further confidence on the outcome;
- Review of development context in relation to emerging Local Plan review process.
- Sensitivity testing on high and low growth scenarios as a minimum should be undertaken at the next stage of appraisal to provide further confidence on the outcome.

3.10 Appraisal summary table

Appraisal Summary Table

Date produced:	June 2019

Contact:	
Name	Nigel Hudson
Organisation	WCC
Role	SRO

Name of scheme:	A38 Bromsgrove Route Enhancement Programme
Description of scheme:	Highway and Active Travel benefits on A38 near Bromsgrove between M5 Junction 4 and Worcester Road Roundabout

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
					£(NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Large journey time savings are anticipated in the region of 5-10 minutes across A38 by 2040	**Value of journey time changes (£)**: 36.91M **Net journey time changes (£)** **0 to 2min**: £8.59M; **2 to 5min**: £13.32M; **> 5min**: £15.00M	Large Beneficial	£41.42m	Not assessed
	Reliability impact on Business users	Large savings in journey times are anticipated resulting in more predictable and, therefore more reliable journey times	Not assessed	Slight beneficial	Not assessed	
	Regeneration	Guidance update and is Regeneration is no longer relevant	Not applicable	Not applicable	Not applicable	
	Wider Impacts	The approach assumes that delivery of transport infrastructure unlocks development at a site by providing additional transport network capacity. The economic benefit of proximity to enhanced transport infrastructure is capitalised within house prices and therefore reflected in residential land values.	Not assessed	Not assessed	Not assessed	
Environmental	Noise	The scheme has a number of noise important areas along the length of the A38 and sensitive receptors including residential dwellings and schools. Where the scheme will include additional lanes or extension of lanes there is the potential to bring noise closer to sensitive receptors which could result in a slight adverse impact. However, some works including signal changes, active travel corridors and construction of toucan crossings will likely have a neutral impact.	Not assessed	Neutral to Slight Adverse	Not assessed	Not assessed
	Air Quality	There are 4 AQMA's within the area, with 3 of these AQMA's along the A38 and either within the scheme boundary or in close proximity to the scheme boundary. Detailed air quality assessments have not been undertaken therefore it is not possible to determine at this stage if the schemes will have a beneficial or adverse impact upon air quality. Therefore, a precautionary approach is taken. The sustainable schemes will offer local users safe crossing points which could promote sustainable transport which could have a local beneficial impact. However, it is unlikely that this beneficial impact will be significant enough to have a beneficial impact upon the AQMA therefore in the absence of detailed air quality assessment and the location of the AQMA's within the scheme boundaries, it is likely that the scheme will have a slight adverse impact on the AQMA's during operation.	Not assessed	Slight Adverse	Not assessed	Not assessed
	Greenhouse gases	The environmental assessment work has shown that there will be an overall increase in greenhouse gases. The monetised benefits associated with greenhouse gases will be assessed as part of the OBC work.	**Change in non-traded carbon over 60y (CO2e)**: Not assessed **Change in traded carbon over 60y (CO2e)**: Not assessed	Slight Adverse	Not assessed	
	Landscape	The scheme is likely to require removal of vegetation which is likely to result in views to the scheme at certain locations. Other areas of the scheme will not require any vegetation removal and works are minor therefore there will likely be a neutral impact. In areas where removal of vegetation is required with mitigation in place there is likely to be a neutral to slight adverse impact.	Not assessed	Neutral to Slight Adverse	Not assessed	

Appraisal Summary Table

Date produced:	June 2019

Contact:	
Name	Nigel Hudson
Organisation	WCC
Role	SRO

Name of scheme:	A38 Bromsgrove Route Enhancement Programme
Description of scheme:	Highway and Active Travel benefits on A38 near Bromsgrove between M5 Junction 4 and Worcester Road Roundabout

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
					£(NPV)	7-pt scale/ vulnerable grp
	Townscape	The proposed schemes will result in no changes to Traveller Views as most of both Highway and Active Mode schemes are already in existence and are related predominantly to changes in junction layout. Therefore, there would likely be no change in a view.	Not assessed	Neutral to Slight Adverse	Not assessed	
	Historic Environment	It is unlikely that the scheme would directly impact upon any designated heritage assets as there are no designated heritage impacts within the scheme boundary. The scheme has the potential to impact upon unknown archaeological and further work is required but with committed mitigation in place there is likely a neutral impact.	Not assessed	Neutral	Not assessed	
	Biodiversity	Ecological surveys have not been undertaken but the schemes do not lie within ecological designations and it is unlikely that the scheme has direct linkages to any ecological designations. The scheme will require the removal of vegetation which will likely impact upon habitats and species, but direct habitat losses can be compensated by replacement habitat creation within the scheme. Potential indirect impacts of dust, runoff and other pollutants on designated sites and other habitats can be mitigated by implementing construction mitigation measures and through good construction practices. Following mitigation measures to satisfy legal protection or biodiversity obligations for protected species the scheme is likely to have a neutral impact.	Not assessed	Neutral	Not assessed	
	Water Environment	After mitigation, it is unlikely that there will be changes to the water environment or WFD classification of surface water bodies as a result of changes in discharges of runoff from the schemes. There are main rivers within the scheme boundary and consultation with the relevant statutory body will be required, permits needed and mitigation required. With these in place it is likely the scheme will have a neutral impact upon the water environment.	Not assessed	Neutral	Not assessed	
Social	Commuting and Other users	Users experience travel time benefits resulting from improved journey times provided by different elements of the Programme. The Programme improvements will reduce congestion and journey times on the junctions along A38 through Bromsgrove area. However, the most congested part of the A38 corridor is the northern section where the road leads to M5 Junction 4	**Value of journey time changes (£)** 147.05M **Net journey time changes (£)** **0 to 2min** £25.92M; **2 to 5min** £39.55M; **> 5min** £81.59M	Large Beneficial	£154.13M	Not assessed
	Reliability impact on Commuting and Other users	Journey time information has also been extracted from the modelling work. This shows with the schemes in place there is a reduction in journey time along the A38 corridor compared to a Do Minimum scenario	Not assessed	Slight beneficial	Not assessed	
	Physical activity	The impacts of the schemes associated with the scheme will therefore fall into the 'high' category as it is expected to affect an estimated 1300 trips per day. There are likely to be moderate changes in journey times.	Additional 1300 trips per day by 2025	Moderately Beneficial	£8.02M	
	Journey quality	The main benefits of the scheme are from reducing traveller stress by providing a safer and more reliable highway and sustainable transport network, with schemes in place to combat the congestion of future years. Both sets of schemes will be designed to the latest standards and guidance making sure that traveller care is at the forefront of each design	Not assessed	Slight beneficial	Not assessed	
	Accidents	The assessment found that one fatal and two slight active travel collisions could have been prevented over a five-year period, had the scheme been in	Not assessed	Slight beneficial	£1.71M	Not assessed

Appraisal Summary Table

Date produced:	June 2019

Contact:	
Name	Nigel Hudson
Organisation	WCC
Role	SRO

Name of scheme:	A38 Bromsgrove Route Enhancement Programme
Description of scheme:	Highway and Active Travel benefits on A38 near Bromsgrove between M5 Junction 4 and Worcester Road Roundabout

	Impacts	Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
					£(NPV)	7-pt scale/ vulnerable grp
		place. This would produce a total of £1,710,159 in collision benefits saved by the scheme.				
	Security	It is expected that these will maintain the existing levels of Security at each of the scheme locations, potentially with some improvements in certain areas	Not assessed	Neutral	Not assessed	Not assessed
	Access to services	The scheme makes connections to the railway station easier for those not using a private vehicle. Additionally, schemes 3 and 4 are 'new' connections then this will be beneficial for residents nearby and those who could use them on their journeys	Not assessed	Slight beneficial	Not assessed	Not assessed
	Affordability	Beneficial affordability impacts from car fuel and non-fuel costs are anticipated as well as with regards to active travel modes. Existing public transport fares will not be affected by the schemes.	Not assessed	Neutral to slight beneficial	Not assessed	Not assessed
	Severance	There are new schemes which would relieve existing severance issues, thus being 'slightly beneficial'. With the number of additional walkers and cyclists estimated to be 1300 trips per day these schemes will be beneficial to a proportion of these new and existing non-motorised users	Not assessed	Slight beneficial	Not assessed	Not assessed
	Option and non-use values	The A38 Bromsgrove Route Enhancement Programme will not substantially change the availability of transport services within the study area these values shall not be assessed.	Not applicable	Not applicable	Not applicable	
PA	Cost to Broad Transport Budget	Associated costs of construction, ongoing maintenance and operation of the Programme for the public sector	£44.89M	Not assessed	£44.89M	
	Indirect Tax Revenues	Loss of indirect taxation through reductions in fuel duty paid due to changes to travel speeds as a result of implementation of the Programme.	-£5.29M	Not assessed	-£5.29M	

4. Commercial Case

4.1 Introduction

The commercial strategy addresses the key project risks and enables the development of the project to programme whilst also ensuring an effective procurement and cost confidence. Key issues affecting the procurement strategy include the funding and its timeline and the multi-disciplinary requirements of the project scope.

The Commercial Case for the project takes into account the resources available to WCC and the risks associated with the project. It then goes on to assess the procurement routes to deliver the project in the most efficient way possible.

Further detail to support the Commercial Case is provided in Appendix C.1.

4.2 Output based specification

The Commercial Case is based on a number of key objectives and outcomes, against which alternative procurement options are assessed. These include:

- Achieving ‘cost confidence' that the project can be delivered within the available funding constraints.
- Delivering the project to support the MRN programme, Midlands Connect Strategy, GBSLEP and WLEP Strategy Economic Plans, Bromsgrove District Plan and Redditch Local Plan other WCC plans and polices.
- Meeting the programmed construction completion date.
- Minimising further preparation costs.
- Including contractor input into the project design and construction to encourage innovation and reduce capital costs.
- Including contractor input to the risk management strategy and appraisal process to reduce risk.
- Minimising future maintenance costs.
- Safety.

The scope of the scheme is set out in the Strategic Case.

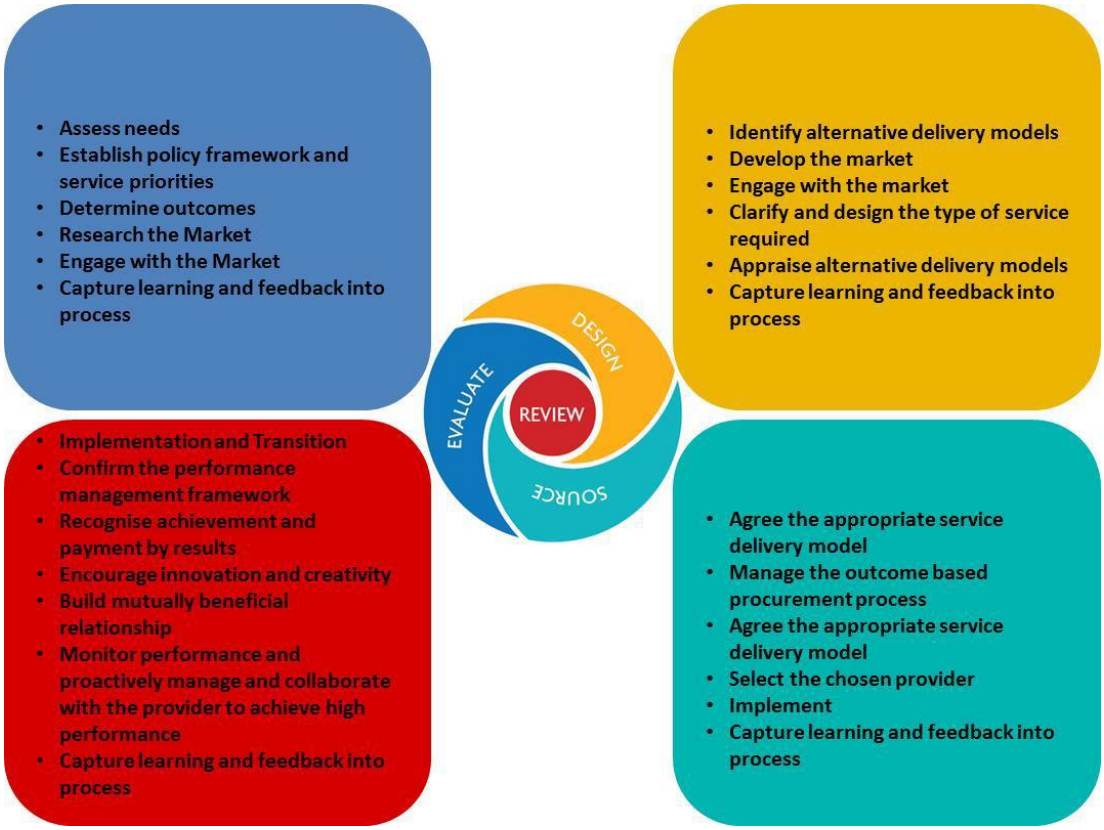
4.3 Procurement strategy

WCC has extensive in-house strategic and technical procurement expertise and a wealth of knowledge and experience, with a proven track record of delivery, with different types of contracts.

WCC is establishing itself as a strategic commissioning organisation that will only directly provide services where there is no viable alternative. Supporting this WCC has a commercial vision to "drive commercial excellence through developing an open, challenging and pro-active culture and deploying effective commissioning strategies to source the right service from the right provider at the right cost.”

Figure 4.1 describes the WCC approach to commissioning and procurement and has influenced the choice of the strategic procurement approach for the project:

Figure 4.1 – WCC approach to procurement



Having recently appointed contractors to deliver several strategic infrastructure projects, including Worcestershire Parkway Railway Station and the Design Development stage of the Worcester Southern Link Road Phase 4, the Council has recent and relevant market intelligence and commercial data to inform its decision-making and procurement plan. This is complemented by technical expertise from our term professional services supplier providing the breadth of both commercial and technical expertise required to prepare for and deliver the right contractual arrangements for the project. Market engagement specifically focused on this project will be included in the procurement programme.

4.4 Sourcing options

A number of options are available to WCC to procure the project. In deciding the preferred option there are a number of key considerations, these being:

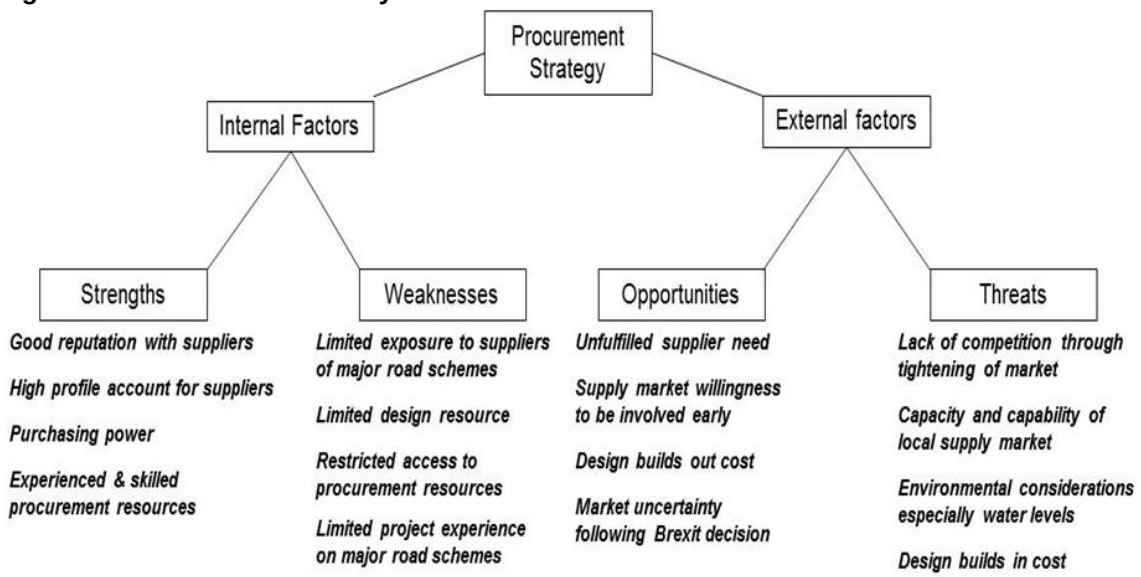
- **Price Certainty** - ensuring WCC secures best value throughout the project and not just at tender award
- **Whole Life Cost** - balancing investment cost with future maintenance costs to achieve best value over the life of the project
- **Innovation** - improving value and reducing overall cost
- **Incentives** - encouraging the supply chain to seek continuous improvement and cost down initiatives throughout delivery of the project
- **Supply Chain Integration** - reducing potential for project delays with all suppliers working to one plan
- **On Time Delivery** - ensuring that disruption to road users and local communities is kept to a minimum
- **Lean Contract Management** - minimising project resource requirements through effective and efficient contract management with single points of contact
- **Risk Sharing** - ensuring the ownership of risk is apportioned in line with securing best value
- **Social Value** - optimising content against WCC's corporate priorities

Given these considerations, the procurement options that have been taken into account to deliver the services necessary to develop and realise the design and undertake construction of this type of project are:

- Traditional Approach - Client undertakes or commissions design and appoints contractor.
- Traditional Approach Plus - Client undertakes / commissions design and appoints contractor with early contractor involvement (ECI).
- Design and Build Single stage - Single Award to Single Supplier for detailed design and construction post planning and development.
- Design and Build Two stage - Two stage award to Single Supplier for project development (Inc. ECI) and then detailed design and construction.
- Use of WCC's existing term suppliers. For example:
  - Infrastructure Engineering Term Contract. Services available: Highway improvements and structures projects. Design and construct or solely construct. Examples could be junction improvements, cycleways, corridor improvements, public realm enhancements, retaining wall construction & maintenance, bridge deck refurbishment, masonry repairs, etc. Size and value of projects range from £25k to approximately £10m. Term contract available until 2025.
  - Street lighting and illuminated traffic signs contract. Services available: Installation and maintenance of existing, new and replacement illuminated lighting assets. Contract total approximately £2m/year. Contract available until 2027.

Options analysis has been used to provide a critique of the internal and external environment in procuring the project via the options, as shown in Figure 4.2. The analysis has helped to inform how best to match the resources, capabilities and market conditions to the strategic options and selection of best strategic approach, in line with the following model:

Figure 4.2 – Procurement analysis



Using the "5 Cs" has helped decide which procurement strategy is right for the project and WCC. These "5Cs" being:

- **Clout** To give the Council the best negotiation position
- **Credibility** To make a real difference to social and environmental requirements
- **Capacity** To make best use of resources
- **Capability** To maximise the skills and experience available
- **Competition** The strategy that most suits WCC stance on collaboration

The options analysis undertaken at this stage in the scheme development concluded:

- Packages which may eventually make up the overall A38 scheme are likely to be of the order £7-10m; at this stage the scope of these packages has yet to be developed and will be defined further within the Outline Business Case.
- Funding sources for the scheme are still being developed.
- Use of existing term suppliers (e.g. civil engineering; street lighting) demonstrate that WCC have the capability to deliver the scheme. ECI can provide continuity as scope and funding sources become further defined. The recommended procurement approach will be identified within the Outline Business Case.
- This analysis will be developed further when scheme funding and package scope is further defined.
- The options to outcomes analysis is contained at Appendix C.1 and captures the various procurement routes, highlighting the decision to recommend using existing term suppliers.

4.4.1 Further consideration of procurement options

Having identified potential procurement options, a more detailed consideration of the ability to deliver the commercial objectives and an options analysis will be undertaken when scheme funding and package scope is further defined. This will include considering packaging of elements of this scheme alongside other local similar projects where suitable. This will be included within the Outline Business Case.

4.4.2 Recommended procurement strategy

The recommended procurement strategy will be identified within the Outline Business Case.

4.5 Payment mechanisms, pricing framework and charging mechanisms

This will be developed when the recommended procurement strategy has been identified; details will be included within the Outline Business Case.

4.6 Risk allocation and transfer

This will be developed when the recommended procurement strategy has been identified; details will be included within the Outline Business Case.

4.7 Contract length

This will be developed when the recommended procurement strategy has been identified; details will be included within the Outline Business Case.

4.8 Human resource issues

No relevant personnel/people management/trade union implications, including TUPE regulations have been identified for this project.

4.9 Contract management

Essential to the successful running of the contract are high-quality project management skills, complemented by specialist cost control expertise and sufficient support resources. These are required from the outset of project development right through to post-completion.

4.10 Summary

The Commercial Case shows that WCC, through use of existing term suppliers (e.g. civil engineering; street lighting) have the capability to deliver the scheme. ECI can provide continuity as scope and funding sources become further defined. The recommended procurement approach will be further explored within the Outline Business Case.

5. Financial Case

5.1 Introduction

The delivery of the scheme entails a three-stage cost lifecycle, as follows:

- Preparation costs from Programme Entry to Full Approval.
- Construction Costs.
- On-going liabilities including highways and bridge maintenance costs, scheme monitoring and evaluation.

The estimated total cost of the scheme is £49.84m (including Part 1 claims). This figure reflects 2019 prices, with inflation applied.

5.2 Schemes evaluated

The delivery of the A38 Bromsgrove Route Enhancement Programme (the scheme), is a priority for Midlands Connect, Worcestershire County Council, Worcestershire Local Enterprise Partnership, local Members of Parliament and Bromsgrove District Council. The programme is aligned with agreed priorities, in particular in terms of supporting economic growth in North Worcestershire. This business case sets out the proposed scheme. In summary the scheme provides highway and a non-highway infrastructure as set out in the tables below.

Table 5.1 – Proposed A38 Bromsgrove Route Enhancement Programme – Transport Schemes

Scheme	Scheme Location	Scheme Description	Scheme Outturn Cost
A	A38 / Hanbury Road	Provide a longer left turn lane on the Eastern A38 approach. Optimisation of signal timings to provide network control.	£544,617
B	A38 / Buntsford Drive to South of A38 / Charford Road	Provision of two northbound lanes over approximately 100m on approach to Buntsford Drive roundabout, continuing to A38 / Charford Lane approach. Reconfigured lane markings on approaches and circulatory at A38 / Sherwood Road / Austin Road junction. Enhanced North-South footway on northern side of A38 between Austin Road and Charford Road.	£10,227,024
C	A38 / Charford Road	Widening of the existing 60m two lane approach to enable vehicles to be able to pass within available stop line width, realignment of approach from Charford Road. Widening of Culvert on Stoke Road to facilitate third lane over structure and realign ahead and right turn movement lane to improve access into the left turn lane to the A38 Southbound. Relocate existing left turn pedestrian crossing on left turn from Stoke Road to A38 South. Enhance pedestrian crossing widths across A38 corridor, to enable provision as toucan crossings. Provision of additional footway from Charford Road to tie in with existing crossing location, and link better with Harvington Road (Scheme 1) sustainable scheme connection. Improve footway connection between A38 North crossing and Warwick Avenue. Optimisation of signal timings to provide network control. Improvements to signal timings, and provision of on crossing detectors.	£3,753,528
D	A38 / New Road	Provision of additional southbound traffic lane on A38. Realign Northbound A38 corridor to accommodate changes in southbound direction. Provision of wider crossing widths over A38 corridor to support at grade crossing in the future. (Element may need to be reconsidered at OBC stage, if the bridge located to the south is provided – Sustainable Scheme 3). Optimisation of signal timings to provide network control.	£5,250,129

Scheme	Scheme Location	Scheme Description	Scheme Outturn Cost
E	A38 / A448	Provision of two additional flare lanes (30 and 85m) on A38 north approach. Provision of a 61m flare lane on A448 East approach. Provision of longer flare lane (100m) on A38 South approach. Signalisation of A38 and A448 approaches with MOVA controller. Revisions to circulatory road markings and approach lane markings with supporting infrastructure.	£6,295,641
F	A38 / Birmingham Road	Provision of upgraded signal controllers, and on crossing detection. Optimisation of signal timings to provide network control.	£781,284
G	A38 / Golden Cross Lane / Braces Lane	Provision of two northbound and two southbound ahead movement lanes on A38 corridor. To provide circa 150m on northbound approach and 125m on southbound approach. Reconfiguration of lane markings southbound to facilitate lane 2 ahead movements. Widening of southbound exit to accommodate two southbound approach lanes. Relocation of A38 NB bus stop into B4185 Golden Cross Lane, to remove from unsafe location within existing merge. Relocation of existing bus stop lay-by on A38 Southbound. Consideration to be given to removing lay-by for bus stop at this location at next design stage. Provision of pedestrian crossing facility on A38 south arm. Installation of on crossing detectors on all pedestrian crossing elements of signal junction. Increased pedestrian stagger on A38 North approach, to enable a larger pedestrian refuge waiting area. Optimisation of signal timings to provide network control.	£3,276,492
H	A38/ Birmingham Road to M42 Junction 1	Improvements along link, to include road marking alterations. Revisions to school lane junction.	£4,975,538
1	Buntsford Business Park to Morrisons (Sherwood Road)	Provide 3m wide shared footway/cycleway adjacent to A38 between Buntsford Drive and Sherwood Road. Provide transition from carriageway to cycleway from Buntsford Drive. Provide improved splitter island at Sherwood Road junction. Provide 3m wide footway/cycleway between A38 Roundabout and Sherwood Road.	£890,029
2	A38 between Buntsford Business Park (Charford Road) to Harvington Road	Provide 4m wide shared footway/cycleway along existing footpath. Provide cycle transition facility to Harvington Road. Review/Upgrade transition from pathway to Charford Road crossing.	£981,657
3	New Walking/Cycling bridge from Harvington Road to Old Station Road	Provide new walking/cycling bridge connection and associated access ramps between Old Station Road and Harvington Road. Stop up existing at grade crossing point over A38.	£6,234,877
4	Signal Controlled Crossing of A448 between Blackwood Road and Fordhouse Road	Provision of toucan crossing of A448 Amendments on approach to link crossing to adjacent north south routes.	£631,049
5	Upgrade bridge between Fordhouse Road to Carnforth Road to dual use	Provision of new larger bridge structure to accommodate cyclist provision.	£6,001,150
Total			£49,843,014

The estimated total cost of the scheme is £49.84m (including Part 1 claims). This figure reflects 2019 prices, with inflation applied.

5.3 Scheme costs

The estimated scheme capital out-turn cost comprises of preparation costs, construction costs, land costs, supervision costs and risk. The outturn cost has been profiled from a 2019 Quarter 3 baseline year and therefore allowances have been made for future inflation leading up to the opening of the project in Summer 2025.

The construction costs comprise highway, geotechnical and structure costs, and have been developed using Quarter 3 2019 rates, these rates have been prepared by a Quantity Surveyor as representing current rates.

The costs are based upon concept scheme design drawings (included in Appendix A.4) and Bill of Quantities, set out in Appendix D.1.

The estimated scheme capital outturn cost is the capital cost of the scheme from Approval of the Strategic Outline Business Case to one year after the scheme has opened.

The key costs of the project are:

- Highway Construction Costs – These are the estimated highway construction costs adjusted to allow for inflation up to the start of and during construction.
- Project Preparation Costs – These costs include project management, design and associated elements, environment, planning and legal costs.
- Land Costs.
- Site Supervision & Contract Management Costs – These are costs to oversee the construction phase.

Monitoring and evaluation costs have not been included at this early stage but will need to be considered further at the outline business case stage along with a monitoring and evaluation plan (in general monitoring and evaluation costs are estimated to be 0.5% of the construction cost).

5.4 Optimism bias

Optimism Bias has not been included in the costs reported in this case, optimism bias is accounted for in the Economic Case.

5.5 Risk assessment

At Strategic Outline Business Case, an allowance for Risk has been made, this will be refined at Outline Business Case stage using the Quantified Risk Assessment methodology. The Risk allowance within the outturn cost equates to (£9.314m excluding inflation or £10,681m including inflation).

5.6 Inflation

Table 5.2 sets out the assumed inflation information for the proposed scheme costs, the inflation has been forecast using the most recent Bank of England inflation forecasts, together with historic Consumer, Construction and Labour Prices Indices. Data for Quarter three is mapped to 2019/20. Further inflation will therefore reflect the second quarter of the Calendar year. The forecast inflation through to 2025/26 is shown below:

Table 5.2 – Inflation Assumptions

Inflation	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Construction Inflation	3.71%	3.82%	3.99%	3.99%	3.99%	3.99%
Professional Services	3.43%	3.54%	3.69%	3.69%	3.69%	3.69%
Land Values	3.71%	3.82%	3.99%	3.99%	3.99%	3.99%
CPI	1.98%	2.04%	2.13%	2.13%	2.13%	2.13%

The figures in Table 5.2 have been estimated and calculated as set out in the following sections.

5.6.1 Construction inflation

Construction inflation has been applied to Works Cost, Contingency and Risk elements of the overall scheme cost. It has been based upon the most recent data set from the Office for National Statistics (ONS), for construction output price indices (OPIs). The baseline data was assessed on the most recent available data to Q1 2019. For construction prices this is taken as a proxy for 2019 Q3.

Forecast inflation is then assumed to change in line with the Bank of England's forecasted changes in CPI inflation (from the Bank of England's May 2019 inflation report) from 2019/20 to 2021/22. For this analysis, it has been assumed that CPI stays stable at the 2021/22 level until 2025/26.

5.6.2 Professional services

Professional Services inflation has been applied to the Preparation and Supervision cost estimates. It has been based upon ONS average weekly earnings (AWE) for the whole economy. The baseline data was assessed on the most recent available data to Q1 2019. This is taken as a proxy for 2019 Q3.

Similar to construction inflation, forecast professional services inflation has been based on the Bank of England central view of future inflation, which flatlines from 2022/23 onwards.

5.6.3 Land values

Land value inflation is assumed to be the same as construction output inflation as no separate reliable baseline land value inflation indices was available.

5.6.4 CPI

The CPI inflation is taken directly from the Bank of England inflation report[1]. It is repeated below:

The Bank of England forecast increase in CPI is set out in Table 5.3:

Table 5.3 – Inflation

Year	Matched to Financial Year	Median	Inflation Growth
2019 Q1	2019/20	1.82	N/A
2020 Q1	2020/21	1.98	9%
2021 Q1	2021/22	2.04	3%
2022 Q1	2022/23	2.13	4%

As the table above shows, inflation is expected to increase by 9% in 2020, to 2020/21. Inflation is further expected to decrease by 8.7% by 2021/22. This profile has been used to forecast inflation. As noted above, we expect construction price, land value and professional services inflation to flatline from 2021/22 onwards.

[1] Source: *https://www.bankofengland.co.uk/inflation-report/2019/may-2019*

5.6.5 Inflation methodology

The inflation information has then been compounded taking into account a baseline cost year of Quarter 3 2019. The compounded interest rates are outlined in Table 5.4.

Table 5.4 – Compounded Inflation

Cost Item	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Works Cost	103.71%	107.67%	111.97%	116.44%	121.08%	125.91%
Land Cost	103.71%	107.67%	111.97%	116.44%	121.08%	125.91%
Preparation	103.43%	107.09%	111.04%	115.14%	119.39%	123.79%
Supervision	103.43%	107.09%	111.04%	115.14%	119.39%	123.79%
Risk	103.71%	107.67%	111.97%	116.44%	121.08%	125.91%

The inflation rates set out above have been applied to the various elements of the scheme costs breakdown as set out in Table 5.5, which are shown in more detail in Appendix D.2.

Table 5.5 – Scheme development costs (£'000)

Cost type	2019 Q3 Baseline costs	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Total
Preparation	£9,572	£2,368	£4,560	£2,993	£0	£0	£0	£0	£9,922
Construction (incl. land & Part 1 Claims)	£21,610	£0	£26	£237	£4,640	£8,081	£12,189	£518	£25,690
Site Supervision	£3,055	£0	£0	£0	£699	£1,189	£1,663	£0	£3,551
Total cost without Risk	£34,237	£2,368	£4,586	£3,230	£5,339	£9,270	£13,851	£518	£39,162
Risk	£9,314	£466	£816	£854	£1,953	£2,432	£4,160	£0	£10,681
Total cost including Risk	£43,551	£2,834	£5,402	£4,084	£7,292	£11,702	£18,012	£518	£49,843

Notes:

1 Preliminaries not included as a separate item in Table (included as either 25 or 30% of construction cost)

2 Monitoring and Evaluation included (these are estimated to be 0.5% of the construction cost)

3 Part 1 claims included.

5.6.6 Budgets and funding cover

The scheme has identified local contributions from a combination of local funds and developers equating to a total of £7.644m (15.34%) of total scheme costs, but the majority of funding is sought from the DfT. Table 5.6 shows the breakdown of funding by source.

Table 5.6 – Funding Sources (£'000)

Cost	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Total
Department for Transport	£850	£0	£5,685[2]	£7,292	£11,627	£16,715	£31	£42,199
Local contribution (WLEP)	£530	£5,255	£0	£0	£0	£0	£0	£5,785
Local contribution (S106)	£0	£0	£0	£0	£75	£1,297	£487	£1,859
WCC Forward Funding OBC[1]	£1,454	£0	£0	£0	£0	£0	£0	£1,454
WCC Refund from WLEP for OBC[1]	£0	-£1,454	£0	£0	£0	£0	£0	-£1,454
WCC Forward Funding of FBC[2]	£0	£1,601	-£1,601	£0	£0	£0	£0	£0
Totals	£2,834	£5,402	£4,084	£7,292	£11,702	£18,012	£518	£49,843

Note 1 – WCC will forward fund the production of the OBC during Financial year 2019/20 and will reclaim it from WLEP funding in financial year 2020/21.

Note 2 – WCC will forward fund production of FBC in Financial year 2020/21 and will capitalise from DfT funding in financial year 2021/22

The scheme costs above have been based upon construction rates of projects currently under construction within the Worcestershire County Council area by the term contractor, as such they are expected to represent a good estimate of scheme costs at this stage of scheme development.

Inflation forecasts reflect the current inflation position for the various indices plus the Bank of England near team forecasts for CPI.

5.7 Contributions strategy

Worcestershire County Council's adopted local policy provides for a transport contributions strategy - effectively a framework for the calculation of contributions from development to transport schemes. Funding to be obtained from development will support delivery of the scheme, however estimates of existing and future contributions from development will provide only part or this funding. Other public funding commitments have been made including via the Local Growth Fund but, after including WCC's own resources, there remains a substantial overall funding shortfall. An apportionment of the existing private and public funding has been earmarked to meet the Package 1 scheme match funding requirement.

The major development sites site out earlier in this business case are currently in the planning stage, and overall contributions are being sought to cover as a minimum the S106 allocation as defined in this financial case, a further update on progress on this will be provided at the OBC stage, as the sites in question are currently subject to discussions with Worcestershire County Council in relation to S106 contributions.

Policy BDP6 Infrastructure Contributions within the Bromsgrove District Plan and Policy 20 - Transport Requirements for New Development within the Redditch Borough Local Plan contain the appropriate mechanisms for seeking contributions from development proposals to mitigate their impact on the transport network.

5.8 Whole life costs

At this stage of scheme development, no assessment has been given to the additional maintenance costs and annual costs associated with the new structures, carriageway and footway elements of the proposed A38 Bromsgrove Route Enhancement Programme.

In line with WebTAG this will be assessed at Outline Business Case stage via appropriate evaluation tools.

5.9 Section 151 officer sign off

This Strategic Outline Business Case submission has been reviewed by, and a declaration received from, Worcestershire County Council's Section 151 Officer in the form of the signed Strategic Outline Business Case proforma.

5.10 Summary of financial case

The Financial Case sets out the project costs and funding sources to deliver the scheme.

The case demonstrates that WCC has considered all aspects of the schemes costs and has included within the project costs an assessed amount for contingency and project risks.

6. Management Case

6.1 Introduction

This section sets out how WCC proposes to deliver the A38 Bromsgrove Route Enhancement Programme (the scheme). It explains:

- The capability and capacity of the authority to deliver the scheme, drawing on evidence from other similar projects.
- The way in which the programme complements other schemes.
- Arrangements for project governance, including organisational structure and allocation of roles and decision-making powers.
- The project programme, which has been carefully planned to ensure that it is realistic and deliverable and aligns with the Major Road Network (MRN) guidance and process.
- The process being used to ensure that all the necessary assurance and approvals are obtained in a timely and efficient manner, and associated reporting.
- The strategy for effective communication and stakeholder management.
- The strategy and approach adopted to ensure effective risk management.

6.2 Evidence of previous similar projects

WCC has considerable experience of:

- Delivering major transport schemes on-time and on budget.
- Successfully obtaining consents for major infrastructure schemes and packages.
- Internal resourcing and governance requirements for major schemes & packages.
- Developing and maintaining good working relationships with key partners and stakeholders.
- Delivering schemes and packages via a suite of term contracts.

Examples of similar schemes successfully implemented by WCC include the following:

- **The Worcester Southern Link Road (SLR)**, phases 1, 2, and 3 which have delivered dualling and significant capacity improvements to roundabouts on the A4440 between Ketch and Whittington, completed to programme.
- **SLR Phase 4 -** £62m scheme construction in progress.
- **Kidderminster Railway Station Building -** £5m construction in progress.
- **Worcestershire Parkway Railway Station**, construction is in progress on this high-profile scheme to deliver a new station.
- **The Hoobrook Link Road (Phase 2)** in the South Kidderminster Enterprise Park. The £16m scheme included completing a link road to the south of the town centre, with a new bridge over the Worcestershire Canal and River Stour. The scheme was completed in summer of 2016.
- **The Worcester Transport Strategy (Phase 1) Major Scheme (WTS)**. This scheme comprised of a series of improvements to the network (walking, cycling, public transport and vehicular improvements) in and around the city of Worcester, including improvements to key corridors into Worcester city centre. The £19.65m package of work were successfully delivered in a timely manner and to budget.
- **Multi-Modal Corridor Enhancement Schemes**, along two key radial corridors in Worcester (both implemented in 2010/11):
  - **Newtown Road Corridor** funded through LTP2 & Section 106.
  - **Bromyard Road Corridor** funded through Communities Infrastructure Funding Round 2 (CIF2).

These projects were complex and demanding in nature, thus requiring new ways of working with partners and stakeholders to be established. The processes and working practices that contributed to the successful delivery of these projects will be used to the benefit of this scheme.

6.3 Relationship to other projects

The scheme proposed through this MRN bid complements a range of work recently implemented or currently being undertaken in the Bromsgrove area, including:

- **A38 Package 1, Phase 1** – works to the Barley Mow Lane junction of the A38 are currently being delivered on site.
- **A38 Package 1, Phase 2** – works to M5 Junction 4 and M42 Junction 1 are currently at detailed design stage and will progress to Full Business Case stage in 2020 with scheme opening scheduled for early 2021.
- **Bromsgrove Station** – the relocated and upgraded station for Bromsgrove opened in 2016.
- **National Productivity Investment Fund (NPIF)** – WCC was recently successful in securing funding for improvements to walking and cycling infrastructure on nine radial routes across Bromsgrove, including three routes that cross the A38 corridor. These works are currently being delivered.

6.4 Project dependencies

Physical project dependencies are described in the Strategic Case. In the Management Case the relationship and third-party project dependencies are described.

There are a number of decisions and deliverables that have been identified to be required from other parties in order for the A38 Bromsgrove Route Enhancement Programme to progress. These dependencies require permissions and/or legal processes in order to allow the project to progress. These issues are detailed in Table 6.1 below.

Table 6.1 – Details of project dependencies to ensure the successful completion of the A38 Bromsgrove Route Enhancement Programme

Dependency	Issue	Strategy
Funding availability	Insufficient scheme funding may prevent the scheme progressing or result in partial funding being handed back after award.	Early liaison with all funding partners.
Funding availability	If anticipated housing development does not come forward this would delay receipt of S106 funding and would result in a funding gap	Continued liaison with development control to understand position regarding S106 contributions. Realistic assumptions made about likely levels of contribution.
Delivery of Package 1, Phase 2	Package 1, Phase 1, incorporating works to the junction of the A38 with Barley Mow Lane is currently on site. Works to M42 Junction 1 and M5 Junction 4 are currently being progressed through the FBC process and will be reviewed by WLEP and GBSLEP in Autumn 2019. Failure to secure FBC approval at this point would result in these works not being delivered. Failure to deliver Phase 2 would not prevent the works in this MRN bid going ahead, but would impact the overall benefits delivered to the corridor.	Continued liaison with WLEP and GBSLEP on the business case for Package 1, Phase 2.
Land ownership	The junction improvements and pedestrian and cycle schemes which make up the scheme have been developed with the aim of requiring works only within the highway boundary. However, at some locations land take may be required, subject to design development. See Section 6 for further details. It is assumed at this stage of scheme development that this land can be secured by negotiation.	Early negotiation with land owners.

6.5 Governance, organisational structure and roles

The project management for the A38 Bromsgrove Route Enhancement Programme is based on the WCC Directorate of Economy and Infrastructure's Project Operating Model (POM) which is a PRINCE2 based project delivery framework. The POM is characterised by a clear governance process which provides a clearly defined structure and a robust gateway review process which controls each stage of project development.

The specific governance and organisational structure for this project has been tailored to meet the requirements of the scheme and its component projects. Project management procedures have been implemented to address the following key areas:

- Project organisation and responsibilities - involved parties and their roles.
- Presentation of project – deliverables, division into work units and time plan.
- Project planning and control – technical approval, progress measurement and monitoring.
- Communications plan – meetings, decisions & action logs, highlight reports and open issues log.

Specific attention has been given to governance, to provide a well defined structure and clear roles.

Table 6.2 shows the key project roles.

Table 6.2 – Key project roles

Member	Key roles and responsibilities	Resourced
WCC Cabinet	Overall responsibility	Yes
Project Board	Design and financial approval	Yes
WCC	Project management	Yes
Jacobs	Design and scheme development	Yes

6.5.1 Cabinet

WCC's Cabinet, shown in Table 6.3, has ultimate authority for the project and meets on a monthly basis.

Table 6.3 – Members of WCC Cabinet (as of May 2019)

Member	Responsibility
Simon Geraghty	Leader of the Council, Cabinet Member for Finance
Alan Amos	Cabinet Member for Highways
Adrian Hardman	Deputy Leader of the Council and Cabinet Member with Responsibility for Adult Social Care
Marcus Hart	Cabinet Member with responsibility for Education and Skills
Lucy Hodgson	Cabinet Member with responsibility for Communities
Karen May	Cabinet Member with responsibility for Transformation and Commissioning
Tony Miller	Cabinet Member with responsibility for Environment
Ken Pollock	Cabinet Member with responsibility for Economy and Infrastructure
Andy Roberts	Cabinet Member with responsibility for Children and Families
John Smith	Cabinet Member with responsibility for Health and Wellbeing

6.5.2 Project board

The Project Board comprises officers that hold the responsibility for the delivery of the A38 Bromsgrove Route Enhancement Programme. The Board is well established, having played an active role in developing and securing funding for the Package 1 schemes. It will continue to oversee design development and project delivery and will have a key role in terms of governance, accountability and decision making.

Project Board members from a wide delivery team play will play an active role in a number of scheme elements, including risk workshops, package sifting and public consultation. The group will meet regularly throughout the life of the project, including at key milestones. Project Board meetings will be arranged to coincide with key decision points in terms of procurement, design and financial approval.

Membership of the Board is detailed in Table :

Table 6.4 – Membership of the Project Board.

Member	Title	Role
Nigel Hudson	WCC/Head of Strategic Infrastructure and Economy	Senior Responsible Officer
Rachel Hill	WCC/Strategic Commissioner of Major Projects	Strategic Commissioner of Major Projects (will assume role of Senior Responsible Officer for project delivery stage)
Andrew Baker	WCC/Transport Planning and Commissioning Manager	Project Commissioner
Abhi Bhasin	WCC/Senior Transport Planner	Business Case Lead
Nick Secker	WCC/Project Manager	WCC Project Manager
Mike Dunphy	Bromsgrove District Council & Redditch Borough Council/Planning Policy Manager	District Council Representative
Christopher Bird	WCC/Transformation and Development Finance Manager	Finance Lead
Jonathan Elmer	North Worcestershire Economic Development & Regeneration	North Worcestershire Economic Development and Regeneration Representative

6.5.3 Senior Responsible Officer (SRO)

Nigel Hudson is the Senior Responsible Officer (SRO). Nigel's role is to lead the management and delivery teams and provide the interface with the WCC Cabinet. As SRO, Nigel will:

- Report to and receive feedback from the Project Board.
- Ensure the appropriate resources, project management and technical expertise are in place for the project.
- Make decisions and approve changes within agreed tolerances or seek authorisation if required.
- Monitor and evaluate project progress against milestones and assess outcomes.
- Provide guidance, support and direction to the Project Manager and project team.

After OBC stage the SRO role will pass to Rachel Hill, who will oversee the project through the design finalisation and delivery stages. Nigel and Rachel have undertaken similar roles on previous successful project and bring strong experience in both project development and scheme delivery.

6.5.4 Project manager

The WCC Project Manager for this project is Nick Secker. Nick will lead the management of delivery teams, providing an interface between the various approval boards and delivery teams, in accordance with the WCC Project Operating Model. The project will be managed in accordance with PRINCE2 principles with set tolerances, as agreed by the Project Board. The Project Manager leads the work of project teams and are members of the Project Board.

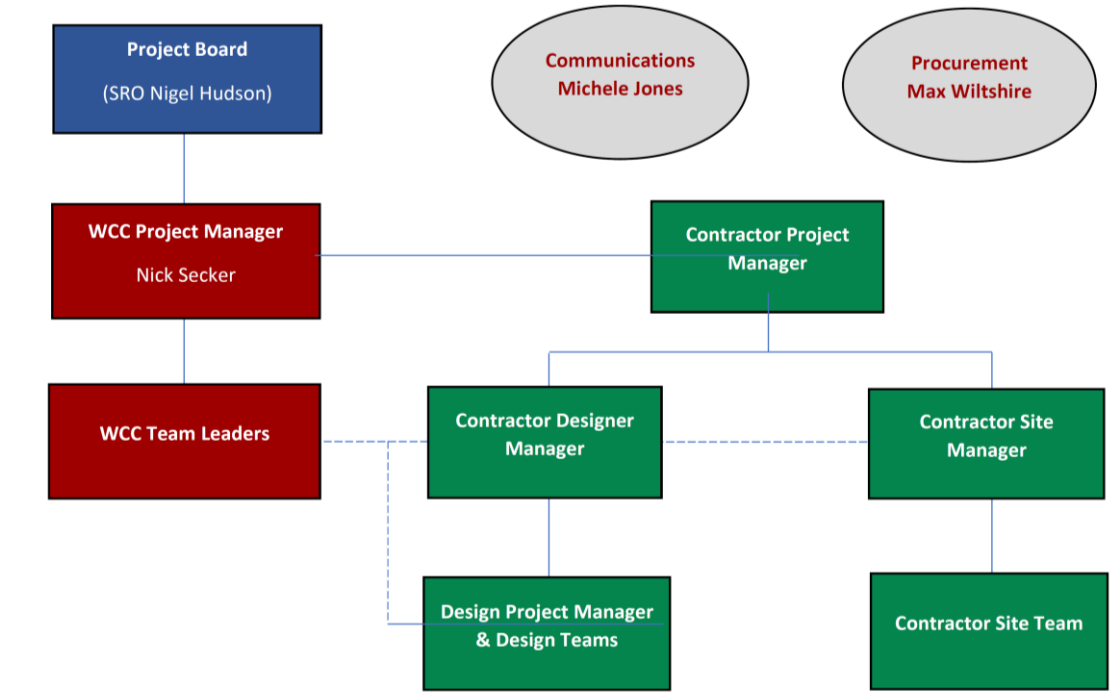
The role of the Project Manager is to:

- Lead and coordinate the project team and its work-streams
- Procure consultants and contractors
- Prepare and report project budgets
- Manage project risks and issues
- Report to and receive feedback from the responsible officer
- Produce periodic progress reports to relevant committees.

6.5.5 Project teams

The Project Manager is supported by a project team covering all related disciplines. In most cases a discipline has a lead officer or consultant who is, where relevant, supported by a co-ordinator and wider team. The project team structure is summarised in Figure 6.1: A full organogram is included as Appendix E.1.

Figure 6.1 – Project Organogram.



6.6 Planning, environmental and land strategy and constraints

6.6.1 Planning

Due to the scale and nature of the works required for both the highways schemes and the walking and cycling schemes, it is assumed that planning consent will be required for some elements, as shown in Tables 6.5 and 6.6. Note that at the next stage formal views on the planning requirements will be sought from Worcestershire County Council.

It is also assumed that an Environmental Screening Opinion may be required to determine whether planning and Environmental Impact Assessment is required for those works which fall within the AQMA. As the details of the schemes are developed through the Outline Business Case further analysis of planning requirements will be undertaken, in liaison with Worcestershire Development Control.

Table 6.5 – Planning implications of walking and cycling schemes

Scheme Number	Scheme location	Scheme Description	Planning Application or Permitted Development
1	Buntsford Drive to Sherwood Road	Active Travel Corridor – Buntsford Business Park and Morrisons (Sherwood Road)	Permitted development (assuming scheme remains within highway boundary)
2	Charford Road to Harvington Road	Active Travel Corridor – A38 between Buntsford Business Park (Charford Road) to Harvington Road	Permitted development (this assumes that the schemes is within/adjacent to the highway)
3	Harvington Road to Old Station Road	New walking/cycling bridge from Harvington Road to Old Station Road	Planning application required, as a result of requirement for new access ramps and widening of the structure.
4	A448 near Blackwood Road	Signal controlled crossing of A448 between Blackwood Road and Fordhouse Road	Permitted development
5	Fordhouse Road to Carnforth Road	Upgrade bridge between Fordhouse Road to Carnforth Road to dual use	Planning application required, as a result of requirement for new access ramps and widening of the structure.

Table 6.6 – Planning implications of highway schemes

Scheme Location	Scheme Location (for scheme description please see Strategic Case)	Planning Application or Permitted Development
A	A38/Hanbury Road	Permitted development
B	A38/Buntsford Drive to South of A38 / Charford Road	Planning application
C	A38/Charford Road	Planning application
D	A38/New Road	Planning application
E	A38/A448	Planning application
F	A38/Birmingham Road	Permitted development
G	A38/Golden Cross Lane/Braces Lane	Planning application
H	A38/Birmingham Road to M42 Junction 1	Permitted development

6.6.2 Environmental consents

An analysis of environmental constraints has been undertaken as part of the scheme development process and is included as Appendix A.2. This review has highlighted that some of the proposed highway works are in close proximity to water courses and as such the following consents may be required:

- Environmental permit (previously known as a Flood Defence Consent) – required for works on or near a main river, on or near a flood defence structure or in a flood plain.
- Ordinary watercourse consent – for works on or near all other watercourses (not main river or sea). This is applied for by contacting either the Internal Drainage Board (IDB) or the lead local flood authority or the Environment Agency.

In addition, it is noted that some works fall within designated AQMAs and Noise Important Areas, meaning that consultation will be required with Worcestershire Regulatory Services to determine requirements for assessment and consenting.

The areas where specific environmental issues have been highlighted to date are noted in Table 6.7 and 6.8 below. Further investigation, survey and liaison with the appropriate stakeholders, will be required as scheme development is progressed. Note that these tables present an initial assessment of the issues. Further work and discussion with stakeholders will take place at the next stage.

In the next stage of the project it will be important to undertake further analysis to:

- Understand whether any works may affect tress protected by Tree Preservation Orders.
- Undertake appropriate additional surveys and assessments, including ecological surveys, to determine whether there are any protected species or habitats which could be adversely impacted as a result of the scheme.
- Understand the nature of any impacts on public rights of way, including during construction and the extent to which these may require closure or diversions.

Table 6.7 – Environmental consenting requirements of walking and cycling schemes

Scheme Number	Scheme Location	Environmental issues/consents noted
1	Active Travel Corridor – Buntsford Business Park and Morrisons (Sherwood Road)	The main river of Sugar Brook flows south east through this scheme location. This location falls within Flood Risk Zone 3 (High Probability of Flooding) and Flood Risk Zone 2. As this scheme is adjacent to a main river, to carry out the development, an environmental permit would be required from the Environment Agency to ensure that the works do not increase flood risk, damage flood defences or harm the environment.
2	Active Travel Corridor – A38 between Buntsford Business Park (Charford Road) to Harvington Road	This scheme interacts with Spadesbourne Brook (main river) and also a tributary. Parts of the scheme location are within Flood Zone 3 (high probability of flooding) and Flood Zone 2 (moderate probability of flooding). As this scheme is adjacent to a main river and sections are within Flood Risk 2 and 3, to carry out the development an environmental permit would be required from the Environment Agency to ensure that the works do not increase flood risk, damage flood defences or harm the environment.
3	New Walking/Cycling bridge from Harvington Road to Old Station Road	The scheme is located in Flood Zone 1 (low probability of flooding). Within this location there are small streams and a pond. An environmental permit may be required from the Environment Agency to ensure that the works do not increase flood risk, damage flood defences or harm the environment. Removal of some trees would be required, with potential for Tree Preservation Orders.
4	Signal Controlled Crossing of A448 between Blackwood Road and Fordhouse Road	The scheme is located within Flood Risk Zone 1 (low probability of flooding). There is a small stream which flows along the west of the A38 Consent may be required from the Environment Agency to ensure that the works do not increase flood risk, damage flood defences or harm the environment.
5	Upgrade bridge between Fordhouse Road to Carnforth Road to dual use	The scheme is located within Flood Zone 1 (low probability of flooding) and close to a small tributary. Consultation will be required from the Environment Agency to ensure that the works do not increase flood risk, damage flood defences or harm the environment.

Table 6.8 – Environmental consenting requirements of highway schemes

Scheme Location	Scheme Location	Environmental issues/consents noted
A	A38/Hanbury Road	The scheme lies within the Redditch Road Stoke Heath AQMA. Additional assessment and consultation with Worcestershire Regulatory Services must be undertaken to determine whether there is a likely to be an air quality impact to the AQMA. The scheme lies within a Noise Important Area. Consultation with Worcestershire Regulatory Services will be required.
B	A38/Buntsford Drive to South of A38 / Charford Road	The scheme lies within the Redditch Road Stoke Heath AQMA. Additional assessment and consultation with the Worcestershire Regulatory Services must be undertaken to determine whether there is likely to be an air quality impact to the AQMA. Part of the scheme lies within a noise important area and the scheme as potential to bring noise levels closer to sensitive receptors. Consultation with Worcestershire Regulatory Services will be required and will form the assessment and design of the scheme. The junction of Austin Road roundabout is approximately 80 meters north west of the Sugar Brook (Main River). Consultation with the Environment Agency (or Lead Local Flood Authority) will be required.
C	A38/Charford Road	The scheme is adjacent to a noise important area. Consultation with Worcestershire Regulatory Services will be required. Whilst the scheme is not located within an AQMA it still has the potential to impact upon the Redditch/Stoke Heath AQMA. Consultation with Worcestershire Regulatory Services must be undertaken to determine what further assessment is required and whether there is likely to be an air quality impact to the AQMA. Spadesbourne Brook and Sugar Brook are located within the scheme boundary and are designated as main river. The Spadesbourne Brook culvert will need to be extended to accommodate road widening. The scheme will likely require an environmental permit. Consultation with the Environment Agency (or Lead Local Flood Authority) will be required.
D	A38/New Road	The scheme lies within a Noise Important Area. Consultation with Worcestershire Regulatory Services will be required. Whilst the scheme is not located within an AQMA it still has the potential to impact upon the Worcester Road AQMA. Consultation with Worcestershire Regulatory Services must be undertaken to determine what further assessment is required and whether there is likely to be an air quality impact to the AQMA The desk study has identified a section of watercourse to the south of New Road (near Wellington Road). Further work is required to determine whether there would be an impact upon the watercourse as a result of the scheme. The scheme may require an ordinary watercourse consent. Consultation with the Environment Agency (or Lead Local Flood Authority) will be required.
E	A38/A448	Whilst the scheme is not located within an AQMA it still has the potential to impact upon the Worcester Road AQMA. Consultation with Worcestershire Regulatory Services must be undertaken to determine what further assessment is required and whether there is likely to be an air quality impact to the AQMA. The scheme lies within a Noise Important Area. Consultation with Worcestershire Regulatory Services will be required. The closest flood zone (flood zone 3) is 300m west of the scheme. Further work is required to determine whether there would be an impact the flood zone as a result of the scheme. The proposed works fall within close proximity to non-main river watercourses. It is possible that an ordinary watercourse consent will be required. Consultation with the Environment Agency (or Lead Local Flood Authority) will be required.
F	A38/Birmingham Road	Whilst the scheme is not located within an AQMA it still has the potential to impact upon the Lickey End AQMA. Consultation with Worcestershire regulatory Services must be undertaken to determine what further assessment is required and whether there is an air quality impact to the AQMA. To the east of the scheme and adjacent to the A38 is flood zone 3. The Spadesbourne Brook crosses through the scheme but is not main river at this point. Given the small-scale nature of the works it is unlikely that there would be an impact upon the flood zones or the Spadesbourne Brook however further consideration should be given to this as the scheme progresses. Consultation with the Environment Agency (or Lead Local Flood Authority) may be required.

G	A38/Golden Cross Lane/Braces Lane	Whilst the scheme is not located within an AQMA it still has the potential to impact upon the Lickey End AQMA. Consultation with the Worcestershire Regulatory Services must be undertaken to determine what further assessment is required and whether there is likely to be an air quality impact to the AQMA. The scheme sits within a noise important area. Consultation with Worcestershire Regulatory Services will be required. There is one watercourse to the north and is likely to be within the scheme boundary. The scheme may require an ordinary watercourse consent. Consultation with the Environment Agency (or Lead Local Flood Authority) may be required.
H	A38/Birmingham Road to M42 Junction 1	The scheme is located partially within the Lickey End AQMA. consultation with Worcestershire regulatory Services must be undertaken to determine what further assessment is required and whether there is likely to be an air quality impact to the AQMA. The scheme is in a noise important area and close to sensitive receptors. Consultation with Worcestershire Regulatory Services will be required. At the southern edge of the scheme the main river of Spadesbourne Brook flows south west from the north east across the location of the proposed scheme and therefore there is a small section at the southern edge of the scheme in Flood Zone 3. Consultation with the Environment Agency (or Lead Local Flood Authority) may be required.

Note that for all schemes a tree preservation order check is required at the next stage.

6.6.3 Land

The package of measures has been developed with the objective of ensuring that works remain within the highway boundary, so as to avoid, where possible the need for land acquisition. For most of the schemes within the package this can be achieved. However, there are some specific locations where it is likely that small parcels of land will need to be acquired.

The requirement for land take will be reviewed as the schemes progress to preliminary design stage and in the context of consideration of potential departures from design standard:

Based on current understanding, land may be required, as set out in Tables 6.9 and 6.10.

6.6.4 Other consents

In addition to the above, Traffic Regulation Orders (TROs) will be required.

Table 6.9 – Land implications of walking and cycling schemes

Scheme Number	Scheme Location	Land requirements
1	Active Travel Corridor – Buntsford Business Park and Morrisons (Sherwood Road)	Yes, subject to design development.
2	Active Travel Corridor – A38 between Buntsford Business Park (Charford Road) to Harvington Road	No
3	New Walking/Cycling bridge from Harvington Road to Old Station Road	No
4	Signal Controlled Crossing of A448 between Blackwood Road and Fordhouse Road	No
5	Upgrade bridge between Fordhouse Road to Carnforth Road to dual use	No

Table 6.10 – Land implications of highway schemes

Scheme Location	Scheme Description	Requirement for third party land?
A	A38/Hanbury Road	Temporarily only
B	A38/Buntsford Drive to South of A38 / Charford Road	Yes, subject to design development.
C	A38/Charford Road	Yes, subject to design development.
D	A38/New Road	No
E	A38/A448	No
F	A38/Birmingham Road	No
G	A38/Golden Cross Lane/Braces Lane	Yes, subject to design development.
H	A38/Birmingham Road to M42 Junction 1	No

The working assumption at the moment is that land will be acquired through negotiation. The risk on land acquisition is noted in the risk register, and will be investigated further at the next scheme stage.

6.7 Project plan

A project plan has been developed for delivery of the A38 Bromsgrove Route Enhancement Programme setting out the main project stages between MRN programme entry and full scheme completion and their anticipated timescales. The plan (included as Appendix E.2) defines key milestones, dates, identifies dependencies between work streams and approvals and highlights the critical path. It also shows an initial programme for anticipated construction for each of the schemes.

A number of key principles have been determined, which provide the overall framework for the programme. These are the DfT approvals process, gateway review stages, scheme design, procurement processes and the construction period.

A copy of a high-level programme is included Table 6.11, outlining the key dates leading to scheme opening.

Table 6.11 – Project programme.

Work stage	Milestone	Target date
MRN SOBC	Submission of SOBC for consideration by DfT under MRN process	June 2019
	Approval of SOBC	July 2019
MRN OBC	Further scheme development and preparation of OBC for MRN process	July 2019 – May 2020
	Submission of OBC	May 2020
	Approval of OBC	August 2020
MRN FBC	Procurement	August 2020 – October 2021
	Detailed design	November 2020 to June 2021
	Statutory processes (assumes no CPO)	August 2020 to October 2021
	FBC development	October 2020 – October 2021
	Submission of FBC	October 2021
	Approval of FBC	December 2021
Construction	Construction (see detailed programme for phasing)	April 2022 – March 2025
	Full scheme opening	April 2025

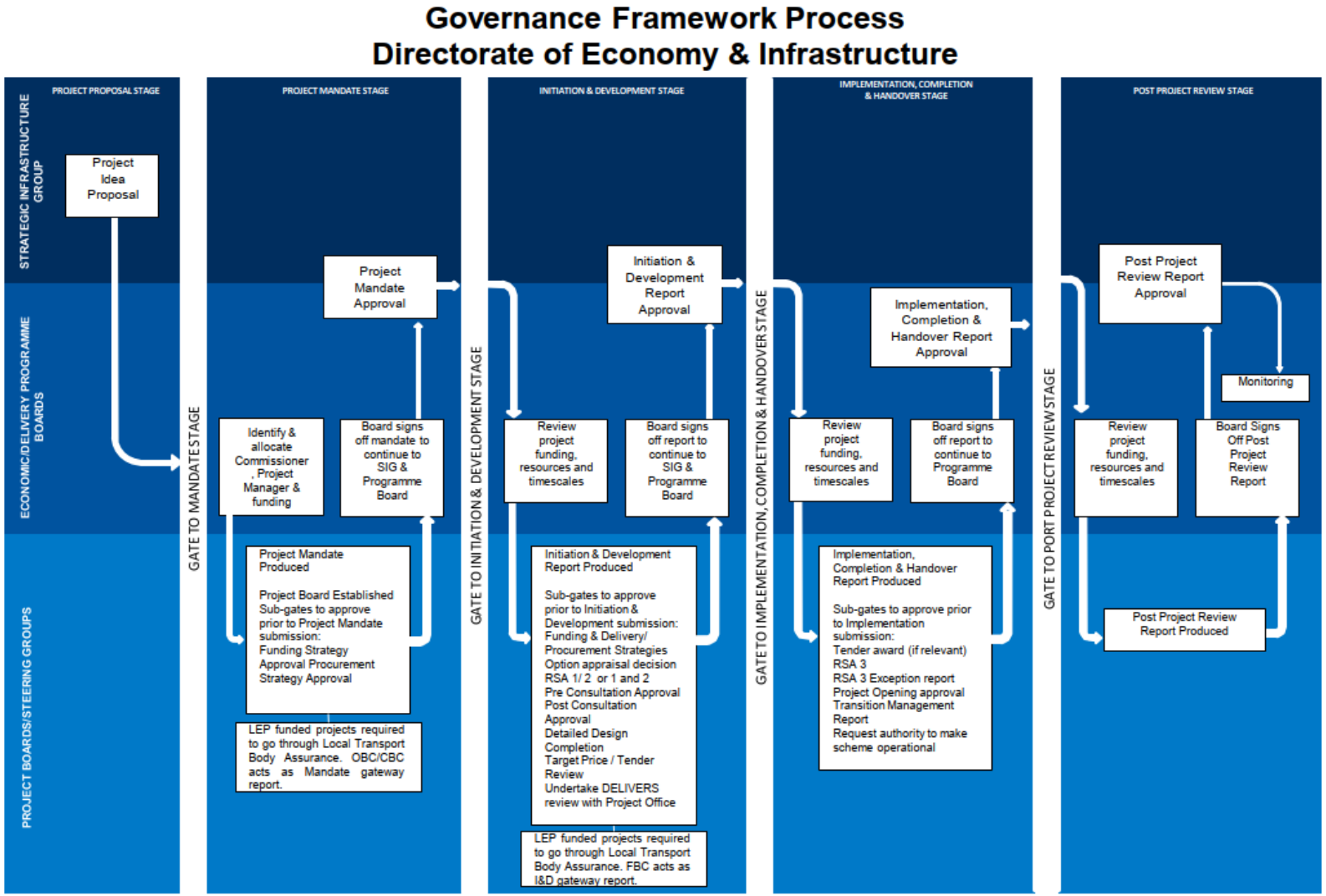
6.8 Assurance and approvals plan

The Project Board is responsible for Project Assurance, ensuring that the project remains on target in terms of business, user and technical objectives. This includes conducting Gateway Reviews at key stages in the project life cycle to determine whether or not the project can proceed to the next stage. The council will be following the guidance of Gateways Reviews set out by the Office of Government Commerce (OGC). Gateway reviews will be undertaken at the following stages:

- **Gateway Review 0 - Strategic Assessment.** An internal review by the project board that investigates the direction and planned outcomes of the project.
- **Gateway Review 1 - Business Justification.** This first project review comes after the Strategic Outline Business Case has been prepared. It focuses on the projects business justification prior to the key decision on approval for development proposal.
- **Gateway Review 2 - Delivery Strategy.** This review investigates the Outline Business Case and the delivery strategy before any formal approaches are made to prospective suppliers or delivery partners. The review may be repeated in long or complex procurement situations.
- **Gateway Review 3 - Investment Decision**. This review investigates the Full Business Case and the governance arrangements for the investment decision. The review takes place before a work order is place with a supplier and funding and resources committed.
- **Gateway Review 4 - Readiness for service.** This review focuses on the readiness of the organisation to go live with the necessary business changes, and the arrangements for management of the operational services.
- **Gateway Review 5 - Operations Review and Benefits Realisation.** This review confirms that the desired benefits of the project are being achieved, and the business changes are operating smoothly. The review is repeated at regular intervals during the lifetime of the new service/facility.

Gateway Reviews include a Stage Gate Assessment prior to Programme Entry submission. The key stages, illustrated in Figure 6.2, relate to the typical way in which WCC works (based on previous experience of working with the LEP).

Figure 6.2 – Project governance, approval and funding stages for WCC projects.



Regular Project Boards and Major Project Reviews are held throughout the life of the project, with monthly highlight reports submitted and reported on at Programme Boards.

The key stages of the WCC process, shown in Figure 6.2 relate to the OGC stages as follows:

- Gate to mandate - Gateway Review 0. The mandate was approved at WCC's Strategic Infrastructure Group on 1st February 2017.
- Gate to initiation and development stage - Gateways 1,2 and 3.
- Gate to implementation, completion and handover stage - Gateway Review 4.
- Gate to project review stage - Gateway Review 5.

Project Board members will receive regular Highlight Reports from the Project Manager to aid them in the decisions made at gateway stages. The scheme will also be subject to continuous peer review by the Directorate of Economy and Infrastructure Programme Board, which includes officers from a range of disciplines including business, user and technical officers.

6.9 Stakeholder management and communications

6.9.1 Engagement undertaken to date

Consultation on the principle of the A38 Bromsgrove Route Enhancement Programme has previously been undertaken indirectly, via the Worcestershire LTP4. Consultation versions of the LTP have included information on the A38 Bromsgrove Route Enhancement Programme meaning that they have been subject to various high-level consultations as part of both LTP3 and LTP4. In addition to this, references were made regarding the need for enhancements to the A38 in the Bromsgrove & Redditch Local Plans, meaning that the schemes have been subject to high level consultation and discussion though the Local Plan process leading up to the adoption of the plans in 2017.

As part of the development of the overall A38 Bromsgrove Route Enhancement Programme, and Package 1 specifically, there has been some targeted engagement with project partners, including with Highways England. However, there has, to date, not been any specific consultation with wider audiences on proposals for the full corridor.

To encourage and manage the involvement of key audiences, an outline Stakeholder Management & Engagement Plan has been formulated and this is included as Appendix E.4. This is summarised below and will be developed further at OBC stage.

6.9.2 Stakeholder engagement

The principles of communication that will underpin communications and engagement work on this project are:

- Creating an environment where project parties (particularly WCC) are able to provide an open and consistent approach to stakeholder management and communications through a clear and up to date stakeholder strategy plan.
- Promoting advocacy for the proposals from key external stakeholders by engaging on an ongoing basis as the project progresses, communicating and promoting the benefits and dealing with any concerns in a timely way.
- Publicising the project within the context of wider improvements.
- Ensuring users and residents are aware of any planned disruption as a result of the works, in good time, to be able to plan alternative travel if necessary.
- Carrying out sufficient early consultation to ensure a smooth passage of delivery, having first considered any reasonable requests for mitigation measures pertaining to the scheme.
- Presenting a united front between WCC and stakeholders on the scope, delivery and ultimate operation of the scheme.

6.9.2.1 Key Messages

It will be vitally important to keep all relevant parties informed about the progress of the project, both through the scheme development stage and latterly, through construction. These messages need to be communicated in a timely and appropriate manner that is suitable for their specific audience. The priority for each key audience will be to clearly explain what the project will and will not achieve, increase understanding, create a positive perception of the project, and to minimise any negative publicity for the project.

The key messages that will need to be communicated as the scheme is developed and will be included when information is circulated to target audiences through the channels identified, will need to explain that the scheme:

- Is a package of measures for the A38 corridor as a whole.
- Targets key junctions that contribute to delay and journey time reliability.
- Is required to ensure the A38 corridor can better cope with increasing traffic demands in the future.
- Aims to, in parallel, support walking and cycling.
- Will improve journey times and journey time reliability.
- Complements works already being progressed for Barley Mow Lane, M5 Junction 4 and M42 Junction 1.
- Is a key component of the Worcestershire LEP's Strategic Economic Plan and WCC's LTP4 and compatible with Local Plans.

6.9.3 Communications strategy

The proposed nature and frequency of communication will vary from stakeholder to stakeholder and will involve:

- Regular liaison with and briefings for key stakeholders, including local Councillors.
- Liaison with the district councils and neighbouring councils.
- A formal consultation to help inform scheme design during OBC stage. A public engagement exercise will be held during the development of the scheme and additional events held, if required, during delivery.
- Pre-application consultation on schemes requiring planning consent.
- Feedback on project at key dates during the scheme development.
- Dissemination of post-opening project evaluation studies, at the one-year and five-year stages after implementation.

The aims and objectives of the communication strategy for engagement with stakeholders and the public are:

- To increase the number of people aware of the proposals;
- To improve member and key stakeholder involvement with regular dissemination of information as the scheme progresses.
- To manage the reputation of WCC.
- To increase the amount of public participation and amount of feedback received through public engagement exercises from key stakeholders, residents and businesses about the effectiveness of the implementation of the A38 Bromsgrove Route Enhancement Programme. This information will provide one of the baseline measurements required to determine the success of the project post-delivery and help to underpin any future funding applications for further phases.

The key audiences for the communications strategy will be:

- Worcestershire County Council (Councillors/Officers)
- Department for Transport (DfT)
- Worcestershire LEP
- Greater Birmingham & Solihull LEP

- Highways England
- Chamber of Commerce/Federation of Small Businesses/Institute of Directors
- WCC Cabinet, in particular the Cabinet Member with Responsibility (CMR)
- Bromsgrove District and Redditch Borough Councils (officers and local members)
- Parish Councils
- Environment Agency
- Developers
- Utilities
- Local Member of Parliament
- Neighbours and local residents
- Commuters
- Local businesses
- Local media and Trade Press organisations
- Sustrans and other walking and cycle groups (e.g. Ramblers Association)
- Open Space Society
- Natural England
- Bus/taxi operators
- Schools & colleges;
- Landowners
- Other organisations identified as consultees through the planning process.

There will be face to face meetings and/or workshops held as required during project development. Invitations to face to face meetings will be extended to:

- Cabinet
- Members of Parliament and Local Members
- District and Parish Councils
- Residents
- User groups.

All general enquiries will be channelled through the web address in the first instance and dealt with by a member of the project team. In addition, the project team will provide information to the Worcestershire HUB (the first port of call for public enquiries) and Highways Control Centre, to assist them in answering calls. Alternatively, stakeholders may write via letter to the County Council.

WCC will ensure local media are aware of the project. A press release including supportive statements from stakeholders will be used to announce the scheme at an appropriate time and provide updates on the project. If necessary, site visits and personal briefings will be used to inform key media about the project, highlighting positive achievements and the benefits to local residents and businesses. WCC has a dedicated press/communications officer in place for the duration of the project to handle press enquiries.

Communications with the wider public and ongoing liaison with stakeholders is critical for the success of the project and their engagement will be maintained by utilising a range of mechanisms for ongoing communications. It is vital that any communication requirements, progress and implementation are discussed as a standing agenda item on the project team and Project Board meetings.

6.10 Project reporting

For each phase of the project, a Project Initiation Document (PID) is established and approved by the Project Board. This is a ‘working document’ which defines:

- What the project intends to achieve
- Who is responsible
- How it will be achieved
- When it will be delivered.

The PID includes a detailed project plan, which captures the ‘key tasks’ to be achieved prior to the project proceeding to the next stage.

The Project Board's role is to ensure that the project is developed and managed in accordance with the PID and to provide oversight and advice to the Project Manager to enable progress in a timely manner.

The Board typically meet every six weeks and its decisions are recorded and communicated to provide appropriate corporate governance for the project and its development. In advance of the Project Board, the Project Manager, submits a 'highlight' report monthly, detailing progress in accordance with the PID. The Project Board occasionally invites a wider audience to attend, when deemed beneficial to the current stage of the project. Whilst these bodies will not have responsibility for the project, their attendance and participation are key to the successful delivery.

Throughout the development of the scheme, various documentation will be provided to support the MRN bid process. These documents will reflect DfT guidance on the Business Case process.

From our wider team's experience of working with DfT, we are aware that for previous large schemes funded by DfT, there is a requirement to complete Quarterly Monitoring Returns to demonstrate progress against key milestones and to record spend against budget. These returns are prepared by the Project Manager and submitted quarterly in line with DfT's request. From time to time it may be appropriate for a verbal or face-to-face progress meeting with DfT. These will be arranged at a time of mutual convenience, with relevant members of the Project Team travelling to London if required.

6.11 Risk management strategy

The accurate evaluation and pro-active mitigation of risk is critical to the success of the project.

To ensure that all risks were captured at an early stage in the project a risk register has been undertaken for the scheme. Relevant owners have been allocated for each risk and progress on the management of the key risks is discussed at each Project Board meeting. A copy of the risk register is included in Appendix E.3.

The risk register logs the full spectrum of potential risks to the planning and delivery of the scheme, covering the following categories:

- Strategic (issues relating to 'fit' with other schemes, and relationship with housing growth)
- Political
- Legislative and statutory powers
- Financial
- Design, construction and environmental.

The risk register will continue to be reviewed on a regular basis. As the project moves forward the scheme development, delivery and contractor teams will be responsible for managing their risks and reporting any newly identified risks to the Project Owner and Board. Risks escalated to medium or high, which could impact on the progress of the project, will be referred to the Senior Responsible Owner. The key risks are listed in Table 6.12.

The management strategy will then look to avoid or reduce the risk. In some cases additional technical work or surveys, or early discussions with partners may reduce or mitigate the risk. Risk management is embedded into the project delivery. The risk register will continue to be reviewed on a regular basis.

At later stages of the project, delivery and contractor teams will be responsible for managing their risks and reporting any newly identified risks to the Project Manager. Risks escalated to Medium or High which could impact on the progress or financial position of the project will be referred by the Project Manager to the Project Board. A Quantitative Risk Assessment (QRA) will be prepared for the project as part of the Outline Business Case work. The main purpose of QRA will be to support the scheme costing by predicting the level of risk contribution, having a defined level of confidence, to cover the construction of the scheme.

The Council has an overall framework for managing risk. Primary responsibility for managing risk on a day-today basis rests with those operational/strategic/project managers who are closest to the service/project and responsible for its delivery. In projects and other specific areas of work, risk registers identifying key risks and mitigating actions are used as a record and tool for monitoring this work. At Head of Service and Directorate level there are aggregated risk registers which identify the top risks at that level, and the actions in place to address these risks. From these is drawn a Corporate level Risk Register which identifies the top risks for the Council and actions in place. These top level risk registers are reviewed on a quarterly basis, and a report on the Corporate Risk Register is taken to Cabinet and the Audit and Governance Committee twice a year.

Table 6.12 – Key project risks and risk management strategy.

Key Risks	Mitigation
Land acquisition –whilst scheme development has sought to remain within the highway boundary some areas of land will be required, subject to design development. Where land is required the overall aim will be to acquire land by negotiation. However, where not all land can be acquired via negotiation there may be a requirement for a CPO with a risk of Public Inquiry resulting in delay to the programme. See above for full details.	Secure all land by agreement, engage early with local land owners.
In some areas it is noted that records showing the extent of the adopted public highway do not correlate with what is seen on the ground. This issue has been noted for Package 1 schemes and may affect other locations on the corridor.	Early identification of areas where land boundary records may be inconsistent/early discussion with WCC.
Statutory and other approvals (including TROs and environmental consents) leading to delays to the programme, full approval delays or construction delays. See above for full details.	Identify and prioritise all approvals and agreements required. Approvals to be sought in a timely fashion. Early engagement with relevant bodies to be undertaken – ongoing. Maintain approvals and agreements to monitor status.
Lack of stakeholder and public support, resulting in delay to the programme, and/or reduction in scope of scheme.	Keep involved via regular briefings.
Works will interact with utilities with potential to increase time and costs through re-design.	Undertake records searches to understand the numbers of statutory undertakers affected.
Buildability – proposed retaining wall between Buntsford Road roundabout and Austin Road / Sherwood Road (Morrisons) roundabout not assessed at this stage.	Undertaken further study to determine feasibility.
Possible issues raised by road safety audits may lead to additional requirements/change of scope. For example, at Braces Lane the proposal may move the running edge of traffic closer to the narrow footways.	Undertake further design work to further consider this issue.
DfT funding is not obtained (or once obtained withdrawn or delayed)	Ensure need for improvements is clearly conveyed at all levels.
Key stakeholder/political decisions affect programme scope/delivery	Early and continued engagement with key stakeholders.
Loss of stakeholder and public support resulting in delay to programme and/or reduction in scope of scheme	Early and ongoing engagement.

6.12 Summary of management case

The Management Case demonstrates that WCC has the necessary resources and proven expertise to deliver the scheme in accordance with the programme and budget. Indeed, by carrying forward the project team and governance structure already in place to deliver the Package 1 schemes, this bid benefits from an established process, with a clear process for assurance and approvals. Furthermore, the project has a clear and achievable programme that aligns well with the overall timeframe of the MRN process. In addition, the project team demonstrates a good understanding of likely risks, reflecting the fact that the proposed schemes are at a good stage development.